OPEN DROPS TO OPEN HEARTS!

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JOURNEY OF AN ANESTHESIOLOGIST FROM INDIA TO AMERICA

SHREENIWAS JAWALEKAR

Outskirts Press, Inc.
Denver, Colorado

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v6.0 r1.0

Outskirts Press, Inc.
http://www.outskirtspress.com

ISBN: 978-1-4327-5269-9

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PRINTED IN THE UNITED STATES OF AMERICA

To

Leela, Maya and Nikhil

Yes, you can!

N and N

DEDICATION

This is my Guru Dakshina (repaying to my teachers)
who open heartedly taught me the Art and Science of Anesthesia.
Their Teachings helped me to realize that my work was
my worship and the reward was a successful epidural
and a smile on mother's face!

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Anesthesia Mishaps

Foreword

Dr.Gerard M. Bassell M.D.

Open Drops to Open Hearts is the heartwarming chronicle of Dr. Shreeniwas Jawalekar's professional odyssey from Wai, a small city in India, to the larger city of Charleston, West Virginia, where he spent 25 years providing obstetric anesthesia to the women of West Virginia's capital city before retiring from the active practice of his profession.

This book is more than that, however. It is the story of Jawalekar's journey, encompassing almost 50 years, to enlightenment and spirituality. Along the way, we meet his family, his gurus, his patients and his colleagues. We become intimately familiar with his daily life of service, his compassion, his absolute dedication to his patients, and his love for mankind.

We first meet Dr. Jawalekar as a young boy who experiences the wonder of anesthesia as a frightened patient. His next experience, again as a boy, was a prolonged, painful hospital stay during which he again felt the miracle of pain relief but, more importantly, he recognized the positive effects that result from the warmth and kindness of caregivers. These lessons helped lay the foundation of the personal and professional character of this man who has spent a lifetime caring for others.

Throughout the narrative, we meet the individuals who taught the young physician and then the older man. He was always wise enough to recognize the lesson even when the example wasn't necessarily intended to teach. It is easy to recognize the luminaries in Indian and American anesthesiology who influenced him; he pays them unstinting tribute. Read between the lines, however, and one can identify the lessons learned from patients, hospital staff, and others whose influence might be overlooked by less sensitive a man.

It might be difficult to understand how a physician can survive in this modern age without apparent regard for the trappings of his profession. Dr. Jawalekar has lived a life where the joy is in service, the reward is in a job well done and a happy mother and child, and he has been cradled in the certain knowledge that God will provide.

This book is the true measure of a unique man. I am proud and humbled to know Shreeniwas Jawalekar as a friend.

Gerard M. Bassell

Clinical Professor of Anesthesiology, University of Kansas School of Medicine, Wichita Kansas

Editor Emeritus of the Obstetric Anesthesia Digest

Past President of the Society for Obstetric Anesthesia and Perinatology

Student of Gertie Marx

Introduction

Journey of an Anesthesiologist: Open drops to open hearts!

This is a story of my journey from Wai, India to Westford, MA. This is not about the childhood I had, the hardship my mother and brothers had to go through, the poverty in India, the family structure and sacrifices of parents and all those difficulties. This is about my anesthesia experiences from childhood. This has nothing to do with the subject of Anesthesiology. There are no textbook references and formulas of Anesthetic agents. This is about my life as Anesthesiologist and my training, my teachers, my hospitals and colleagues. Modern day Anesthesia started with open drop ether and in the 21 century it is almost all through intravenous injection (TIVA). In a way, I have lived through the history of Anesthesia from open drops to open hearts! To err is human. In the last 20-25 years I worked as an OB. Anesthesiologist, day in and night in. That was the most enjoyable period in my life as Anesthesiologist. There is no greater pleasure than doing something to relieve pain and seeing it works. And when you work for years, long hours and sometimes 24 hour shifts, complications do occur. This is a big part of my story! I have included many events, the complications I have caused, participated in, witnessed and learnt from my colleagues. Some names are real and some are not. I was fortunate not to have any medico legal cases against me! That is unusual for an anesthesiologist and particularly OB. Anesthesiologist! I always used to say jokingly that my epidurals work better than my colleagues because I put something more in mine than they did in their epidurals! I did them with love and compassion. I think my patients noticed that and excused me when

occasionally something went wrong.

I have been an Anesthesiologist; the better description will be an Anesthesia student, from 1963. This has been a fascinating subject and journey for me and after 45 years I still have the same attraction, love and desire to learn and do more for this specialty. Many doctors after medical school try different specialties, change residency programs and at the end settle on one subject. I fell in love with this subject and never had desire to change. There are various reasons for this.

These reasons are changes in the monitoring systems, addition of new and improved drugs, new anesthesia equipment and techniques and my desire to learn more and more. I was also fortunate to meet the best teachers in anesthesiology. They not only taught me about the subject of Anesthesiology but lessons in life. I saw their love for the subject, compassion for the patients, consideration of colleagues, punctuality, hard work, caring and concern about their residents and junior staff. I tried to imitate that in my practice and that helped me to become a better person.

So I invite you to join this journey of a little boy from Wai, India who as a child, knew the pain of surgical incision, did not want to suffer himself and helped many to alleviate it. I am sure you will find his story very interesting.

The Journey

1

The Spray

The time was around 1947-48. I spent most of my childhood years in Wai, a small town in Maharashtra State in India. The town is situated on the banks of Krishna River, not far away from its origin from the mountains of Mahabaleshwar. So the river was a tiny stream during major part of the year except during the monsoon season. At that time I was about 12-13 years old and floods of Krishna River was a great attraction for the children. There were 7 Ghats on the banks of the river, all neatly built in stone and surrounded with temples. Ghats are steps made of stones. These steps separate the river water from the streets. Most of the cities in India settled on the river banks have Ghats. These steps make it easier for the residents to fetch the river water, add beauty and cleanliness to the river banks and keep the flood water away from the streets and houses. The flood water, red colored with the mountain soil, was an open invitation for children for swimming. I was no exception. I was living with my aunt Bagutai, away from my mother, and she had a hard time controlling my activities. We were not a rich family but there was enough to eat and I still remember the mango season. Overall play, eat and play again was the daily routine and I enjoyed it. In those days, soap was a luxury and we had to fetch water from a well for bath, cold hard water. Maybe because of all this, I used to get skin infection on my buttocks often. At that time there were no antibiotics and the only treatment for boils was to incise and drain.

This is how I met the doctor in that town, Dr. Marathe. I still remember my trips to his office. The dispensary was on first floor and I used to climb a small stairway with uneven steps and then on his examination table. In those days there were only two specialties, family doctor and surgeon. I did not know that there was a specialist in Anesthesia until I was in Medical school.

My first visit was quite scary. I was lying on that exam table. I could see the sterilizer and the water boiling in it. Dr. Marathe picked a scalpel from that boiling water with a forceps and approached me. I was almost ready to scream with the anticipation, however to my surprise I felt a cool spray on the skin, soon the cold became unbearable and I was still waiting for the knife to fall. I raised my head and to my surprise Doctor was already putting a small dressing! That spray had worked like magic and I did not feel the scalpel cutting my skin. I could see the water condensed on my skin, the white area. The whole procedure was not that pain free but I was thankful to the doctor for trying. That spray was my best friend in my childhood and I met it again when I started my anesthesia training--The Ethyl chloride spray!

Wai, India the city settled on the banks of Krishna River
Courtesy-Vinod Sahani (Sahani photography, Wai, India)

2

Pain Control

Again this is a story from my childhood, many years ago and I can mention only the years events happened. I believe the years are correct. In 1952 I was in ninth grade and I had severe arthritis in my right knee. Fortunately it was allergic reaction and the swelling subsided in few months but my knee was fixed in flexed position. My sister, Suman, was a nursing student at that time in Sassoon Hospital in Pune. With her help I was admitted in the hospital and I received the best possible care available in those days. The orthopedic surgeon, Dr. Motwani, fixed spring loaded splint behind my knee. Every other day he would visit me, unscrew the spring a few turns and straighten the leg a little. At times it was quite painful. This damaged my cruciate ligaments permanently, but I could walk again without a limp and later in life even did 15 mile runs!

As I have said in the introduction, this is a story about Anesthesia and me. However I may deviate a little from time to time. The people I met on the way have left lasting impressions on me and Anesthesiologist is not just drugs, agents and machines. It is the person behind all this and his/her nature. So if and when I will write about my teachers, friends and nurses that is because they made me the person I am, the anesthesiologist I was and thanks to them, I turned out to be a good one!

I was in that unit for about 2 months. My sister managed to get her rotation changed and worked on the same unit I was in. In her white

dress and white cap with red margins she looked and worked like an angel. I was seeing her in a different role. She was smart, very efficient in her work and well liked Sister! At that time and even now in India nurses are addressed as sisters and not by their first names. She and her fellow sisters used to help me with sponge bath, changing clothes and meals. I never felt awkward. That illness was the best thing that happened to me. I was introduced to this noble profession - Medicine! I realized this was a great way to help people and be with people.

That day Dr. Motwani opened the spring little too much for me. I was in severe pain. My sister talked with the resident doctor and gave me an injection. Soon the pain was gone. I must have slept for hours and was amazed what one injection can do. The drug was pethidine (Demerol, meperidine). But I was not interested in the drug. I was impressed with the person who gave that to me in time and correct amount.

After recovery I went back to Wai for schooling. I kept my thoughts of entering that noble profession to myself as my record as a student was, to say the least, dismal. During that last 1 1/2 year I studied day and night. At high school graduation I was second in the class and joined Fergusson College in Pune with a free scholarship! I wanted to be like my sister in medical profession and helping people relieving their pain.

3

Hippocratic Oath

I got admission to medical school! Year 1957. Everyone was surprised, my mother and brother pleasantly. First 2 years were the basic sciences courses and the only reference to anesthesia was during pharmacology classes and I did not give much attention to that.

You start feeling like a doctor when you start your clinical year, White coat and a stethoscope. There was one girl in our junior class, Savita Joshi who used to go everywhere with her stethoscope on the campus and off the campus. It was like an ornament to her. Very soon I realized there was a lot to do and learn, ENT, Ortho, surgery, medicine OB. Gyn. just to mention a few. The size of textbooks was overwhelming.

Early in the clinical rotation I had opportunity to see human suffering up close. Sassoon hospital had a T.B. ward (unit). I was in the room with other students watching a treatment. The other name for Tuberculosis is consumption and I realized why. The patient was sitting on the examination Table and I could see and count from the distance his each and every rib. I still remember the sad expression on the patient's face and the agony he was in, as the resident made a small incision in the lower chest and was putting a rubber tube to drain the empyema (collection of pus and blood). I suddenly felt weakness in my legs, the knees were buckling. I slowly managed to move away from the scene and the room. As I was walking away first time I experienced what vertigo is. Everything was spinning around me the room,

windows, the pathway, and the trees. Somehow I managed to sit under a tree. I did not return to clinic that day.

Dr. Mutalik was our medicine professor, well liked by all and respected. He introduced us to Hippocratic Oath. "First of all, do no harm." That day I thought it should read "First of all, make them comfortable."

4

Viewing Gallery– My Visit to O.R.

My whole batch was waiting for our surgical rotation and our visit to O.R (operating room). As in any other hospital, at Sassoon Hospital O.R. was in the best part of the building with cleanliness all around. The first day we were taken to the gallery. We all sat around the glass dome covering the operating room. The operating table was directly below us. Though the O.R. light was in the way, we could see most of the action. The surgeon Dr. Bodhe was performing gastric bypass, a common operation that time for peptic ulcer. There were two assistants and two nurses busy helping him. We could not hear but they were talking back and forth and engrossed in their work. Lot of instruments, sutures and blood stained sponges around. The green towels almost looked black when soaked with blood.

At the head of table there was another person sitting on a high chair. He had separated his area from the rest of the activity with a screen. There was an anesthesia machine and few tubes and bottles. I was impressed with the neatness on his side. My friend told me he was Dr. Utturkar. We were more interested in the main show, the operation! And our heads turned away from the head end. I had no idea at that time that in a couple of years Dr. Utturkar will be my anesthesia teacher and his example will leave lasting impressions on me the way I would work, think and behave.

The viewing O.R. gallery at Sassoon Hospital, Pune

5

Internship–My First Witnessed Cardiac Arrest

I finished the medical school course in 1962 and I had to finish one more requirement - the internship to receive the degree to practice medicine. Ours was the second batch of new rules and we were required to work in rural areas of Maharashtra State for one year before graduation. I was from Wai and so I was posted to work at Civil Hospital at Satara City. I enjoyed working there, first time with some responsibility and learned basic things like giving intravenous injections, cut downs (exposing the vein with a small skin incision and fixing a blunt needle in it for I.V. therapy). We did not have the plastic catheters and had to leave the metal needles in for I.V. access. Dr. Parange was the civil surgeon and he taught me many skills and operations like vasectomy and tubal ligation. I also learned to give spinal anesthesia and open drop technique for general anesthesia. I remember myself and my co-intern Dr. Jabade. Once we removed a big tumor from patient's back, probably a lipoma, under local anesthesia. We were bragging about it for many days.

Dr. Malshe, a local surgeon, used to do orthopedic work at the civil hospital. Once he was doing closed reduction of arm bones on 5-6 year old child. I was giving anesthesia. Dr. Malshe had taught me how to give chloroform drops on the face mask. Chloroform has a sweet smell, not irritant to the airway and gives good muscle relaxation. It was a great anesthetic for short procedures like close reductions. But

chloroform is very cardiotoxic and you have to be very careful. There is a small artery in front of the ear and while holding the mask you were supposed to feel that artery with one finger and drop chloroform drops with the other hand. Suddenly the pulse disappeared under my finger. I informed Dr. Malshe. He listened to the heart with stethoscope, delivered a good thump over the heart and listened again. That precordial thump had worked. He told me "You drop the chloroform and drip the ether!" I could feel the pulse under my finger again! From that day onwards I always taped a chest piece of stethoscope over the patient's heart and listened to the heart sounds with open drop chloroform technique.

Dr. Parange was an obstetrician and I used to enjoy assisting him during Cesarean sections. He used to give spinal anesthesia and then perform the operation. He taught us ABC's of resuscitation. Soon I started liking that specialty.

I still had to finish 3 months of internship in rural area and headed to Shirur, a small village where the primary health care center was located. I was not from a rich family. My brother, Dada, with his school teacher's salary supported me throughout my medical school. While working at that primary health care center I first time witnessed poverty in India. During those 3 months we visited real poor families and their homes. We sat on the floor in their homes and discussed what they ate, their nutrition. I was amazed to see the happiness and closeness I witnessed in those families. The experience at that village changed me. I became more mature, happier and confident about myself and ready to face challenges in life.

6

It's decision time!

I left Shirur and came to Pune in search of residency. I was interested in two subjects--Obstetrics and Anesthesia. I had good marks in Obstetrics in the final examination and Dr. Anjaniyelu was happy to select me for OB. residency. There were various reasons why I selected Anesthesia as my specialty. Around 1962 the practice of medicine was very different in India. If you want to practice surgery or OB. you have to have your own hospital (nursing home). It was not easy to get loans. With your own hospital to manage you are part surgeon and part administrator.

The practice of Anesthesia was very different. It was relatively easy to settle. You have to have a vehicle, a scooter or car, telephone, your anesthesia equipment and a portable Anesthesia machine and contacts. I took all this in consideration and decided to do Anesthesia. There was one more very important reason for choosing this specialty.

While doing internship in Shirur I met Shaama Adhyapak. We were in the same batch at Shirur and enjoyed each others company and became good friends. That time we communicated with letters, phone call was a rare event. Once I knew she wanted me to take anesthesiology there was nothing more to think. Now it was her decision. I had just to do it and do it right. Later in life I did combine my both loves and became Obstetric Anesthesiologist!

OPEN DROPS TO OPEN HEARTS!

We do not have crystal balls in life. You have to be in right place at right time and meet right people. July 1963-64 is a very important time in my life. I was with Dr. Utturkar my first teacher in Anesthesiology. I was with him only for a year but the lessons he gave me by personal example changed me forever. I still remember the time I spent with him, admire him, love him and miss him. I have said before being Anesthesiologist is not just about your skills and how well you do the procedures, etc. It is also about your character, compassion and consideration for others. Dr. Utturkar was all that and he nurtured these qualities in his students.

7

Dr. Krishnaji Gangadhar Utturkar–Anesthesiologist

1912--2006

I was very happy about my decision of doing Anesthesia and was exited to learn from Dr. Utturkar. Dr. Utturkar was born in 1912 and after service in army, settled in Pune. He was well known for his skills with open drop technique.

At that time the technique was used routinely. Here are some details. The patient was given injection of Atropine, a drying agent. The anesthesiologist will put a metal mask covered with loosely woven cloth on the patient's face and the patient was instructed to breathe through it. The anesthesiologist will start the induction of anesthesia with Ethyl chloride spray (my friend from Dr. Marathe's office from Wai!) and at appropriate time, switch to Ether. And this switch was the tricky part. This kind of induction of Anesthesia has 3 distinct stages. Stage 2 is the stage of excitement because of release of lower centers from the higher control. Almost invariably, you will have to physically restrain the patient. When Dr. Utturkar gave open drop anesthesia, this second stage was almost nonexistent. That was the art of Anesthesia and he had mastered it very well.

I remembered my first anesthesia procedure with him. He instructed me to do spinal. I did it well but the spinal went too high. He told me "You did not give pillow to the patient!" I never forgot to do that after that incidence. He wanted everything neat and clean. No clutter on the Anesthesia cart table. I still remember the order in which we were supposed to set the table -- Syringe filled and labeled with atropine, Laryngoscope, 2 airways then 2 endotracheal tubes, 2 metal connections, tape and ethyl chloride and ether bottles. The O.R.s was well lit but you would never know if he was watching you through the glass doors. He was an expert in blind nasal intubations and I learned and mastered that technique working with him.

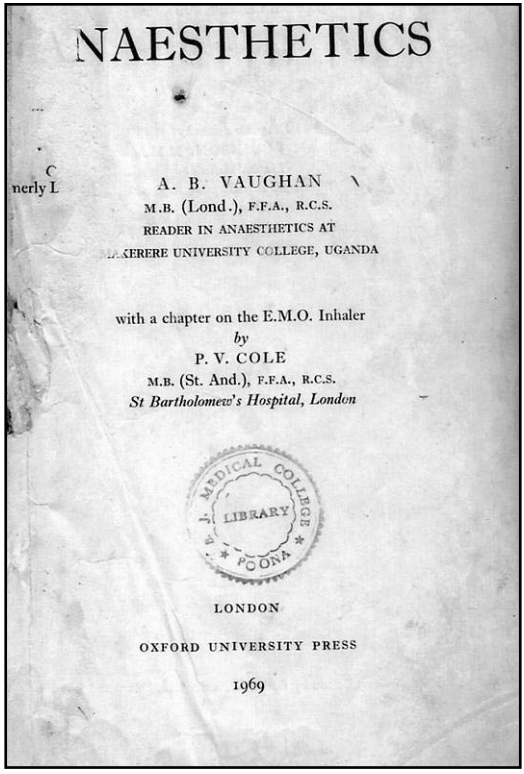
He was an expert with regional anesthesia as well. I have seen him giving intercostal block for chlolecystectomies. Dr. Bodhe had a patient with toxic thyroid goiter. It was difficult to control her hyperthyroid state and they had to operate on her. Dr. Utturkar gave her chloral hydrate and cervical epidural with dilute lidocaine injection. I still remember that loss of resistance. He told me never to try that technique of cervical epidural anesthesia!

He was very particular about monitoring the patient. For regional, pillow under the head and neck was a must, blood pressure with manometer, nasal oxygen and an I.V. access. We did not have plastic catheters and had to fix metal needles in veins! Sensory level was checked often with an alcohol swab.

Chest piece of the stethoscope taped on the chest was a must for general anesthesia. Other monitoring techniques were eye signs, pupillary size, capillary filling in the nail beds, feeling fontanel in babies and finger on pulse. You were always supposed to observe the color of blood on incision. Blood pressure was taken with mercury manometer. Many of us, after connecting the intubated patient to ether bottle, used to tape a loose piece of cotton on the exhalation port and watch that cotton move with respiration. And he used to monitor us from outside that glass door!

My Anesthesia Textbook

In 1963 Anesthesia was a very small subspecialty. There were just a few books on that subject in the college library. All these books were from England for obvious reason, 150 years of British rule! On my last visit to India I did go to Sassoon Hospital library and found one old book. The book was ANAESTHETICS by A.B. Vaughan Oxford University Press 1969 reprint! Here are some pages from that book. This will give some idea about the Anesthesia textbooks at that time!



NAESTHETICS

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A. B. VAUGHAN
M.B. (Lond.), F.F.A., R.C.S.
READER IN ANAESTHETICS AT
MAKERERE UNIVERSITY COLLEGE, UGANDA

with a chapter on the E.M.O. Inhaler
by
P. V. COLE
M.B. (St. And.), F.F.A., R.C.S.
St Bartholomew's Hospital, London

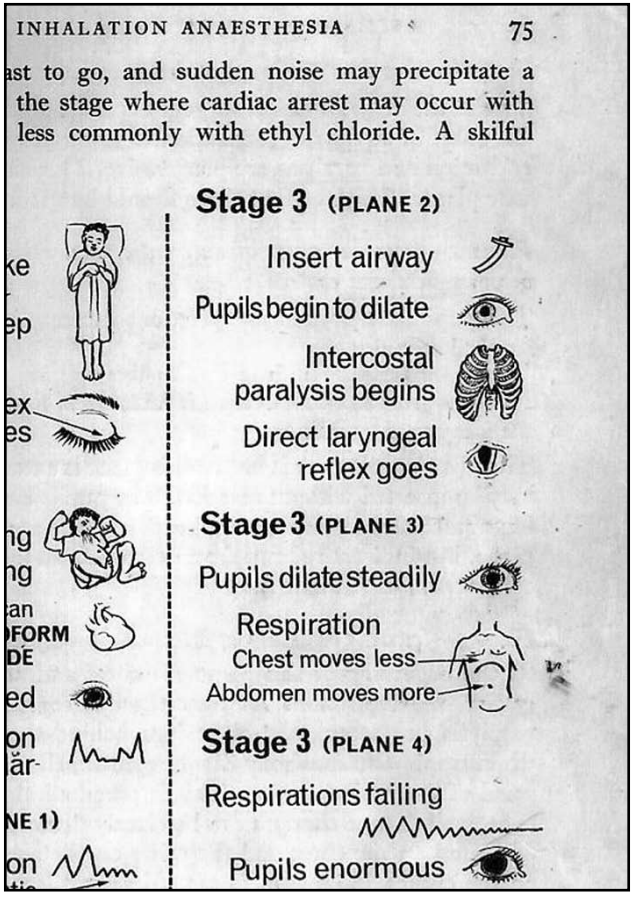
LONDON
OXFORD UNIVERSITY PRESS
1969

Title page: Anesthetics by Vaughan, A B (1969)
by permission of Oxford University Press

I had my own textbook in the O.R. Dr. Utturkar! Almost every day before leaving the O.R. for the day he would say "What did you learn today?"

Vigilance!

Around 1963 the anesthetic agents were mainly inhalational. Premedication was only I.M. Atropine and monitoring was finger on the pulse. You have to be always alert and watchful and attentive. Vigilance! I did not know at that time Vigilance was American society of Anesthesiologists' motto. There was no EKG or pulse oximetry. Finger on pulse and eyes on the surgical field watching the color of blood, was the continuous monitoring.


INHALATION ANAESTHESIA 75

ast to go, and sudden noise may precipitate a the stage where cardiac arrest may occur with less commonly with ethyl chloride. A skilful

Stage 3 (PLANE 2)

Insert airway

Pupils begin to dilate

Intercostal paralysis begins

Direct laryngeal reflex goes

Stage 3 (PLANE 3)

Pupils dilate steadily

Respiration

Chest moves less

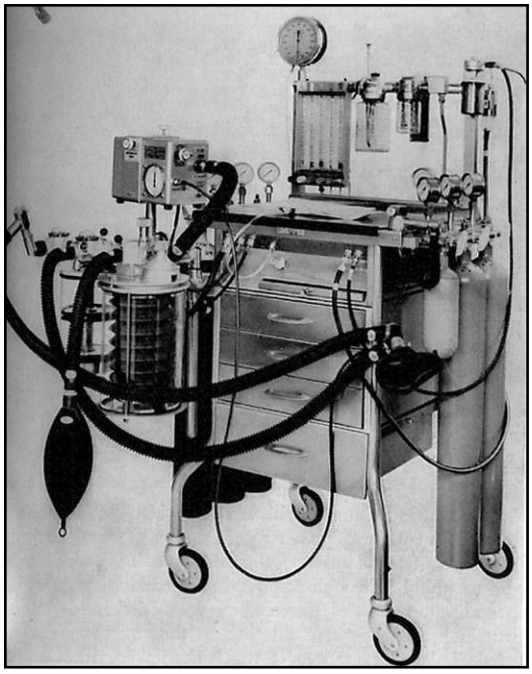
Abdomen moves more

Stage 3 (PLANE 4)

Respirations failing

Pupils enormous

Clinical signs of stages of anesthesia with open drop technique. From "Anesthetics" by Vaughan A B, (1969) by permission of Oxford University Press



The Boyle`s Anesthesia machine
From "Anesthetics" by Vaughan, A B (1969)
by permission of Oxford University Press.

During that first year residency I learned basic techniques in anesthesia and gained confidence to move ahead. Dr. Utturkar was a recognized teacher with College of Physicians and Surgeons, Bombay (now Mumbai). I had to do one more year of clinical work before appearing for examination. Dr. Utturkar suggested that I should go to Bombay and learn new and different techniques. Poona (Pune) University did not offer postgraduate course in Anesthesiology so I decided to go to Mumbai!

But before that little more about Dr. Utturkar--- The person!

8

Dr. Utturkar–The person

Army service 1941-1946

Dr. Utturkar taught me Anesthesia and more and it is this more part that made me remember and respect him all these years. He was a busy man. He was employed by the hospital and after office hours he used to practice Anesthesia in the city. The first thing I noticed about him was his punctuality. He was never late for work. Many times I had seen him in O.R. in his white pant and short sleeve O.R. shirt, cap and mask ready to work before we arrived. He used to talk with the patient before anesthesia and was always available to help.

I had completed about 6 months training. My mother suddenly became ill with meningitis. We admitted her to Sassoon Hospital. She was in coma for 2-3 weeks. Dr. H.V. Sardesai (then and now famous physician from Pune) and Dr. Leela Talathi took very good care of her, their efforts were successful and she recovered. I was by my mother's bedside throughout, starting I.V.s, giving blood transfusions, taking blood pressures. I had forgotten about O.R. After mother was discharged from the hospital I showed up for work.

I had written a note for Dr. Utturkar explaining my absence from the work and had requested to grant me that month's leave without pay. I gave him the note. He read it, looked at me and said:

"I know where you were. You showed up every day! You were in the hospital. I am happy your mother is O.K. and keep that note with you. You need that money." How can you forget such a person and such a deed? My brother told me, he had come to see my Mami in the hospital once. He did not have to do that. I was an ordinary first year resident.

During that residency I read a book on thoracic anesthesia. I made notes on the topic and showed those to Dr. Utturkar. He liked that. "Are you interested in one lung anesthesia? Every Wednesday I go to Aundh T.B. hospital, you are welcome to join me." And then every Wednesday 7: 30 in the morning for few months, he waited outside my house to pick me up and we went to Aundh Hospital!

Dr. Subhash Patki was giving anesthesia one day. The baby had cleft palate and intubation was difficult. Dr. Utturkar was called for help, he did the laryngoscopy, showed Subhash how it can be done, then removed the tube. Dr. Utturkar told the surgeon "Let us postpone the operation. We will do it next week." The operation was done next week. Subhash did the intubation with Dr. Utturkar standing by. At that time Surgeon was the captain of the ship and still is but Dr. Utturkar was the friend! All postgraduate students and O.R. nurses asked and took his advice. He was an authority in O.R. If he cancelled the case, the surgeons agreed. No questions asked.

I was fortunate to meet such a person and I am thankful for the memories. After many years, I met another great person in New York, Dr. Gertie F. Marx.

9

Mumbai—on my own!

Going to Mumbai on my own was a big change for me. I was away from home and in a new city and surroundings. The evening lectures in Anesthesiology were held at K.E.M. hospital. The Mahatma Gandhi Memorial hospital (MGM) was Very near K.E.M., so I took a job there. MGM was home away from home for me, as many doctors from Pune were working there.

Though there was an In Charge Senior Anesthetist, Dr. Mrs. Samant, her role was as an administrator. We were on our own. I was responsible for my work, patient selection, anesthesia planning and recovery of patient. Compared to Pune, there was more equipment and more Anesthesia machines. Now rarely I was doing open drop technique. New anesthetic agent, Halothane, was available. Training with Dr. Utturkar had given me confidence and I was enjoying the work.

Soon I learned importance of teamwork; need to help each other in O.R. Even when I had no cases in my room that was not my free time. In that time I used to help others during induction, give them breaks for tea / lunch, bring them equipment they need or they have forgotten. And always help in emergencies, it is give and take! You never know when you will need their help. One more important thing, do not feel awkward to say I don't know. This is particularly important in Anesthesia and anesthetic drug doses. All this I learned at MGM and practiced throughout my career. I needed to learn and master this code

of O.R. conduct early in my professional life. As you will see I really went places far away and not heard of in my professional career. I soon started enjoying giving anesthesia with Boyle's machines, doing cases with open and closed circuits and pediatric cases with Ayre's T piece. I still remember the Rubin's one way valve. It was a very attractive piece of plastic! At that time the concept of recovery room was not there. At the end of surgery we had to wait till the patient was awake and able to take care of his/ her airway before moving patient from the O.R. table. If you wink at the patient the patient should wink back at you! I soon learned to give a small dose of I.V. morphine at the end of surgery and wash out the inhalational anesthetic so patients can be awake as soon as surgery was over. This had one added advantage, the turnover was quicker and surgeons and O.R. nurses wanted me in the room. That made me feel better about myself. I did mention the evening anesthesia classes at KEM hospital. There were many anesthetists in Mumbai in private practice. They all in turn, used to give these lectures free of charge and that was a big attraction for anesthesia students. I still remember some names: Drs. Nawathe, Amberdekar, Bhojraj, Choksi, and Jogalekar. Many of them had done Anesthesia fellowship from England, F.F.A.R.C.S. At that time I did not know the real meaning of all these letters. I was very naive. I wanted to add many letters after my name! In one of these lectures I met Dr. Shashi Patwardhan! He was a resident at other big teaching hospital, The J.J.Group in Mumbai and I decided to go there!

As I have said in the introduction, this is all about my anesthesia experiences and events. I will try to be true to my words for the most part of it. There will be some deviations from this goal. That will happen when I will not be able to move ahead without mentioning some memories.

I had developed a good work ethic being with Dr. Utturkar. I still remember my teacher from grade school, Dada Patwardhan. He always used to tell us: "Boys, if you sleep today you will have to work very hard tomorrow! If you work hard today, you can sleep comfortably

tomorrow." I have believed in him throughout my life and I am still waiting for tomorrow! Another thing, I did not want to disappoint my mother, Mami and brother, Dada. Any good news about me used to put a big smile on her face. I wanted to see that smile. I was addicted to that. This work ethic has kept me away from my near and dear ones many times. I was never able to balance the two sides and I almost hate myself for that. Though I was working in Mumbai my mind was in Pune. All the ladies I love were there, Mami, my two sisters in laws, Prabha and Shaila and Shaama. After the illness, Mami was bed ridden, though mentally very alert. Prabha, Shaila were with her and Shaama used to visit often. Practically every weekend I used to travel to Pune to see them. My D.A. examination was over and I traveled to Pune for that last visit.

10

Last visit and last request

My D.A. examination was over and I traveled to Pune. I arrived home around 8am. Mami was happy to see me. I told her that I have passed the examination. She looked into my eyes with little frown on her forehead and said. "Did you read it in Sakal?" Vahinis and I, we all laughed. She always believed that if you pass an examination your name will be printed in Sakal, the local news paper! I said yes. There was that smile on her face. She always gave me that smile when I did well.

That afternoon she requested me. "Give me something. I want to sleep. It is enough." She had never asked me for that. While in Pune one medical representative had given me some medicine sample-may be Ornade? Some sedative tablets. They were still in the house. I gave her one. That was not enough, she asked one more and I gave it. That was enough for her to drift off into sleep. Vahinis were busy so I picked a book from Dada's collection and went to Fergusson college botanical garden, very near our house. After the night train journey and book in hand I slept under that tree as I had done many times before.

I returned home after couple of hours. Prabhavahini told me "Mami is still sleeping." I realized what was happening. Mami's head was on the pillow, tilted to one side and breathing little obstructed. I did not disturb her. In the evening Shaama came for her visit. In few hours it was all over. The smile was no more.

OPEN DROPS TO OPEN HEARTS!

Next day Sadananda came from Badodara. Two days after the religious rites, we both left for Mumbai, he left me near the hospital and walked away. I watched him disappear in the crowd and turned and started climbing the steps of the hospital. I had to do more to keep that smile on Mami's face.

11

Dehradoon Express– For more letters!

Dr. Shashi Patwardhan gave me idea to do D.A. (Bombay University) and for that I joined J.J. Group of Hospitals. Here I got training in Neuroanesthesia. We used deliberate hypotension, hyperventilation and other techniques to reduce the tension in the brain so Dura (the covering over the brain) would relax and surgeon could operate. This, at times was very difficult and scary in sitting position. We also had to rotate in other hospitals.

I was working in Cama Hospital near Victoria Terminus (now Chatrapati Shivaji Terminus). For preoperative preparation we used to do Hb. and Urine exam. Chest X-ray, ECG and other investigations were done only if clinically indicated. I remember seeing one patient for pre-op, on surgeon's request, once in this hospital. She was for abdominal hysterectomy next day. Apart from her obesity and diabetes she was O.K. for surgery. Her ECG and blood work was fine. I explained the anesthesia procedure. We decided on Spinal anesthesia. Next day morning she did not come to O.R. She had expired during the night. I always remembered this incidence while in practice.

Shashi Patwardhan and I were roommates at St. George's hospital. Near O.R. there was Blood bank for the city. The staff there always called us for venipuncture and we were eager to help also. They used to pay us one rupee per venipuncture and that was good money for the resident doctors at that time. Dr. Jogalekar was our favorite Anesthesiologist.

He always came to O.R. with plenty of Batataa Vadaas (Potato balls). In this hospital I got to use agent cyclopropane for anesthesia. It is a sweet smelling, very potent anesthetic, so induction was smooth and quick. It is explosive though. In May 1966 I passed my D.A. (Bom) examination. I was thinking of going back to Pune and starting my anesthesia practice.

In my life I have been at right place at right time and with right people. This time also was no exception. Shashi had graduated from All India Institute of Medical Sciences, New Delhi. He knew my interest in further studies in Anesthesia and told me that there was M.D. course in Anesthesiology at Institute. I applied for registrar's post and was invited for interview. This all happened in a very short time. The train journey from Mumbai to Delhi took 36 hours and I was on Delhi station around 8 am on the day of interview. I went to Ansari Nagar on Fut Fut (motorcycle) Rickshaw and was in Director's office in time for 9:30 appointment. At that time Dr. G. C.Tandon was professor of Anesthesia. I remember couple of questions from interview. How you will massage the heart with open chest cardiac resuscitation? "With the palms of the hands, do not use finger tips." Why you want to come so far away from home?" I want to learn more!" They looked at each other and had a good laugh. I did not tell them the real reason. I was thinking when I will finish the M.D. course, how many letters I can put after my name! **Shreeniwas Jawalekar, M.D. (AIIMS); D.A. (BOM); D.A. (C.P.S.)**

12

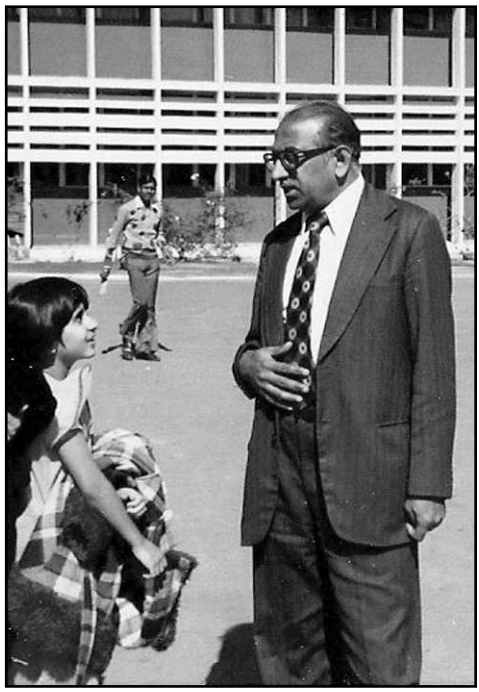
All India Institute of Medical Sciences

On July 1, 1966, I joined AIIMS as a registrar in Anesthesiology and as a postgraduate student for the M.D. course. Events happened so fast that I did not realize the importance of all this till that day. This was a once in a lifetime opportunity given to me.

India got her Independence in 1947. The first Prime Minister of India, Jawaharlal Nehru with the help of his Health Minister Amrit Kaur, created this temple of teaching and learning medical sciences. The government of New Zealand gave a huge grant and the Institute was built in Ansari Nagar, an upscale locality in South Delhi. Currently AIIMS is ranked as one of the top 10 Medical colleges in the world.

The Institute had a huge campus. At that time the O.R. was still in small barracks and I had no problem in adjusting to new environment. In few weeks I was moved from minor surgery O.R. to main rooms. My previous 3 years experience was paying off. I still remember Drs. Rao, P. N. Tandon, and Gopinath. They were all great surgeons and teachers in their respective fields. Dr. Gopinath was a senior cardiac surgeon but in the O.R., he behaved and worked just like another senior resident. Many times he spent nights by the patient's side along with us till the patient was stable. During those hours he taught me arterial puncture, importance of blood gases and how to interpret the result and ventilator care. And I was not even his student! He once told me that he has not seen anyone dying from hard work but has seen pa-

tients dying because of hardly working doctors!! He knew my wife (Shaama) was doing M.D. Physiology in the same Institute and often asked about her progress. When we visited the Institute in 1978, he walked with us and showed us the changes on the campus and the newly built amphitheater.


With Prof. Gopinath at Institute (1978)

I still remember the case of difficult intubation there. I was still new at Institute. They were trying to intubate (inserting a breathing tube in the windpipe) a patient with thyroid goiter. I saw the difficulty and their struggle and asked if I can try. Reluctantly they gave me permission. I removed the pillow from under the patient's head, extended the neck a little. I passed a smaller size well lubricated tube through the right nostril. Concentrating on the patient's breathing and visualizing the movement of skin over the trachea I was able to intubate easily. They all were surprised and more surprised when I told then the reason, why I was so good at it. I told them; In Pune we had one laryngoscope between two rooms and senior resident used to have it. You were supposed to try this blind way first and use laryngoscope only in difficulty! Soon difficult intubation cases became my specialty! I was comfortably settled on the clinical side.

Outside the O.R. it was a different story. Prof. G. C. Tandon, affectionately called Col. Tandon had set up this department from scratch and had done a wonderful job. I was in Institute during 1966-69 period. In future I did residency in Anesthesiology at Albert Einstein College

of Medicine in Bronx, N.Y. and can say without any reservation that the teaching program at Institute was far superior. (Sorry, Dr. Orkin.) When I joined the institute, I had to start learning from languages, English and Panjabi. I could not continue conversation in English for more than few sentences. I did not know Hindi either. I soon learned the sweetness of Panjabi. Prof. Tandon used to greet us with word, Hanji! That word always conveyed the meaning "Yes! I am here for you and what can I do for you?" That word always put a smile on my face.

He had done a lot for the department. Apart from clinical work I was supposed to attend evening seminars and once a week conduct a seminar on a given subject. For that, I used to spend a lot of time in the library.

Shaama was doing M.D. Physiology and library was our meeting place away from home. During those 3 years I was also required to do research work and submit a thesis on it. That was a requirement for graduation. My subject was Effect of Hypothermia on survival rate in hemorrhagic shock in Mongrel dogs. I did this study on 20 dogs. I spent many nights in animal laboratory of the Institute. I worked in the pain clinic and learned many nerve blocks. I remember one patient from pain clinic. He had trigeminal neuralgia and he was in severe pain. I gave him alcohol injection to destroy the nerve. The patient came back, few days after that, with a big ulcer in his mouth. I had deposited alcohol in wrong place. Prof. Tandon made me write a detailed report. That was my first complication there. I thought I was in trouble. After checking my report he helped me to publish it. He was very good in designing clinical trials and getting the work completed and all that in a friendly way.

The final examination was also very different and tough. You had to select a case for anesthesia, do preoperative evaluation, premedication and actual anesthesia on the patient. I selected a case with a lung cyst and did one lung anesthesia. The time spent with Dr. Utturkar paid off.

At the end, in front of the entire faculty I had to deliver an extempore talk on a given subject-topic given to me was - Methods of measuring blood volume. I did a good job. Shaama was in Physiology and we had studied many things together.

At All India Institute of Medical Sciences, New Delhi, 1978

I still have a few memories from that examination. I was demonstrating how to do stellate ganglion block. The subject was my senior lecturer Dr. Punnoose. I was pressing on the side of his windpipe to locate the ganglion. Afterwards he told me I almost choked him to death. Dr. Badola was my external examiner. I was describing the nerves. Dr. Badola said "He is changing names of the nerve as people change names of the streets!" My Professor commented: "At least he is on correct path [nerve]." That was typical of Col. Tandon. I met Dr. Badola years later in New York. I passed the M.D. examination at first attempt. Shaama also completed the M.D. Physiology course and it was time to move forward.

1911----2006
Professor Col. G. C. Tandon,
All India Institute of Medical Sciences, New Delhi

13

Back to Maharashtra– Miraj Medical College

My story about me and Anesthesia continues. At that time in 1969, my Sister Suman was at Miraj. Her husband, Appasaheb was professor of Pathology in Miraj Medical College. Shaama and I, we both were invited to join the staff as lecturers in that college and with no other plans in front of us, we did. Compared to Delhi Miraj was a small town, sometimes called the worst place to live in my state. We had a great accommodation though. Not far away from the hospital was an old palace of Maharaja of Miraj. This was government property now and we lived there! However I was not that lucky about the work place. The hospital was run by a mission. Dr. Fletcher was the medical director and a very hard working doctor. He had promised me, another anesthetist, Dr. Elizabeth Thomas was joining but she never came.

In O.R. there were 4 operating rooms. I was responsible for all rooms while working alone in my own room! Many times I had to leave my patient with non anesthesia personnel and run to other rooms to help. This did not go well with my medical ethics and I decided to leave the job. I submitted the resignation and had no plan ahead.

One day we received a letter from Dr. Shukla. He was Principal at another medical school in Solapur, Shaama's home town. He had visited Miraj as an external examiner and had come for afternoon tea to our house. I still remember the letter clearly and I still have it. Here are some excerpts from his letter--*"Solapur is a unique place as regards medical*

practice is concerned. There are lots of opportunities for an Anesthetist to get ample private practice, since what I observe is that specialists in Anesthesiology are not many, though persons practicing surgery and its specialties are fairly large. In my opinion, persons having qualifications like yours, have essentially the right place in a teaching institution. --." There was nothing to argue about, Shaama was excited to go near her mother and grandmother. I was getting the dream job like Dr. Utturkar had. That day I realized the importance of our qualifications from AIIMS, Delhi. Here at Solapur, though a small place, I could put to work the skills and knowledge I acquired at Institute.

In Solapur I learned how to give anesthesia in private practice and importance of good relations at work. Also I had the worst complication in anesthesia. Overall the stay and work in Solapur enriched my life experience and made me a better anesthesiologist and a person.

14

Solapur– Power of Positive Thinking

Socially and for family life Solapur was a good move for us. Because of Shaama's family, everyone knew us. I also had many friends from my medical school practicing in that town. Postgraduate degree in anesthesia was a rare qualification at that time and they were eager to see me work and gave good support to establish in private practice.

I still remember my first day at work. I went to work early around 8 am. The nurse there told me that it is too early and I should come back around 9! I just waited there. I did not have to change the street attire or change or cover my shoes to enter O.R. Slowly doctors came. They sat there in one room just adjacent to O.R., some with their cigarettes well lit. Soon the whole room was filled with that smoke and their laughter and noise. Nervously I sat there wondering what's next. I remembered the cleanliness at Institute, the desire in all to do more and learn more and Dr. Gopinath. I wanted to leave the room and go somewhere away from that smoke and noise.

And suddenly I saw a great opportunity in all this. I said to myself I can change all this for better. I had seen the best and this is my state, my city. I will improve this. I turned to my friends from medical college and had cool, No! No reception.

Here are few facts about the medical practice in India at that time. I

think it is still the same with minor improvements. Working in the civil hospital is for recognition in society and free advertisement. It is also for diverting patients for operation and treatment to your own place called nursing home. There was no desire or willingness in these doctors to improve the conditions in civil hospital. I was not going to get any help from them. My best bet was the administration. I had no idea that day, whom to approach. It became obvious that I should start with patient care first. There were 3 O.R.s Two rooms for general surgery and one for E.N.T. Next day I again arrived at 8am. The nurse looked at me with disbelief and went her way.

Fortunately we had caps and masks. I covered my head and went in. The first thing I noticed was a lot of dust collection on anesthesia carts and machines. I started cleaning. I had 2-3 medical officers (residents) with me. They all helped. I liked one person and his interest. He was Dr. Mama Thorat. He often reminded me of myself at younger age. Later when I left, he became Chief Anesthetist there. I realized cleanliness and dust both have a similarity, both have tendency to spread. The operating rooms were looking cleaner and cleaner. Soon everyone gave attention to that and I was encouraged and wanted to do more. At that time everything in anesthesia was reused. I watched the cleaning process. It was not very good. I showed the attendants and nurse's aids how to wash face masks and connections and rubber endotracheal tubes with soap and water, also the laryngoscopes and metal airways. I did not just show them the cleaning process but continued doing the cleaning myself with them. I showed them how the so called cleaned endotracheal tubes had dried up secretions in the lumen and spinal needles were filled with dried blood from the previous patients!

So we got small brushes for the tubes and cleaned the needles with stylets. This one thing had a positive impact on the patient care. My surgical colleagues noticed there were fewer and fewer respiratory infections after general anesthesia. I did not forget to thank the O.R. staff and at last there was a little smile on my face. Encouraged with

all this I decided to take next step. I was there for about 6 months and the civil surgeon (Dr. Kayarkar) had heard my name and the interest I was showing in improving the O.R. He listened to my suggestions and approved the budget. The work according to my suggestions was completed over the weekend.

That Monday morning I was excited to be there. As I entered the area, there was a White Line.

There was a rack for slippers and a sign requesting to remove shoes. To go in the O.R. you had to cover yourself with a gown. The walls were painted and that itself had made the place less dusty. They even had repaired the broken glass on the window facing the street.

There were no exceptions for this attire. Dr Kirpekar was a senior surgeon. He always walked tall and looked straight ahead and used to miss the white line. I reminded him politely and he followed that reluctantly. This white line immediately made a difference. There was no unnecessary traffic. There was no smoke and loud noise. I was surprised to see the response from the medical staff. They had realized that my intentions were good. My friends from the Med. school did take some of these ideas to their nursing homes (hospitals). This gave me my job satisfaction and I also earned some respect in the hospital.

By now I had worked in many places and seen what works and what does not. Punctuality, quick turnover between the cases, helping each other and thinking and rethinking before canceling cases works in any hospital. Later Dr. Kirpekar used to call me to do cases in his private clinic!

In that civil hospital O.R. we still did not have a room to recover the patients. We had to send the patients straight to the ward (unit) from the O.R. and it was not that safe. There was an area just outside the O.R. to build the room but no money in the hospital budget. One

day civil surgeon called me and said "Lucky fellow! You will get those rooms. One patient has donated the money." Soon we had preoperative and recovery rooms!

I still remember the case we treated at that civil hospital. He was a local general practitioner. He developed ascending myelitis, something like Guillain Barre Syndrome and was having respiratory difficulty. There was no ICU or respirator around. The nearest facility was about 60-70 miles away. I brought the Starling ventilator from Physiology lab. of medical college. We intubated the patient; however, the ventilator will not deliver enough volume. Dr. Thorat and I decided to take him to Pune. It took for us about 5 hours to reach Pune by ambulance. All this time we did hand ventilation with AMBU bag (Air Mechanical Breathing Unit) and kept him alive. He was on ventilator in Sassoon hospital for 21 days and survived. I still remember as we were leaving the ICU, he opened his eyes and expressed his gratitude. The look in his eyes said it all. That day I opened my account of good deeds.

I had easier time with my private practice. I knew the doctors in private practice, as many of them were from my medical school and were working at the civil hospital. They had their own nursing homes (hospitals) and they used to do bread and butter surgical cases there. All major surgery was done at the civil hospital. I used to do my private cases early in the morning and again in the afternoon hours. From 1965 to 1969 I was in Mumbai and then at Institute and did cases mainly using Anesthesia machine. I had to revisit open drop technique again and soon I relearned the art. I will go in detail about this art of anesthesia but before that let me tell you about the worst anesthesia complication I had.

15

Solapur–The accident

That was a day like any other day for me in Solapur. I had finished the work at civil hospital and went to Upase Hospital. Dr. Harkut, an ENT surgeon, was going to do esophagoscopy on one adult patient. Upase hospital was a small, nice hospital in the outskirts of the city with 1 O.R. equipped with anesthesia machine and trained O.R. staff.

The patient was a 40-45 year old lady with some stomach problems. I had done this procedure with Dr. Harcut many times before. There was one more new face in O.R. He was going to show a new light source to Dr. Harcut. The procedure was started under general anesthesia. I induced the sleep with Pentothal, gave her a short acting muscle relaxant and passed the endotracheal tube. Anesthesia was maintained with oxygen, nitrous oxide and ether.

Dr. Harcut put the scope in, the lights in the room were dimmed and Dr. Harcut turned the switch of the esophagoscope on. I was standing near the patient's right shoulder. I saw a small blue ring traveling rapidly from patent's side to ether bottle. This happened in a fraction of a second. I remember seeing a big bright blue glow in the ether bottle. Soon it took the shape of that bottle. Next moment there was a big explosion. My next memory was that I was in a room just outside the O.R. with every one except the patient. Hurriedly I went in. We saw the patient on the floor. I felt for the pulse. There was none.

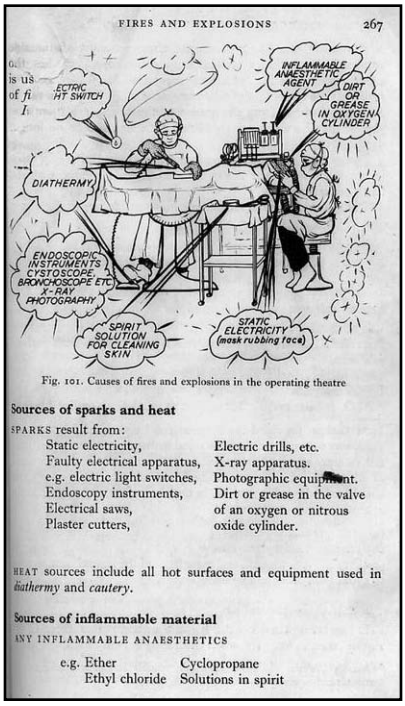
Ether is an inflammable anesthetic. We always used battery (DC Source) operated scopes when ether was in use. I had no idea that day the medical representative and Dr. Harcut were going to connect the light source to the wall outlet, an AC current. With fright and flight reaction we all left the room. When I reentered to the room, the whole room was filled with small glass pieces and had an appearance as if it was bombed. Next few weeks were the worst time in my life. I lost 10 pounds in that time. I had some burns on my right hand and few glass cuts on my right elbow and wrist. Next day I did go to Upase hospital and in Dr. Upase's office visited the patient's family and gave some monetary help. The O.R. was locked for investigation for weeks. The civil surgeon Dr. Kayarkar, Professor of surgery Dr. Shrivastav and Solapur DSP (Deputy Superintendent of police) were on the committee. After a few weeks, the civil surgeon called me to his office. I explained to him the incidence and my explanation. That was a kind of deposition and fact finding mission and that was the last I heard about that accident.

There are some other memories about this accident. I have conveniently blocked these but Shaama remembers some vividly. I did start working from the next day. My friends kept me busy and occupied. But the story at the night was very different. I used to wake up with nightmares, drenched in sweat. When all this happened I was glad that I was in Solapur with family and friends. They all knew me. In those few weeks I realized the importance of friends, moral support and timely help. I always remembered that incidence and later in life, helped others in their difficult times.

Here is some history of Ether Anesthesia. Dr. Crawford Williamson Long first used ether for surgical anesthesia on March 30, 1842. He had used ether for surgical operations since 1841. He learned about ether during ether "frolics" while in Medical School at the University of Pennsylvania. However, Dr. Long did not publish his results until 1848. Dr. W.T.G. Morton gave first public demonstration of ether anesthesia on October 16, 1846, at Massachusetts

General Hospital, Boston and that was a great success. Thus Dr. Morton was credited for the first use of ether for surgical anesthesia.

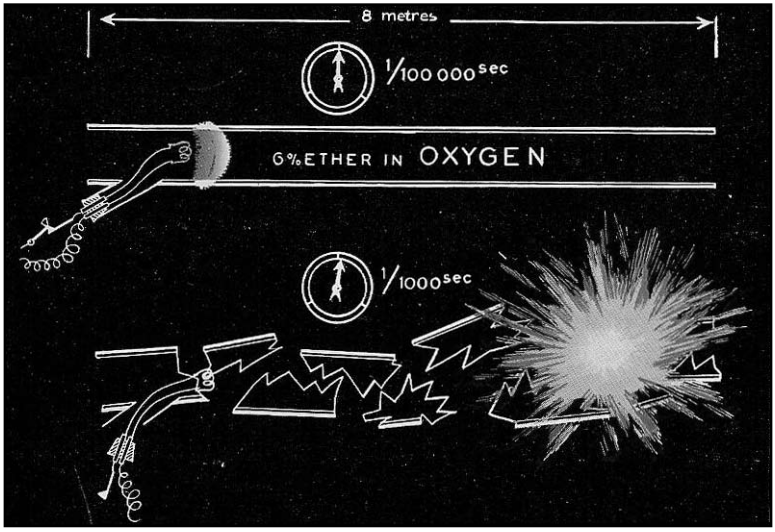
Ether is still used in some developing countries because of its "safety" and low price. It is largely replaced by newer nonflammable anesthetic agents.



Causes of fires and explosions in the operating theatre: From "Anesthetics" by Vaughan, A B, 1969. By permission of Oxford University Press

This figure is from that old textbook (Vaughan, 1969). As you can see it is virtually impossible to remove all sources of sparks and heat. Over the years scientists took another approach and replaced inflammable anesthetics like ether and cyclopropane with safer ones. It is interesting to see one of the sources of inflammable material is 'spirit', a solution for cleaning skin! This source still exists in modern Operating Rooms and I will describe one incidence of fire related to this in the section on Anesthesia Mishaps (Page 179).

In the winter of 2008 I visited Sassoon Hospital, Pune in search of old Anesthesia books. There I found the book I had read while preparing for my Diploma in Anesthesia in 1964-65. The book was – Physics for the Anesthetist including a section on explosions. The book is written by R. Macintosh, W. Mushin and H.G. Epstein Third Edition, 1963. Here is the figure 355 from page 347.



Deflagrations and Detonations: From Physics for the Anesthetist by Macintosh R, Mushin w and Epstein H
By permission of Blackwell Scientific Publications

In my case there were many similarities with this figure. The detonable mixture was ether and oxygen. The whole incidence happened in a fraction of seconds. The source of ignition was spark from switching on A/C current or the hot endoscopic bulb. The blue light (in the original colored figure) we see in the figure, I saw that traveling from the patient end of the corrugated tubing to the anesthesia machine and into the ether bottle. Though the lights in the room were dimmed for endoscopy the intensity of the blue light must have been very strong for me to visualize it through the black corrugated tubing. The ether bottle disintegrated as the tube in this experiment with a loud explosion.

16

Solapur–The Art of Anesthesia Practice

Let us forget about this accident and move forward as I did that time. I had learned anesthesia techniques in major hospitals, however I had to modify the ways and make the techniques suitable for the anesthesia practice in Solapur.

In last 15 years or so we have developed out patient surgery in America to reduce the cost and now everywhere we see day surgery clinics in our cities. This is the way medicine was practiced in India in 1970. Every surgeon or surgical specialist had his own hospital (called nursing home) and anesthesiologist moved from hospital to hospital doing his cases. The surgeon made sure that the Operating Room was well equipped with suction apparatus, I.V. fluids and needles, oxygen cylinders, anesthetic and other essential drugs (atropine, ephedrine, morphine to name a few) and at some places anesthesia machine. The anesthesiologist had to carry his own remaining equipment.

Even if you are not from medical field you will like this part of the story. It is inevitable not to use technical words but I will keep their use minimal. The story will tell you how we adapt to circumstances and manage to do work with the resources we have.

Those from medical field, particularly anesthesia, will be marveled to learn the ways we monitored the patients and the depth of anesthesia

and how we used the available equipment to give best possible care to our patients.

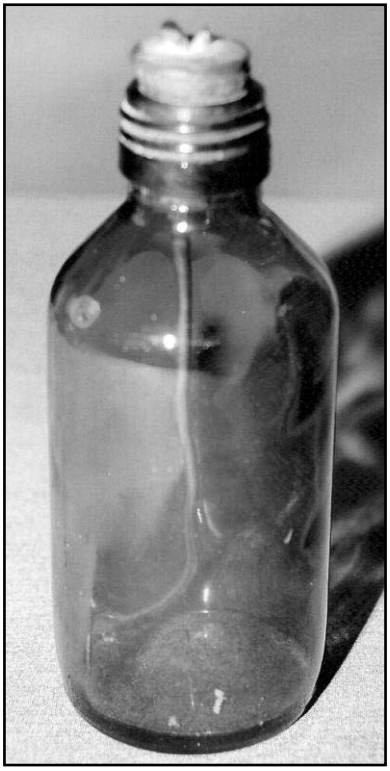
First I had to have a home phone for surgeons to contact me. You had to be available for emergencies otherwise they would not call you for routine cases. I called the phone inspector. He said you will get the connection after 3 months. However if I pay extra 300 rupees I will get it tomorrow. I did not want to wait. You guessed it right I paid the fee. I had my scooter from Delhi and that was a great vehicle for moving around the town. With help of my friends in Solapur and Mumbai I also equipped myself with the anesthesia equipment and I was ready to become a traveling Anesthesiologist. I used to fix my equipment box on the scooter carrier and go to different hospitals.

I still remember how I prepared my box and what all I had in there. There was equipment necessary for adult and pediatric cases. I had different sizes of masks, airways, tubes and connections. The endotracheal tubes were of red rubber and quite soft. The airways had a metal tube in to deliver oxygen. The connection was used to connect the endotracheal tube to ether bottle through a corrugated black rubber tube. The corrugations on the tube prevented its kinking (something like a slinky). The ether bottle was round or square in shape with a metal cap which can be unscrewed. The cap of the bottle had an opening to pour ether in and at the other end to fix the corrugated tubing. There was a metal clamp to attach the bottle to I.V. stand. This will be a good place to describe how we used the ether bottle.

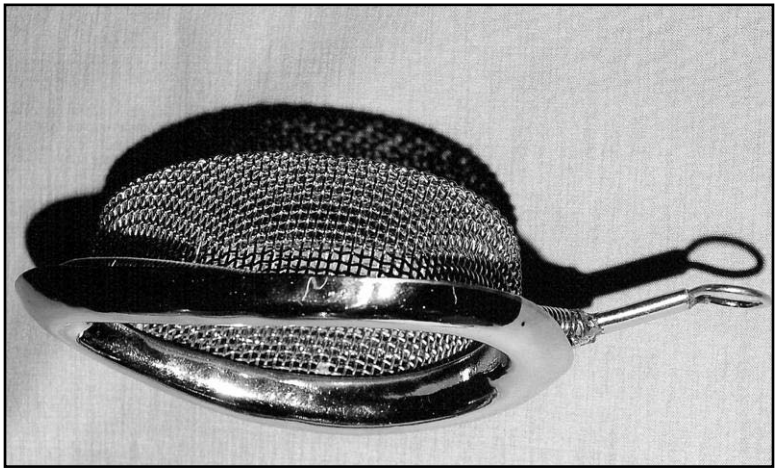
I used to induce anesthesia with ethyl chloride spray on the face mask.

Patient was instructed to breathe normally. Ethyl chloride was replaced with ether after stage of excitation. Ether was dripped on the mask till patient was in deeper stage and when the jaw was relaxed I used to put the tube into the windpipe (endotracheal intubation). I used to select a smaller size tube (cuffed if possible). The cuff, when inflated, used to protect the lungs from aspiration. The tube was fixed to side of nose or mouth. Now using the connection and the corrugated tubing the patient was connected to ether bottle. The spontaneously breathing patient would draw the air and with that the ether vapor from the bottle and used to stay anesthetized. As ether evaporates the liquid gets cold and you will see water condensation and frost on the outside of the bottle. The vapor pressure gets less and patient gets in lighter planes. Sometimes I used to immerse the ether bottle half way in a water container. That would provide necessary heat for evaporation, only room temperature water please! When you have to fill more ether in, you had to disconnect the patient from the bottle otherwise the ether will spray all over. We all had learnt a trick. We used to tape a small piece of cotton on the air inlet opening in the lid of that Ether bottle. The cotton will move with inspiration and expiration and that was one of our ways to monitor the patient's breathing!

In winter of 2008 I visited Solapur in search of this old equipment I used to work with. Many years had passed and I was not sure about the outcome. After lot of enquiries I was told to see Dr. Jayawant Raut at Dr. Mule Hospital. I knew Dr. Raut from my old days at Solapur. He was from my medical college, about 4-5 years senior to me. After completing his surgery training he had settled in Solapur, the city near his home village. I was very happy to see him and we talked about our old college days and our teachers. He had lot of memories and stories to tell. Dr. Raut and his O.R. attendant Trimbak have preserved the old anesthesia equipment and I was delighted to see it. Here are the pictures of that priceless equipment.



The Ether Bottle

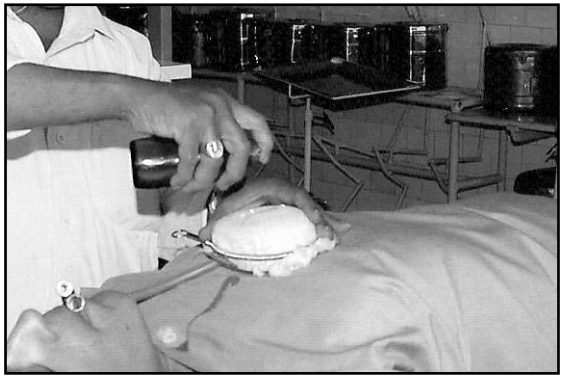


Face mask. There were different sizes for children and adults

Ether can, Ether bottle and Metal airway

I had a good trick for small babies for facial operations like cleft lip and cleft palate. It was not possible to connect them to ether bottle as the dead space will be too much (the dead space is the space in the connection and corrugated tubing--the space which will not take part in the active ventilation and that is harmful to the patient). I would fix the endotracheal tube to the chin. Connect a small tube to endotracheal tube with curved connection. The other end of the tube would be placed on a towel arranged on patient's chest. I would place a face mask on the end of the tube and drop ether on it. Sometimes you could flow a small amount of oxygen under the mask. The surgeon used to have clear area to work and I was sure of patient's airway.

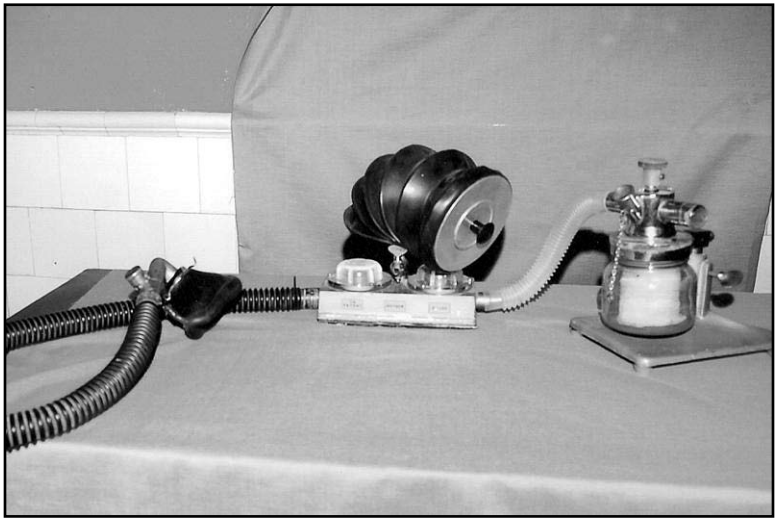
OPEN DROPS TO OPEN HEARTS!



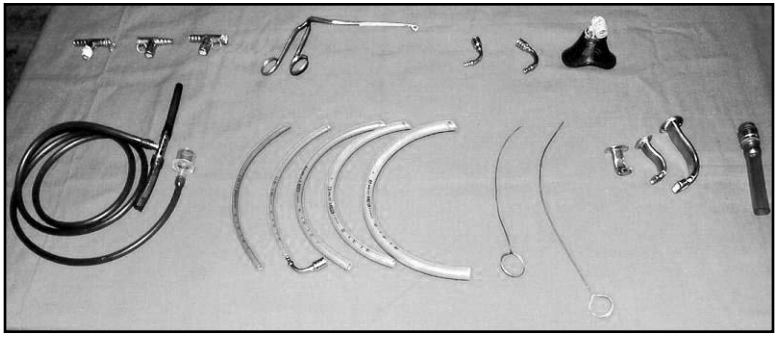
I do not have a picture from my old days Anesthesia practice, however this picture will help you to imagine the trick I used for those small babies.

Here are some more pictures from Dr. Jayawant Raut's collection.

Back row: Bellows, Ether vaporizer made in Mumbai (Bombay), Ether bottle, Ether can and Laryngoscope Front row: Chloroform dropper? Face mask and corrugated tubing



Air Ether mixture is drawn into the bellows and delivered to the patient via corrugated tubing and face mask. The unidirectional valves at the base of the bellows prevent back flow of the mixture.



Back row: Connections, Forceps, connections, Face Mask.
Front row: T piece, red rubber tubes, stylets, metal Airways and connection for Machine

Equipment for children: Metal face Mask, breathing bag and corrugated tubing

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The Art of Anesthesia Practice– Part 2

All nursing homes did not have Boyle's anesthesia machine so I always used to carry with me Oxford bellows and EMO vaporizer. (Epstein, Macintosh Vaporizer, Oxford, England.) The equipment was manufactured in Mumbai and was cheaper than the original product. All this was in 1970 and over the years I have lost my textbooks and the equipment; however I still have very clear picture in my memory about the working of the apparatus. With this machine I could artificially ventilate the patient if needed. This will be the only technical part in the story and even if you are not in the field of anesthesia it will be interesting to read. I have included a few pictures of the equipment and they are self explanatory.

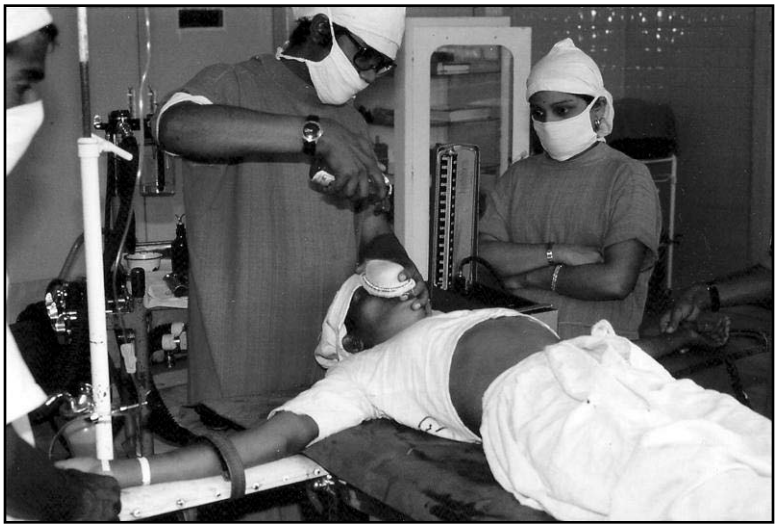
The vaporizer bellows and a nonrebreathing valve are connected in series and then to the patient's endotracheal tube. As you pull the bellows up, that will draw the mixture of air, oxygen and ether vapor in the bellows. When you push the bellows down this mixture will be delivered to the patient. Any back flow is prevented by unidirectional valves. The nonrebreathing valve as its name suggests avoids any rebreathing and the dead space of the system is minimal. With the help of bellows I used to give small doses of muscle relaxants to the patients to help the surgeons close the abdomen and make their job easier. Dr. Rajmane had just returned from America. He was impressed with the excellent anesthesia conditions this equipment provided. In his hospital, first

time I remember seeing the intracaths. For I.V. we had to use metal needle, fix them well with a splint to the arm and pray they work for the duration of operation.

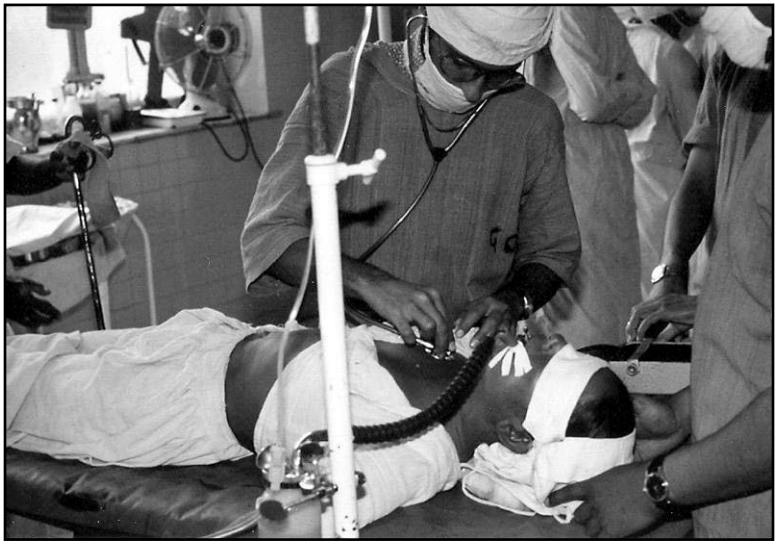
The last part of this technical story is about monitoring. Compared to modern day monitoring of anesthetized patient, at that time we were in dark ages. The best monitor was a finger on the pulse. We used to measure the blood pressure with Mercury manometer and that was the only monitor needed. With practice, we used to get better in feeling the pulse and guessing the blood pressure. The educated hand on the breathing bag would detect secretions in the airway or obstruction. Often, for depth of anesthesia, eye signs and pupillary signs were used. For circulation, capillary filling of nail beds and general appearance of patient was useful. You always watched the color of blood on incision and during the whole procedure. The surgeons were very good at recognizing the problem and were a great help. I had seen the precordial stethoscope (chest piece of stethoscope taped to chest wall over the heart and listening to heart sounds with a small rubber tube and an earpiece) used in Institute and always used it in my practice, particularly with children.

The strength and quality of heart beat gave us idea about the blood volume. Skin turgor, fullness of fontanel, color of urine and fullness of veins helped in judging the dehydration. A watchful alert anesthesiologist with finger on the pulse was the best monitor.

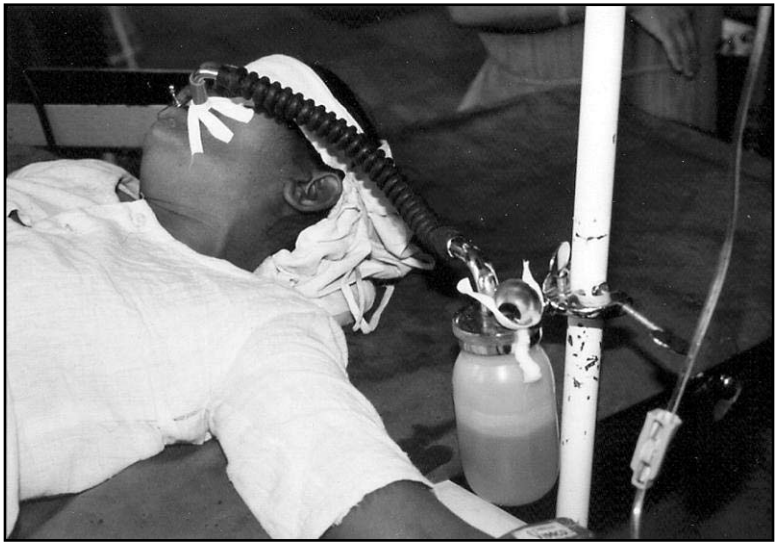
I have a few pictures of Ethyl Chloride Ether induction from those days. The pictures were taken in 1973, the Anesthesiologist was Dr. Mama Thorat and the place was Solapur Civil Hospital O.R.



Induction of General Anesthesia with Ethyl Chloride.



The patient is intubated. Dr. Mama Thorat is checking for equal air entry!



This picture shows the metal airway, red endotracheal tube, black corrugated tubing connecting the patient to Ether bottle. The small piece of cotton on the open end of the bottle moves with respiration.

Bombay (Mumbai) made Ether vaporizer and Anesthetic bellows

Some definitions

Anesthetist: *Surgeon's definition: A person at the head end of the table who is half asleep while his/her patient is half awake!*

Ether screen: *A screen separating the surgical and anesthesia fields also called the blood brain barrier. The surgeon is the bloody part. The brain belongs to Anesthetist!*

Source: Prof. Louis R. Orkin

18

American Dream

While I was busy working at Solapur civil hospital and establishing in private practice Shaama was enjoying her Reader's post at the medical college in the city. We had realized the importance of the qualifications we had from All India Institute of Medical Sciences, Delhi. Dr. Shukla, the Principal at the medical school, gave her all the support and even in that small school Shaama did have opportunity and resources to do some lab work. She did work to find "Effect of Ketamine on pregnant murine uterine muscle." It was a nice little study with transducers and organ bath, etc. Her article was accepted for publication in one American journal, Anesthesia and Analgesia. I still have a reprint of it. (K.S.Jawalekar et.al. Effect of Ketamine on Isolated Murine Myomertial Activity. Anesthesia-Analgesia-Current Researches. 51, 5: 685-688, 1972). This is the only reference from any journal you will see in my story. We were quite proud about it at that time. The best part of it was they printed her picture with the article!

Here I will like to clear one thing. I worked in many places and I liked most of the hospitals I worked in. I never understand when people complain the town is too small, there is nothing to do here, this is a hillbilly country, and the winter is too harsh and so on and so on. For me if my family had a decent place to live and I had enough to do in the hospital I was happy with that place. Somehow, anesthesia and its progress was enough to fascinate and keep me absorbed and excited about the future.

OPEN DROPS TO OPEN HEARTS!

Having a house, a good job and car is not only an American dream. Even in 1970s every educated person in India used to dream about it. Our first car was a 1957 Fiat, green colored and that still is the best car I had. I did learn driving on that car, however driving that car on the streets of Solapur was a different story. I am not talking about the crowd and the cows crossing the roads. I always just felt awkward sitting in the car and seeing many people walking in street, some even bare footed. I always preferred my scooter. The car was for Shaama and kids and they had a chauffeur.

One day, Shaama, I and kids had gone to Siddheshwar Temple in the city. It is an old temple in Solapur built on a lake. We must have been there for about an hour or so. It was time to go home and I decided to walk instead of going by car. Though it was a long walk, I used to enjoy it. While alone I suddenly realized "This is it. I am now settled. I am 33 years old. I am going to do this for the rest of my life and nothing wrong in that! Everyone is supposed to and is doing the same around me but can we do something more and different?" That night I told Shaama what I was thinking. She looked at me in disbelief and got busy with the children.

I had forgotten about that incidence and I was busy with my anesthesia work. One day we received a letter from Vice Chancellor University of Nigeria, Nsuka. Shaama had seen an advertisement for a job in British Journal of Medicine and had applied for lecturer in Physiology post at that medical School. It so happened that the Vice Chancellor knew about the Institute and was impressed with Shaama's C.V. In her letter, Shaama had written that I was an Anesthesiologist and she will think of taking a job if they had some opportunity for me also. Luckily for us, they had a job for Anesthesiologist in their teaching hospital and soon we were on our way to Nigeria. Why Nigeria? At that time the ECFMG examination was stopped in India. We planned to give the exam in Nigeria before visiting the Statue of Liberty and continuing our pursuit of happiness. Also, I had my curiosity to know modern

developments in anesthesia and learn a few.

In January 1972 we were in Nigeria! The university had provided us with nice accommodation on its campus at Enugu. The campus was on a hill and the area was quite clean. For Shaama, the medical school was on campus and I had to drive just about 5 miles to the hospital. They had their local language but everyone spoke pigeon English and that suited me very well as my English was not very superior either! Practically every evening it rained and that added to greenery and cleanliness.

I had gone to Nigeria on visitor's visa and I had my interview for job there. I still remember one question they asked. At institute, I had reported a case of blindness after anesthesia. The vice Chancellor asked me how we confirmed the blindness. I said we just referred the patient to Ophthalmologist. He was happy to hear that answer. Vice Chancellor's specialty was Ophthalmology!

Apart from me there were two Nigerian anesthesiologists. Dr. Aziashi was trained at Belfast, Northern Ireland and I have forgotten the name of the other one, probably because he did not work that often. The department had few nurse anesthetists. This was the first time I worked with nurse anesthetists I was impressed with their skills. Dr. Fabian Udekwu was professor of surgery. Every Thursday he used to work from 7am to 7pm and used to do a variety of cases. That was the only busy day in the week. Other days I used to go to work around 9am and by 2pm I was home. After hours nurse anesthetists used to manage the call work and we were rarely called to hospital. However, when the surgeons learned that I will come in if called; I used to go for emergencies often. My son Raju had inguinal hernia. He was about 6 at that time. Dr. Udekwu did the operation and I gave the anesthesia. I still remember Raju's remark when he had the dressing change. He said "Daddy why did you not give me that stuff this time too?"

Every Thursday I had my lunch in O.R., the food made in hospital kitchen. I am a vegetarian and I still remember their two specialties, Okra (ladies fingers) soup and Moi Moi (beans wrapped in leaves and baked).

I still remember the difficult intubation case I did with Dr. Udekwu. This was a female patient with huge thyroid goiter. It is difficult to pass breathing tube in wind pipe in these patients. Dr. Udekwu wanted me to wait for Dr. Aziashi. However I intubated the patient with local anesthesia and some sedation in the holding area before Dr. Aziashi arrived. Dr. Udekwu was impressed. I went to see the patient next day. Sadly she had respiratory obstruction during night and she expired. I felt very guilty. I should have stayed in hospital that night. I remembered Dr. Gopinath and his words. "Hard work has not killed anyone; it is when you hardly work---". Till today I blame myself for her death. When I was in Nigeria one open heart surgeon, Dr. Yacoub from England came to that hospital and did first open heart surgery there. I gave anesthesia for that case. We measured the blood pressure by connecting the arterial line directly to mercury manometer! Years later I learned one of my classmates Dr. Ashok Kanetkar was working with Dr. Yacoub in London. What a small world! Dr. Yacoub did go to Pune, India and helped Dr. Kanetkar to start open heart program in our teaching hospital.

It was time for me to come to America. Professor Udekwu had a friend in Chicago, Dr. Allen Winnie. He wrote a letter for me to Professor Winnie and all my references. Around Jan 1975 I received a letter from Dr. Orkin. He was professor at Albert Einstein College of Medicine in New York City.

He had offered me residency position from July 1976. And I decided to accept and planned to leave Nigeria around 15 of June 1975. Yes, about 1 year earlier! In all that excitement I had not seen Dr. Orkin's letter carefully and assumed that the job started from July 75. Anyway

I decided to leave as planned and resigned my job at University of Nigeria. One Nigerian ENT surgeon (Dr. Okafor?) did not want me to leave and said he would request the President of Nigeria to close the borders!!

I had heard about the lawsuits against doctors and big medico legal verdicts. I had no clear ideas about it. I was very naive. I thought the patients will sue you even when you miss a venipuncture. Talk about over confidence! I said I would not miss one. I always thought I was good at every thing I did. I had to learn a lot more!! Fortunately my experience in America as far as medico legal problems was all positive and I realized your behavior and good intentions are still rewarded.

Nigeria was my first experience away from home, India and I soon realized that though we have different religions and skin colors we all have families, brothers and sisters, positives and negatives and we all appreciate good deeds. Shaama's grandmother always used to say "You are nice, that is not because of your clothes or how you look, it is because your work is nice." I always remembered that.

The university did not have a teacher for Physiology and Shaama decided to stay back for 6 months. I left Nigeria around June 1, little early as I was going to America in search of a job. We had earned some money in Nigeria and I was ready to support myself for some time. The first night I stayed in a motel on Eastchester Road in North Bronx as the Albert Einstein hospital was very near from it. Early morning I was on the bus stop and waiting for that public transportation. Soon a bus arrived, few children got in and I also followed. The driver looked at me, puzzled. I then realized that was a school bus! That moment I realized how much I have to learn! I reached Dr. Orkin's office on time. He was professor of Anesthesiology and chairman of that department for many years. There was a board on the wall with names of the faculty members. I was reading through the list. Names like Andrews, Suh, Oka, Hershey, and Marx. Hershey? I knew I had read that name

before. Where? As I was pondering on that thought Dr. Orkin walked in. I told him I wanted to see him as I was in the town and to thank him for giving me a job from July 76. He had my file with him. He asked me if I was the best cardiac anesthesiologist in the world. I knew he was reading Prof. Ukedwu's reference letter. I said I do not know but I will like to be one. I could not believe a person from Wai, India was sitting in front of this professor of Anesthesiology in New York City and continuing conversation in English! My real shock came with his next sentence. "Are you available to join this July that is a month from now? Just few days back city has approved one more resident slot for us and I am going to advertise for that." I could not believe my ears. I said, "Yes I am." Next 4-5 hours I was in his office and filled necessary papers and roamed all over the campus.

The complex had 3 hospitals in walking distance. The Jacobi hospital, this was a city hospital and mainly the place for general surgery and Obstetrics and Gynecology. The other hospitals were Van Etten for ENT and the college hospital where private practice cases were done. The program also had neuro and cardiac surgery. I thanked Dr. Orkin, his secretary Mary and left the place around 4pm with appointment letter in hand. I took one extra copy. I wanted to mail that to Shaama next day. I have told you before; I have been at right place at right time many times in my life. That day was one more example in the long list I have. While sitting in the motel room I suddenly realized where I have seen the name Hershey before. I was in Institute and when I did my work on "Shock" I had read many articles by Dr. Hershey S.G. on that topic and we all knew his work and admired Dr. Hershey and his papers. Later I wrote about Dr. Hershey to Dr. Punnoose, one of my senior residents at the Institute. I could not believe I was going to work in the same department where Dr. Hershey was working!

I told you about the school bus incident. Next day I learned one more lesson. I had to send a letter to Shaama and I went to a nearby store to get some stationary. I picked up some envelops, letter pad and came to

the motel. Then I realized that I had not paid for the stuff. Hurriedly I went back to the store and paid the money to the cashier. I learned that day; always to take a receipt and the things you buy should be in the plastic bag when you leave the store. The shopping was very different here than in India! Now I had a whole month free so I went to Dr. Rajmane who lived near Chicago in Kankakee, Illinois. I had some more lessons with Rajmane and Apte families about shopping and cooking in America. On July 1, I was back in New York and started my residency.

19

Residency in New York

Professor Louis R. Orkin

When I joined Dr. Orkin's program I had already completed 6 years of residency in India. Dr. Orkin was aware of that. He wrote a letter to American board of Anesthesiology requesting it to recognize this experience. The board did not agree. I started my first year residency again. That was tougher on Dr. Orkin than on me. Working in Anesthesia is very different from other specialties. You do your cases and you get the satisfaction of doing it. My instructors were with clinical experience of a few years, far less than mine and learned a few new things watching me work. The senior staff (Drs. Hershey, Marx, and Orkin to name a few) was very happy to cover my room. I also had a lot to learn. One thing that kept my interest in Anesthesiology was the addition of new techniques and monitoring ways all along those residency years and even during my private practice period. You are a student throughout your life was very true with me and the subject of Anesthesiologist.

In 1975 the residency program of Anesthesiology was a meeting of all

nations. There were residents with me from Australia (Bassell), Pakistan (Khan), China (Chee), Korea (Kim), Ethiopia (Makuria), Venezuela (Jakymec), Chile (Arancibia) and India (Patel) and so on. Yes, there were residents from America but very few (Singlevich). All these residents were at least 10-15 years junior to me and I had to gather enough courage and strength to keep up with them. After many years I did ask Dr. Orkin why he selected so many foreign residents in his program. He said "They have few problems and they give few problems". Most of them had some previous training in medicine and were interested in studies and finishing the residency, so they could start earning again. I was no exception to that rule. These all were FMGs (Foreign Medical Graduates). Once I told them we have to prove that we are really FMGs (Fine Medical Graduates)!

I was very busy in my first two years of residency. Typically I used to do 24 hours call. From 7am to 7am. Then work without a break up to 5pm. I used to come home just for sleep and go next day for 24 hours call again. This we did for all two years of the residency! Naturally I do not remember any other events outside the hospital life. We had rented a house not very far away from the Jacobi hospital (1407 Mace Avenue). The landlord Uncle Fajela was a retired cab driver. He was a great help for the family. He first introduced us to the game of Pool and canollis.

Because of the working hours and work load we junior residents were always sleep deprived. Years later the residents did force the city and hospital management to change the rules and this grueling work schedule.

I still remember a case of cardiac arrest in 6 year old boy. It was around 1am. Dr. Lim a second year resident was giving general Anesthesia to a patient with strangulated hernia. The patient did have on admission DPT injection (Demerol, Phenergan and Thorazine) for pain. The patient had another dose of Demerol and Phenergan as premedication

before anesthesia. Dr. Lim did not recognize slowing of respirations in time. This resulted in less oxygenation and accumulation of CO2 and cardiac arrest. Fortunately for us such events were very rare. In these two years Shaama did her residency at Columbia Presbyterian hospital and took care of the children and house. I do not know how she did all that. We had some help from our babysitter Mary.

Last 6 months of this 2 year residency was little easy. I was appointed as chief resident. The main advantage of this was no night calls. The responsibility was little more. I was supposed to manage the anesthesia scheduling for the O.R., make the call schedule and be responsible for overall smooth functioning of the place. This experience taught me how to talk with surgeons, not to promise too much and provide what you promise. I was chief resident of Anesthesia and I made sure all the residents had their lunch breaks and someway ended up working harder than doing my own cases.

Documentation and maintaining a good anesthesia record was a big part of this training. You document everything you do. You monitor meticulously and if it is not documented on paper, it is considered as if it was not done. You did not do it. Some times I thought we went too far on this. I was working with Dr. Martin once. Dr. Martin had worked in private practice and after retiring from that job, took a position at Jacobi hospital. That day he had given an ankle block to this patient for amputation of the gangrenous toe. The block was not working well and we gave the patient some sedation and few mgs of morphine. Neither the block nor the sedation worked fully on the patient. He complained of chest pain. His B.P. was unstable and in short, we had to do a lot of things to stabilize him. All this time Dr. Martin was more concerned about documenting what we were doing than the action itself. I never liked this part of anesthesia. They called it defensive medicine. I called it defective medicine. It is not what you write but what you do, that helps the patient. You can always write a short note on the patient's chart when the critical part is over. And that

is what I did in my clinical practice. Those two years helped me to get ready to work in America.

Like Col. Tandon at Institute, Dr. Orkin had organized a good teaching program for the residents. Every evening from 4-5pm there was a lecture by medical staff on some subject in Anesthesiology. I always tried to attend those lectures. That is the only study I did. I do not remember going to library or studying books at home in my free time. I had no free time. But these didactic classes and vast knowledge I had gathered at Institute was enough for me to get through the in-training examinations. One day I received a letter from American board of Anesthesiology that I have passed my part one (the written part) of board examination. I was surprised. I did not remember when I wrote it!

We had to do a few months OB. Anesthesia during second year of residency. Here I met Dr. Marx, the OB. Anesthesia attending. She, like Dr. Utturkar from Pune, influenced my anesthesia practice forever. Dr. Marx was a senior anesthesiologist at Albert Einstein program and apart from being an expert in her subject and clinical work she was a friend of residents. I will write more about her in the next story. At Einstein two things impressed me the most, The Swan Ganz catheter for monitoring heart function and technique of epidural anesthesia for relief of labor pains. So, for the third year training or specialty year I selected OB. and cardiovascular anesthesia. I spent 6 months in open heart room and for OB. worked in the college lab testing drug effects on the uterine muscle. Not every study or laboratory work results in a published paper and my work was no exception to this rule. I had received a grant for this study from Foundation of Anesthesia Education and Research (FAER). In that letter Dr. Orkin had written that my career had an academic bend. I still remember that. My fellowship year was coming to end. Shaama had yet to finish one more year of residency in Radiation Oncology. I was looking for a job around New York. I still remembered that day. We were in our weekly grand rounds. At the end of the meeting Dr. Orkin handed me my appoint-

ment letter. I was given an instructor's job and responsibility of in charge of OB. Anesthesia in the college hospital. I stayed in New York for 2 more years.

The work in college hospital used to start with breakfast conference. Dr. Suh, the in charge floor attending, used to conduct the morning teaching program. We all used to present our cases, discuss how we were going to manage the anesthetic that day and the problems involved.

During this time I did finish my Anesthesiology boards. Dr. Kumar, one of the other instructors in Anesthesiology was also appearing for the oral boards. We studied together. We had prepared well and both of us passed at the first attempt. I remember some questions from the examination. The senior examiner asked me how to calculate available oxygen in the body. I wrote the whole equation in front of him and explained each component. He asked me the name of breath holding test and I knew it but could not remember at that time. The other examiner asked me how the drug hydralazine works. I said I do not know. After few questions he asked me the same question again. The senior examiner looked at him reminding him not to waste my time. The examination was over I took few steps to door and turned back and said "Yes, I do remember the name of the test it is Sa Brazes." In few weeks I got the result. I had added 3 more letters after my name. **Shreeniwas Jawalekar M.D**. (**AIIMS), D.A. (BOM), D.A. (CPS), A.B.A.**

I enjoyed working in the OB. unit. At that time OB. Anesthesia was not a very popular sub specialty with anesthesiologists. The work was given usually to most junior member of the team. As the epidural anesthesia became popular with patients and obstetricians in late 1970s the demand for good and full time coverage on the OB. floor increased. I liked OB. Anesthesia as this is the only subspecialty in Anesthesia apart from pain clinic where patient is awake and remembers you after the procedure. You see the result of your work then and there. The

OPEN DROPS TO OPEN HEARTS!

OB. work tests not only your clinical skills but your bedside manners, your ability to manage emergencies and the end result is most of the time, good and happy. A boy or girl is born! I and Dr. Bassell, we both kept our interest in OB. Anesthesia and practiced it as our chosen subspecialty.

I still remember, Dr. Violetta Smith. She was not very good with regional techniques and she hated to work on OB. floor but we all had to do it during our on call hours. She would always find some excuse for not doing epidural and then OB. nurses had learned not to call her for work unless it was absolutely essential. I always remember Dr. Yajnik from Institute with this story. He used to say "If you do not want to work hard, prove yourself useless." How true!

As an instructor in Anesthesia one of my duties was to teach residents the technique of regional anesthesia, spinals and epidurals. Epidurals were getting popular and everyone wanted to learn the technique. It is a little harder to teach these techniques than general anesthesia. The patients were awake and invariably, husband and some other relatives were in the room. At that time I made a block of hardened silicone and I used to show the residents the feel of loss of resistance and other necessary steps before their first experience with the patients. This had made things little easy for all of us. Soon I was promoted as Assistant professor. Years later after retirement I developed the CSE model to teach these techniques to Anesthesia students.

This was 1981. Now I was 42, our children were growing up and we started looking for a place where we can move and settle so we can have some place to call our own and children can complete their schooling. And surprisingly I found such a place, Charleston W.V.

But before moving to Charleston let me tell you about Dr. Gertie Marx.

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Dr. Gertie F. Marx
Mother of OB. Anesthesia

1912-2004
Mother of OB.
Anesthesia

When I came to Dr. Orkin's program 3 things impressed me most, Swan Ganz catheter, epidural anesthesia and Dr. Gertie Marx. She always used to work on OB. floor. The OB. Department at Jacobi hospital was on eighth floor and anesthesia office was on twelfth. She always used stairs to reach both places. Every Obstetric anesthesiologist knows her long and illustrious carrier in OB. Anesthesia. She is called mother of Obstetric Anesthesia. Before Dr. Marx, regional anesthesia for childbirth was a rare event. She had a lot of opposition from Obstetricians, Natural child Birth group and even Obstetric nurses in promoting epidurals for labor and delivery. However through her extensive clinical work and trials she proved epidural was safe for expectant mothers. When she retired in 1995 the technique was accepted by all and medicine will forever be thankful to her for this contribution. I was lucky to be so near to such a great person and throughout my practice I let people know that I was her student.

When she used to come to labor hall and she used to hear patient in labor pain she always made us go to that room and find out why she

did not have epidural yet. If the expectant mother is in pain she must be helped and epidural must be considered. That was her rule. She did not need Obstetrician's permission to offer epidural for mother in labor pains.

She was always helpful to the residents, as if their well being was her responsibility. I had a missing tooth for many years. When I started working as instructor one day she told me. "Here is my Dentist's number. Call him and get that tooth fixed. You can afford that much now." She made sure I had the appointment and was pleased when I obeyed. I did invite her to Charleston as visiting Professor. She stayed at our house. She had great time talking with obstetricians and Nurse Anesthetists. We took her to see nearby glass factory. I last saw her in May 2002 at SOAP meeting in Hilton Head, SC.

Gertie lived, loved and worked tirelessly for obstetric anesthesia. American Society of Anesthesiology gave her" Distinguished service Award" in 1988. At that time I went from Charleston and in the evening reception presented her an appreciation plaque on behalf of Foreign Medical graduates of Einstein to whom she was like a mother.

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Monitoring Then and Now

When I finished residency with Dr. Orkin I had finished 9 years of training. All that training throughout this period was never boring to me. All this period (1964--1978) the techniques, agents used in anesthesia and ways we monitored patients were in constant evolution. I started with ether and now I was using isoflurane, I stared with open drop and now I was using close circuit. I had seen just one Anesthesia machine then and now there were many. I hand ventilated the patients and now there were ventilators. The educated hand was my best monitor then and now I had CVP, Swan Ganz, and Arterial lines to monitor. It was like getting a new car every other year!

This change in anesthesia practice did not stop and I continued learning and using new techniques and improving my skills throughout my private practice years. We added measuring continuous oxygen saturation and even carbon dioxide (CO2 measurement) with respiration and after my retirement there is a new addition of BIS monitor to check brain waves under anesthesia!

The last and the most important to me was the way we gave spinals and epidural. I recognized the importance of the combined spinal-epidural anesthesia technique and started using it as soon as it was available. This has made regional anesthesia safer for the patient. I am proud to say that I made it popular in both the hospitals in Charleston, W.V. The technique has given me something to do even in my retirement years.

We will visit that topic near the end of the story.

From finger on the pulse to brain wave recording, we have come a long way in monitoring the anesthetized patient. But how would you monitor Anesthesia personnel? During my long association with anesthesia I have seen many mishaps and accidents the Anesthetist/ Anesthesiologist have caused. These are excellent people, well versed with the techniques they used and admired for their skills by the hospitals they worked in. To err is human. No one is perfect and even nature and God, yours and mine, sometimes we feel not so perfect. It is not reasonable to expect that your Anesthesiologist will be perfect. I always thought that there should be a monitor to judge physicians' intention and how much he/she believes in 'first of all do no harm.' For me, going to work was my opportunity to serve the fellow human being and every day morning was a new day and new opportunity to help someone in pain. Later in life, work was worship for me and every working epidural was a good deed. I am glad my patients noticed it!

I am still waiting for that intention monitor!

22

The Other Charleston

After the Einstein work and association with Dr. Marx, I had decided that I wanted a career as OB. Anesthesiologist and I was looking for private practice jobs in OB. Anesthesia. Dr. Marx had started a new publication--Obstetric Anesthesia Digest. As a chief editor she used to summarize recent OB. anesthesia related articles and publish in this digest quarterly. I saw a small advertisement from Dr. Robert Westmoreland (Bob in this story here on). We had some phone calls and I decided to visit Charleston, West Virginia after few weeks. Shaama had noticed that whenever I had called Bob, he was on labor hall--morning, evening, night! She warned me about this. Again I reminded her about Dr. Gopinath!

One day we landed at Charleston airport. I think Charleston airport has one of the shortest runways in America. The airport is built on the top of a hill. We came down the hill on a winding road and in just about 5 minutes we were in the hospital. There were 3 more anesthesiologists in that department and many CRNAs (Certified Registered Nurse Anesthetists) and a school of nurse Anesthesia. The hospital had fairly busy OB. department and they needed one more OB. Anesthesiologist to help Bob.

Charleston was a small city in 1981, situated on the banks of Kanawha River. It was surrounded by hills and mountains full of green trees. Green was the predominant color and coming from New York, ev-

erything looked fresh and pleasant. I told Bob that the city reminded me of Satara (city of 7 mountains) where I did my internship and also Nigeria (thick forests). He did not like the last remark! There were just a few high risers and the Capitol building with its golden dome was visible from the hospital parking lot.

On return to Einstein I told my coworkers and friends that I have found a job in Charleston. They all were very happy for me. Some of them told me that they have visited the city for Anesthesia conferences and it is a great tourist attraction and well known for its architecture. They all were talking about Charleston, SC. Not my Charleston, West Virginia! Almost Heaven!!

May 11, 1981, I joined CAMC (Charleston Area Medical Center) and practiced OB. Anesthesia for 25 years. Guru Dakshina is a Sanskrit word meaning repaying the Guru, your teacher. I always remembered Dr. Utturkar, Dr. Gopinath and Dr. Marx. They had taught me skills and good habits to be a good Anesthesiologist. But that was a small part of my learning. They and others had shown me by personal examples importance of hard work, friendship, compassion and respect. I tried to practice what I learned and repay my Gurus.

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CAMC 1981

CAMC (Charleston Area Medical Center) O.R. was not very different from the Einstein atmosphere for me. The O.R. was on second floor. There were 8 general O.R. rooms and 2 rooms designed for open heart surgery. As in other hospitals, the Labor and Delivery suite was on fourth floor. From anesthesia point of view this is the most undesirable situation. In Obstetrics there are real emergencies and anesthesia staff had to rush personnel and equipment up and down all the time. Now the new hospitals are taking this into consideration and building both the facilities together thus improving patient care. In old days, I think, this was the power play of general surgeons. I noticed in Charleston there was one more elite group, Cardiac Surgeons and their Anesthesiologists!!

At that time anesthesiologists had no assigned rooms. The nurse anesthetists used to manage cases on their own and call us only if they had questions about the plan, consultation or to perform regional and special procedures. In some way, we had the responsibility of whole O.R.

We had anesthesia office adjacent to our work room. That was a room to spend your free time, doing crossword puzzle and smoking. Unfortunately for me, I could not step into that room as most of the time it was filled with smoke. But I had a great escape. Whenever there was a call from OB. for epidural or C-Section (Cesarean section)

I would pick up the beeper and run. At that time there was no I.V. Therapist in the hospitals and that was my other escape route.

The atmosphere on the OB. floor was very different. Many Obstetricians did their own epidurals out of necessity. Bob was unable to do all the work. So Drs. Curnutte, White, Berry, Hitt, Williams, Maxson, Harish and Sandhu to name a few were happy to see me. The labor hall nurses were also eager to help me as pain free patient was a great help to them and slowly I established myself as OB. Anesthesiologist.

I did mention about I.V. therapy. One of the skills every anesthesiologist has to develop is starting I.V. for intravenous access. That is how I met this old lady. She was admitted to hospital for terminal care. I must have started her I.V. 4-5 times in those few weeks. For some reason she liked me and always asked the nurses to call Dr. J (that's me). Her name was Mrs. Namey. After few weeks I received a call from Dr. Namey. He wanted me to attend his mother's funeral and requested me to be one of the pallbearers. That was his mother's request. That was the best reward I have received for my work.

In 1981, emergency Cesarean sections were done under G.A. This is still the fastest way to deliver the baby in emergency situations. However over the years the anesthesia profession has learned that this may not be the safest for all concerned. Nowadays, more and more Cesarean sections are done under spinal anesthesia. I still remember a case. We anesthetized a patient for emergency C-Section for fetal distress. Myself and the CRNA, we both could not intubate (insert a breathing tube in wind pipe-very essential step for safe anesthesia) the patient. We woke the patient up and I gave her spinal anesthesia in sitting position. The outcome was a healthy baby and safe mother. During C-Section I always remembered that I was taking care of two patients, mother and the baby. Fiber optic intubation and laryngeal masks were not routine at that time.

CAMC 1981

After about a year in Charleston, Shaama and I invited Dr. Marx to see the place where I was working. She stayed with us, visited the hospital and delivered a lecture to nurse anesthesia students. We took her to see nearby glass factory and Kanawha State Forest. Slowly we were establishing in Charleston and calling it our own place. When I joined CAMC we used to take emergency call from the home, however the requests for the epidurals became very frequent and I decided to stay in the hospital during night. That is how the night calls for the anesthesiologist started. In next couple of years we added more anesthesiologists to the group. Now it was easy to cover the rooms and night calls.

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The Ventilator Case – Kathy Smith

That was my third or fourth day at work at CAMC. CRNA Mary was starting Dr. Newman's case in O.R.8. Dr. Newman was an ENT surgeon and always did his cases in that room. Till today I remember the patient's name. Mary had a nurse anesthesia student with her and the patient had general anesthesia with endotracheal tube. I was near the nurse's station when emergency call from room 8 was received. When I reached the O.R. there was no pulse, patient's pupils were widely dilated. Dr. Allen, cardiac anesthesiologist arrived soon after. They conducted the CPR drill. The patient did not respond and was pronounced dead.

This mishap happened because somehow the anesthetic gases (about 6L/min) were entering the lungs but had no way to escape; the expiratory valve was not in the circuit. The pressure was building up in the lungs and they were expanded like a balloon and ultimately burst. This was severe barotrauma. I do not remember the make or model of the anesthesia machine but the company was informed and I learned they changed that design. That moment I remembered the value of educated hand and that hand feeling the breathing bag or eyes watching the ventilator bellows. Some anesthesia charts demand too much documentation and this takes the mind and eyes off the patient. We did not have oxygen saturation and end tidal CO2 monitors then. Maybe the new electronic charting will solve this problem. Instead of beautifully

filled chart I always preferred beautifully delivered anesthesia.

The same can be said about ether screen. I always liked it just high enough to separate the surgical field but low enough to keep a watch on the surgical field and protect patient's face, eyes and endotracheal tube.

Dr. Allen tried his best, gave a large dose of Pentothal for brain protection but the damage was already done!

Though I was the first anesthesiologist to come in the room, I was never called for deposition or named in the lawsuit. The circulatory nurse did not know how to write my name and wrote only Dr. Allen's and I escaped the trauma of that experience. Soon they had an easy name for me, Dr. J.

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The Lighter Side of It

Laughter is the best medicine! Throughout my anesthesia career I have heard and made many jokes. About jokes you hear, laugh and then they are easily forgotten. I still remember some though. Hope you have a good time reading these. Some you might have heard before and some are original.

When I came to Einstein the place and culture was new to me. I still remember Gerry Bassell talking loudly in his Australian accent and making jokes. I wanted to do that. One day Gerry, Dr. Elizabeth Stein and I were in the room. I gathered courage and started telling my joke. At the end I delivered the punch line. There was no reaction. They both looked at each other and then at me, saying with their eyes, we did not get it. After few minutes I quietly left the room. But this did not stop me. I knew if I can tell a joke I will be able to communicate better. So one day I tried that again. We were in call room and in the discussion someone used the word ASSUME! Suddenly my light was turned on and I said. "No! No, when you assume something you make AXX of U and ME!" The whole room was filled with laughter. It was very difficult for me to say the word AXX but I did it. I was impressed with my ability.

When we moved to Charleston I was very busy with hospital and settling down. In 1982 for about a month or so I neglected the lawn care.

That was the time of invasion of Falkland Islands. Our next door neighbors were Mr. and Mrs. Coburn. I still remember Mr. Coburn's comment. "Dr. J. You should import few goats for your lawn care from Falkland." That was enough hints for me. That whole day I worked on my lawn.

Dr. Ledbetter was a senior surgeon at CAMC. He had a typical type A personality. He had heart bypass surgery at age 48! He used to do carotid artery surgery often and apart from OB. I loved doing those cases at that time. I could use my skill of placing arterial line, using controlled hypotension and waking up the patient as soon as surgery was over. With newer drugs and agents this is easier now than in 1982-84. We had become a team.

One day Dr. Ledbetter was near the coffee station. I said to him "Dr. Ledbetter there are few gay physicians on our medical staff and as a chief of staff you should know their names." His first reaction was not to listen to what I was saying. Soon curiosity took over. In low voice he said:"O.K. Who are they?" My reply was "Kiss me and I will tell you at least one name." I had never seen him laughing full heartedly like that before. He still remembers that.

When I was in New York I was named in one of the lawsuits of the department. I had to go to New York from Charleston to testify. No lawyer is a good one unless he is your son or daughter. The plaintiff's lawyer was asking questions in raised voice. Their excuse for that is the jury should be able to hear! They always select one juror with hearing problem!! We were on the subject of supine hypotension syndrome. He asked me "Dr. at that time there were many publications on this subject. Did you read those? Were they in English?" I did not understand his line of questioning? Were they in English? I looked at the judge for help and suddenly I had the answer. I said "No. They were not in English!" The lawyer looked puzzled. "No, not in English?"

"No, they were not in English English. They were in American English where we spell colour as color and cheque as check." I saw smile on few jurors' faces. Soon after that the lawyer had no questions for me.

When there is an incidence in O.R. the plaintiff's lawyer sues everyone in O.R. and then by process of elimination tries to reach the source. It was discovered that a surgeon had left a sponge in patient's abdomen. Mr. Smith, the patient was also called for deposition as he was also in the O.R. The plaintiff's lawyer asked him what you were doing that day. Mr. Smith" I was sleeping Sir." "Sleeping in O.R.?" "Yes, I was anesthetized. I am the patient and you WERE my lawyer!!" This did not really happen but can.

Now this is a true story I was the Anesthesiologist in a missing sponge case. I was asked in deposition if I knew how nurses count the sponges. I said I really do not know but I guess just like you and I. 1, 2, 3, 4, 5! 1, 2, 3, 4, 5!!

A priest, a Hindu monk and a lawyer were traveling together. It was night and they stopped at this farmer's home and requested shelter. The farmer said "I have two beds in the house and one of you will have to share the barn with the cow." They agreed. The priest went to the barn but came back soon saying that cow hates him because he ate her cousin! Next the Hindu monk went but he also came back. "I cannot sleep in front of cow. I worship her. It will not be polite." Now it was lawyer's turn. And soon there was knock on the door. This time it was cow. She said "I cannot argue with this fellow the whole night. I need peace and my beauty sleep!"

I worked at CAMC Women and Children's division for many years. I used to do OB. and Pediatric anesthesia there. Dr. Margarita Torres was the pediatric surgeon and very good to her patients. We used to give versed syrup to children before taking them to O.R. That used to relax them and make separation anxiety less. Somehow children used

to come to me with or without sedation. Probably they used to sense that this man will protect me and I am quite safe with him. This used to happen quite regularly. Sometimes they would not go back to their mothers and that was quite awkward to them. Once I took a child to O.R. with me. Dr. Margarita asked if the child have versed. Laura Hunt was the anesthetist with me. She said "The child does not need Versed, it has Dr. J." Everyone in the room agreed including Dr. Margarita! Such memories made working worthwhile!

During my last few years in practice I was working at Thomas Memorial Hospital. The CEO there was an avid golf player and very proud of his game. Once he was in O.R. I asked Mr. Dexter about his game and said I have a suggestion for him to improve his game. After all, top professional golfers use it. He was interested and asked me about it. I said" Next time you play, wear two pairs of socks" "Why?" I said "In case you get hole in one!" Try this on your golf buddies. You will never forget the expression on their faces!

A Case of Canine goiter!

Every year in July new residents used to join the OB. Service. Medical students and residents are always eager to learn new things. I would sit there near nurse's station quietly and soon someone would ask me what was wrong. "Oh, I saw Dr. Kerns yesterday and he thinks I have a goiter, canine goiter." They had never heard about canine goiter in Medical School and the enquiring minds always wanted to know more. I used to tell them that they cannot see it, they have to feel it. I would extend my neck and someone would come near and try to feel the swelling! As soon as they touched my neck I would make a loud barking noise! I have startled many of them over the years and enjoyed that each and every time.

I cannot close this without telling you some West Virginia jokes. First time I traveled West Virginia, I took exit for 14 South from I 79 South

towards Beckley. The road was a two lane highway through mountains up and down, a winding road. I could not take eyes off the road. I realized then why West Virginia is called Almost Heaven. A slight mistake and you are almost there!

This West Virginian was visiting his New Yorker friend and they were walking on Fifth Avenue. The West Virginian was impressed with the high risers and was looking up. His friend advised him not to do that. "You know it takes money to build these high risers! Do not look up. If police catches you looking up you will be fined." The visitor could not resist and a New York cop stopped him. "Sir, you have to pay the fine. What floor you were looking at?" "Fifteenth Sir." He was fined $15. The friend said "See, I told you so!" Our W.V. Visitor says "Do not worry. I fooled him. I was actually looking at thirty second!"

I cannot resist telling you one more. These two gentlemen arrived in Heaven, One from West Virginia and one from New York. New York? Yes, he was a fire fighter. They both wanted to call home. First West Virginian called. Now it was New Yorker turn. God asked him $1 fee. The New Yorker said "How come you did not charge him?" "Oh! He called West Virginia! That's a local call, Almost Heaven!"

26

Epidurals–Not Just For Labor and Delivery–Post Op Pain Management

At Einstein I was impressed with two techniques, Epidurals and Swan Ganz Catheter. With Swan Ganz catheters the rate of complications was too high and indications for use were limited. So the use of these catheters declined. One of my teachers from Einstein died at young age because of Swan Ganz catheter complication. The story with epidurals was completely different. As we progressed towards 1990, epidural technique became more popular with laboring patients. The resistance of Natural childbirth group declined. Quality of epidurals improved with addition of new drugs (local anesthetics and narcotics). OB. Anesthesia was also getting popular with new anesthesiologists and became a sought after specialty. Dr. Marx's dream was becoming a reality.

Soon infusion pumps were added for delivery of epidural medicine. The frequency of break-through pain became less and so did the need for frequent patient visits. The drugs were not injected in the epidural catheters as bolus. This decreased the chances of bolus injections in the blood vessels.

I had noticed my epidurals worked better than my colleagues. Patients and hospital staff had noticed that too. I used to say I put something more into my epidurals than my colleagues--love and compassion! I think the real reason was the way I did my epidurals. I gave meticulous

attention to the technique and left just enough length of the catheter in the patient. With every working epidural I was amazed and happy. That became my passion. To some extent I was addicted to this work of relieving pain. Many doctors, nurses and medical students were requesting me to do their epidurals or help their relatives. That was a reward in itself. OB. nurses and patients were happy when I was on call.

Around this time Bob and I started doing epidurals for postoperative pain. We used to give 3-5 mgs of morphine in the epidural space and that used to help patients for 20-24 hours. Slowly the requests from surgeons for epidural morphine increased and became a routine with some surgeons. For few years even the cardiac anesthesiologists showed interest in the technique.

One day I was just visiting the memorial division. Alice Smith (one of our senior CRNA) had had a thoracotomy for lung tumor the day before. As I was in the work room she had called. Her epidural was wearing off and she was in pain. I took some local anesthetic and went to her room and gave her the epidural dose. In a short time she was comfortable and smiling. That was the power of epidural!

I came to New York for my residency in 1975. Every year in December the New York State Anesthesiology society held its meeting-The Postgraduate Assembly at Hilton hotel in Manhattan. As a resident and then staff at Einstein I attended it every year. That was my meeting for continuing medical education and even after I left New York, I attended that meeting almost every year till 1999 when I retired from CAMC. In December, 82, while at the meeting I saw the movie Gandhi. I had seen Mahatma Gandhi when I was in school in Wai but that was just a glimpse of him from far behind in the huge crowd. That was the best PGA meeting I had attended. Next week I was on labor hall and suddenly I decided to become Gandhi! I was in call room. I covered myself waist down in a small bed sheet, another bed sheet over my shoulder and an I.V. pole in my hand. Over the weekend I had had a crew cut. I

looked myself in the mirror. I did look like Gandhi! Barefoot through the elevator I came down to second floor. On the way I greeted everyone I met with Namaste and good morning with folded hands. I came to O.R. and waited there. Slowly the word spread, Gandhi is here! Gandhi is here!! Those who could come came to see me. I still remember the look on their faces, Drs. Sibley, Khan and many of my CRNAs. I delivered a small talk- importance of good work, respect for each other and help in need! That was fun! Slowly I turned back and disappeared into labor hall. Some of my friends from Charleston still call me Gandhi.

But soon I realized that was not just fun. From that day I always thought why we all can't behave like Gandhi? I thought it was easy to do. At work always smile, do your job right with your heart in it and enjoy when the job was done right! Help others when you can. I may not be totally successful but if I try, that will not hurt anyone. With these thoughts I was working, enjoying my work and in Charleston I met a gentleman whose personal example, life style, teachings and his love for children and humanity, forever changed my attitude towards work and strengthened my desire to become a better person. I am ever thankful to him. He was, as Shaama addresses him, our Guru! Dr. Ramakrishna.

27

Dr. Ramakrishna and Work Ethics

This is a story about my life as Anesthesiologist. Dr. Ramakrishna and his teachings have influenced my life and made me a better person and Anesthesiologist. I will not be able to move ahead without appreciating this influence.

When I informed Professor Orkin at Einstein that I was moving to Charleston he was surprised. 'Why? There is nothing there except hill-billies and coal mines." He did not know I was going to find a gold mine there. Dr. Ramakrishna! Dr. Ramakrishna came to Charleston around 1972 and worked in the state department as a civil engineer till his retirement. He had recognized the need of religious programs for Indian community and children in particular, and started worship and Satsang programs. The community is still benefiting from these regular programs. With his in depth knowledge of Indian philosophy and scriptures like Vedas, Upanishads and writings of Swami Vivekananda he was and is treated like a priest by the community. In Satsang (company of good souls) meeting we read and discussed these scriptures

and Bhagwat-Geeta. I was most impressed by his thoughts and teachings on Karma Yoga. Here is a little synopsis of his teachings.

"You should be happy that you have knowledge, mental capacity and physical ability to work. Whatever work you are doing, do with all your heart in it. You do not have to be in New Delhi, New York or other big places. Even in this small place you are serving God's children! Always remember that this whole universe is one big family. Give your 100% when you work and concentrate on what you are doing. Do not think what if I fail in doing this or what I will get if I do a good job. This takes away your concentration from the work at hand. Live fully in the present moment. This will improve your work and reduce the fatigue. Follow this and work will be pleasure. Soon you will wake up in the morning with strong desire to go to work and do your best. You come to Satsang or go to church, that will not take you near God; these are places just to remind you how you can reach God, one of the ways for union with God is through work. Remember work is worship. "Do it right and God will do right for you."

I had read Bhagwat Geeta and Karma Yoga before. This was different. Dr. Ramakrishna was not a preacher by profession. He used to read, discuss with us and then summarize. No one before had told me about Karma Yoga in that plain simple English. What's there not to understand? He was a living example of what he believed. I thought this was the perfect way to work on labor hall and practice anesthesia. I was ready to take this karmaYoga experience from Satsang to everyday life.

There was this hospital in California. The private pay patients (patients without insurance) had to deposit fees with the cashier before they were considered for labor epidurals. That was the rule of department of anesthesia. Patients sued that hospital and rightfully so. How can you deny pain treatment to anyone? Fortunately I practiced in better environment. We did not know who was paying and who did not. As far

as labor epidurals were concerned our patients were in God's country. I took Dr. Ramakrishna's teaching straight to work. I tried to improve my technique, kept in touch with recent advances and concentrated on the procedure and not on the results. I had the perfect job. Where else you do the work and see its reward right away? I realized that successful work is reward itself. I saw the expression of thanks in patient's eyes and I was more comfortable at work. My confidence increased. I had more energy to help others in my free time. I was happy that I was proving Dr. Ramakrishna right.

Dr. Ramakrishna continued to serve the community and was a constant source of morality and spiritual guidance. He retired in 1996. At his retirement party he announced his plan to start a school in Bangalore, India for orphan children and with his unparalleled enthusiasm and unsurpassed zeal, has made it a reality.

As OB. Anesthesiologist I was doing 24 hour calls every forth day and almost every weekend I used to work. This left very little time for me for socialization, late night dinner parties and card games. And this suited my temperament perfectly. I remember labor hall nurses have celebrated my birthday many times with Dr. Pearcy and Dr. Thomas and many Thanksgiving days I have taken apple pies for them even when I was not working that day. That was my family away from home.

Shaama and I did one major change in our lives at this time. We moved from our house on Parkwood Road to a bigger house!

28

House For Community– Puja Mandir

It was 1986. I had worked in Charleston now for about 6 years and developed many friends. I had given epidural to Bettie Gammon for knee arthroscopy and she was one of my many "epidural friends." One day she called me to inform about this old church on Roosevelt Avenue. The Mount Olivetti Baptist Church had built a new facility and had moved to MacCorkle Avenue and they were looking for a buyer for the old building. It was just in front of her home. She knew Dr. Ramakrishna's and my interest in religious activities and thought I might be interested. That evening Shaama and I went to see the place. It was an old building and needed a lot of work, however perfect for us to live and also to provide it as a temple for the community. We did not take much time to take the decision and on Jan 28, 1986 bought the place.

Dr. Trammell was a general surgeon at CAMC and I still remember his remarks "Dr. J. has flipped." But with this decision I was more comfortable than ever. Our children had gone to college and we did not need the big house on Parkwood Road. I never forgot how we brothers and our mother lived in childhood. We all shared a small room attached to a wall of a building. The room had half walls on the remaining three sides and wire mesh covering reaching the roof. The roof was made of asbestos sheets. When it rained we all used to huddle to one side of the room with all our belongings. I never forgot that in America. I did

not need a nice big house for me now. Shaama was with me on this and we decided this will be the proper use of our good fortune. We were happy to provide Dr. Ramakrishna and community a place to call their own and for us to live in. To keep the sanctity of the place there was no non-vegetarian food or alcohol allowed. The place was good for our body, mind, heart and soul. Dr. Ramakrishna had changed me and I was taking that change to work! And it was working.

There was a welcome sign in the foyer and I still remember a few words from it.

Welcome to Puja-Mandir, the place for worship.

This is a big place for the family of small man.

Come in with your own God!

If you see any dust, remove it.

Treat this house as your own.

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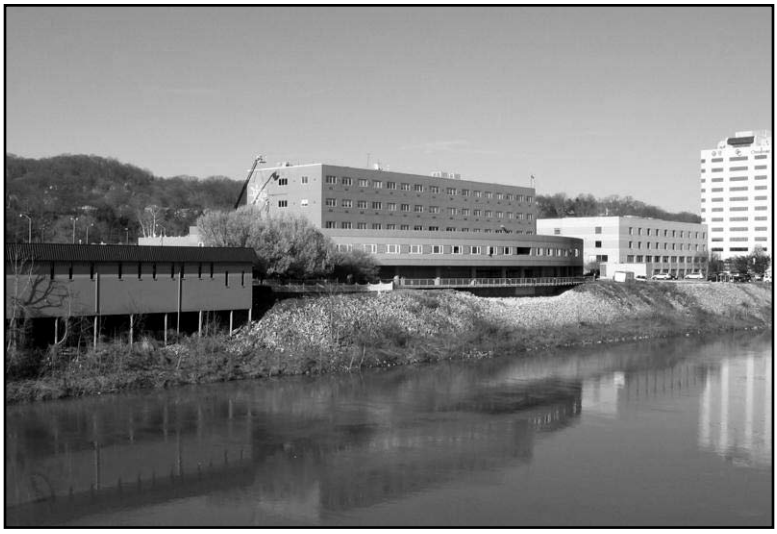
Women and Children's Hospital



The Women and children's Hospital, Charleston, WV on the banks of Elk River. The semicircular part of the second floor is the Labor hall Unit. There are about 50 rooms with view of the Elk River.

In 1987 CAMC bought Kanawha City hospital and moved the women and children services there. I also moved along with these patients. This was a nice little hospital on the banks of Elk River and you can see the river from the gallery of doctor's lounge. OB., neonatal ICU and O.R. were on one floor and this was very convenient for anesthesia staff.

The OB. unit was built on the new concept of LDR program. The patient will be in the same room during labor, delivery and recovery

period and then will go home. There was no need to transfer the patient to other room after delivery. This looked great on paper however, did not work with nursing staff and physicians. There were 40 rooms and laboring patients were all over the unit, all the nurses were not well trained in all the skills, the equipment was scattered all around and at times difficult to find. We had some near mishaps and bad outcomes because of this. My India trip was planned and a couple of days after we moved to W& C division I went on vacation for 3 weeks. After I came back I saw the OB. unit had returned to old practice of Labor and Delivery and separate Recovery units and the problems were solved. I had some of my best working days and nights on that unit for next 12-13 years.

This was a small hospital and everyone knew each other by their first name. We all witnessed the work others did and developed respect for each other for what we did. Dr. Schiano joined as surgeon (surgical oncology) and Dr. Torres as pediatric surgeon. Dr. Maxwell and Dr. Jayaram were the neonatologists and I used to see them many times at the time of Cesarean Sections. The whole hospital was one big family. We all worked for our patients and patients noticed that.

There were a few problems. The hospital was separated from the main division and the other specialists were reluctant to come here for consultations. I never understood their response but I never understood or cared for economics either. The visits were not paying them for the time they spent on these calls! One cardiologist Dr. Josh Thakkar always helped us and made things easy. We did not have adult I.C.U. either. We had to transfer our patients to memorial division. Soon we had a room in Pediatric I.C.U. for adult patients. I had learned ventilator management and I.C.U. skills while working at Einstein. I started using those skills at W&C. division.

With me there were 4-5 other anesthesiologists who worked on OB. unit regularly. They were Drs. Bob, Candy McCormick, Donna Slayton,

Eric Persily and Mickey Neal. We all had special training and interest in OB. anesthesia. On many occasions we helped each other and those were some of the best years of my anesthesia practice.

Work At W&C Hospital

Day's work

I used to arrive at hospital before 7am with other colleagues. My first duty was to go to Labor Hall and relieve the Anesthesiology team working during the night and take over work on labor hall.

Then I would go to O.R. and get the first patients ready for surgery, review their charts, consent, start I.V. and antibiotics and explain the anesthesia plan to the patients. The move-in time was 7:30 am. We had a fine support team of CRNAs and many times I had told them we could not have done all that work without their help. Most of them were students from the CRNA School at CAMC and we knew each other very well. To work with children and women the anesthesia staff needs special understanding, skill and attitude. That was a dedicated team. I still remember their names and many occasions the valuable help they were. Here are just a few names- Debbie Phillips, Debbie Schaefer, Joan Cochran, Judy Williams, Mary Likens (Mrs. Schiano), MaryAnn Jones, Trish Day, Laura Hunt, Jeannie Alexander, Suzanne Richardson. They all had special interest in subspecialty and sometimes knew a little more about the surgeon's requirements and patient management than I did. That worked well for me.

We had to be punctual. That was first requirement and most of the anesthesiologists are. I was super-punctual! I still remember I had locked my key inside the car that morning and arrived at the hospital 10 minutes late. Candy Mccormick was very upset. She was sure something was very wrong with me. She had already called Shaama at home and was thinking of sending a search party!

John was regularly late on Wednesdays. That was trash pickup day on his street. But there was punctuality in that!

I used to manage one room in the O.R. and run and do epidurals and Cesarean Sections on OB. floor. The two places were adjacent to each other and it was fun to do that. We always kept one room ready for emergency C-section. The anesthesia machine, equipment for intubation and drugs drawn and labelled in syringes were checked every day. We had to be ready for emergency with a moment's notice. Only thing I used to check with these patients was their allergies, airway and running I.V. Today general anesthesia for C-Section is rarely used and is replaced by spinal.

Apart from this O.R. and OB. Work, I used to see patients on their post op days, treat spinal headaches with epidural blood patch, manage post op epidurals for pain, help start I.V.s on pediatric units and respond to occasional calls from Emergency Room for performing spinals. This all used to keep me busy and around 3:00-3:30 PM I used to go home. One of us would remain in the hospital for the night call and to finish the remaining work for the day.

At W&C we had just started the out patient surgery unit. We had to take turns to work at that facility for one week at a time. For few months in the evening I started complaining of stomachache for no apparent reason. Then I realized it happened the weeks I had to work at the surgery center. The work at surgery center was very different. The anesthesiologist did not do much, just seeing the patients and signing the charts. Actually the in-charge doctor at surgery center (Dr. Bobby Baker) was nicknamed as Dr. Dolittle. Not doing anything with my hands was stressful to me. Bob and others did drop me out of that rotation soon after that.

Most of the hospitals have separate lounge for doctors and nurses. Not at W&C hospital. We had a common room where we enjoyed

birthdays, sendoff parties and heard Dr. Maxson's jokes. Here I startled them often with my announcement of Stat C-Sections.

Night duty

The call duty was from about 3:00pm to 7:00am next day morning. I used to finish remaining work in O.R. and then I was responsible for the emergency work. We had help of 2 CRNAs and sometimes I remember working all the hours till morning, Stat C-Sections, pediatric emergencies, etc.

Somehow spontaneous labor starts more often at night than during the day and induction of labor was not done routinely then. Also OB. department had strict guidelines for induction and were followed correctly.

I had a plan for my night work. When I had some time I used to go to labor hall and interview the patients who were admitted for delivery. I kept the entire paperwork ready (review of chart, consent, short history and airway check). Then it was easy to do the epidurals when requested. The paperwork used to take more time than the actual procedure of placing the epidural. Many things were changed from the residency years. The infusions worked fine and there was less need for top up injections and patients were more comfortable.

A word about informed consent.

When I was with Dr. Marx, written consent for epidural was not necessary. Epidurals were considered as emergency pain relief. Over the years the idea of informed consent went in practice. One of our colleagues Dr. Baker used to inform all the details of complications and technique, including possibility of death and paralysis. This did not go well with the patients. Laboring patients are in pain and when you are called for epidural they have made up their mind. One of his patients

one day asked him "How many you have paralyzed or killed?" The answer was "none." "Then," she said, "Shut up and do it." Since that day he changed the practice. Later he became cardiac anesthesiologist! I always kept my consent short and sweet. Surgeons always include death as possibility in informed consent: that does not mean if that happens they are off the hook!

I had easy way to convince the patients. I used to tell them "You drive the car. There is always a possibility of crash and death. The possibility of you dying in car accident is far more than under anesthesia. One other way of convincing that epidurals were good was "If it is my sister or daughter in your place I will do it." Almost always there was no argument over that. I had one more advantage. The OB. nurses always used to tell how good I was and how lucky the patients were that I was on call that day!

I worked very hard during that time. I used to do, on average, 10 epidurals in 24 hours period. As I worked more, I got better at it. I held the epidural needle in my left hand and always during insertion of needle I rested it on the index finger of right hand. I had developed a callus on that finger because of that pressure. Epidurals were just an injection with a big needle and inserting a catheter through it. However it is hard to watch this procedure being done on your wife/friend and earlier in my practice I had seen couple of husbands fainting and having to go to emergency room. Now I always made them sit in a chair holding mother's hand. Few of them did not like the idea. That used to hurt their macho image.

Many doctors, nurses used to request me to do epidurals for them or their relatives. I used to feel awkward to do this when my colleagues were on duty. I was not sure that I had a better technique. It was hard for me to say no also. Slowly I overcame this problem and started enjoying this fame. Towards the end of my practice at any gathering or in the supermarket or at the parties, I would meet at least one person

I had done epidural for. They used to come to me and remind me about it. And still when I am in Charleston that happens "Dr. J. You did my epidural. Do you remember that?" My response was always the same "Did it work? Yes? Then I must have done that." This always resulted in laughter! Over the years with practice, my technique as well as understanding of epidural anesthesia improved. The addition of new drugs (narcotics like morphine and Fentanyl) and practice of combining drugs, improved the quality and safety of this technique. We started using dilute concentrations of local anesthetics. Now the epidurals were just relieving the pain leaving motor power of the patients intact allowing them to participate in labor, pushing effectively and the term walking epidural emerged.

I remembered my old textbook of anesthesia (Alfred Lee?) from India. In the Obstetric anesthesia section the author had written something similar to this **"The nerves involved in labor pain emerge in the lumbar and lower thoracic area--God designed all this to suit spinal and epidural anesthesia perfectly. We just have to use all this wisely for the comfort of the patient."** I was seeing all this emerging in front of me from Dr. Utturkar to Dr. Daniel Moore, Phillip Bromage to Dr. Gertie Marx. And now the pillars of her society, Society for Obstetric Anesthesia and Perinatology (SOAP), were advancing the technique further. My patients and I in private practice were enjoying the fruits of their labor!

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On Call Memories

In early 1970s when I was working in Solapur Civil Hospital, sometimes I used to go for emergencies from home. Aaya (lady messenger) used to bring a notebook with her to my house and I would sign that as a record of call received. In Institute, administration had provided us with home telephones and that was a great improvement.

I was first introduced to paging system at Einstein. I had never seen a pager before. I still remember the first time I answered the beeper. I put the beeper to my ear and responded with a big Hello! My co-resident, Jitendra Patel told me the correct way to respond, to dial the number displayed on the beeper!

I still remember that Sunday at Institute. Shaama, Dr. and Dr. Mrs. Punnoose and I decided to go to old Delhi and Red Fort. We had gone for whole day and after visiting Birla Mandir returned home late that night. Next day morning we both returned to O.R. and got involved in our work. After couple of hours Dr. Punnoose came and told me that I was on call the day before! Institute was a very busy place with all the subspecialties including OB. That day I just got lucky and no one needed my services.

There was no chance of this happening at W&C or Thomas Hospital in Charleston. We never left the hospital till the next on call person

was on site. One day I came for my call duty in the morning. Dr. Baker was waiting for me in the parking lot. As soon I stepped on the OB. floor, there was a stat call for anesthesiology from Recovery Room on the hospital over head page. I rushed there. Dr. Thomas had done a D and C operation and patient was in severe bronchospasm. I had to do something quickly. I opened a vial of epinephrine. I drew 0.1ml (100 micrograms) of it in a tuberculin syringe for subcutaneous injection! When I reached the patient she was blue and her respirations were almost inaudible because of swelling of mucosal tissue in her throat. This was severe (latex) allergic reaction. I decided to give the medicine I.V. and injected the drug in the tubing. That was a large I.V. dose. In couple of minutes I could see her EKG slowing down, few PVCs and then a straight line. After few missed beats the EKG tracing returned to normal. In a hurry, I had not diluted the epinephrine! This all did work very quickly on the bronchospasm! The outcome was good.

That morning I was almost ready to go home after my 24 hours in hospital. It was about 6:50am and a nurse from OB. called requesting me if I could do this epidural before going home. I did go to room with the epidural tray and medications. I always checked a few things before doing epidural. The labs. were O.K. Fetal heart tracing looked fine. There was an I.V. bag hanging by the patient with I.V. stand. I did the epidural. The patient's B.P. was little low so I asked the nurse, Wendy to give some IV ephedrine. That time she told me she had not started the IV yet! That was one of the fastest I.V.s I must have done! Though I went home, I worried about that patient till she had her baby.

OB. work is very unpredictable. I remember that morning around 5am Debbie Phillips was doing a pediatric case in main O.R. I had started a section under spinal anesthesia on OB. floor. In few minutes they brought a patient for stat section in the other room. I started that case with Debbie Schaefer leaving the patient under spinal with the OB. nurse! So all of us were busy with our patients and we got a page for stat intubation from Pediatric ICU. Again for few minutes, the OB.

nurse took care of my patient under spinal anesthesia.

One day one of the patients I had seen on the post op rounds was having intractable nausea and vomiting. She had a C-Section and spinal anesthesia with intrathecal morphine. The small dose of morphine given through the spinal injection relieves the post operative pain for about 20 hours. However the nausea and vomiting is a side effect. I gave usual medications like Narcan, Phenergan and Zofran and none of them had worked. I was not sure how I was going to help her. In the afternoon I was washing my hands and when I looked in the mirror I saw the answer right in front on my head. On my cap I could see the answer KYTRIL! I gave her 1 mg I.V. and that worked like magic!

This is a story about a 4 year old child, very lethargic and listless, diagnosed with chronic intestinal obstruction. Dr. Starling was the surgeon. We had given general anesthesia and myself and CRNA, we were giving fluids and blood. The intensivist Dr. Mitchell was also in the room. He was telling me not to give more than 4ml/kg blood and fluids! Dr. Starling looked at me in disbelief and signaled his disapproval of that suggestion. The anesthesia team gave enough blood and fluids. Dr. Utturkar clinical signs were still working. (Skin turgor, fullness of veins!). At the end of anesthesia the child woke up with a good cry and vigorous movements. In ICU they were not giving enough fluids and that was the reason for child being lethargic and listless. This Dr. Mitchell and another ICU doctor Dr. Err had great qualifications on paper but clinical skills were lacking. Soon surgeons took over the post op. management of their patients in their own hands.

Pre-emptive Anesthesia-----Now at W&C we were using epidural anesthesia for post op. pain routinely. Dr. Chan was our oncology surgeon and requested epidurals for pain relief for his patients. I learned very early that you have to give the epidural medication before the pain starts, before the surgical incision.

It was around 3pm and before going home I had prepared the patient for operation for Dr. Chan. I learned next day patient was not comfortable with epidural medications. In next 2-3 days we had to repeat her epidural, change the medications, increase the rate of infusion and even with all this she was never pain free with epidural and we had to give I.V. meds. The anesthesiologist had not given her epidural dose before the surgery started. She received the medication only after she complained of pain in recovery room. Epidural to work effectively has to be pre-emptive!

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A Case of Postpartum Hemorrhage

Postpartum Hemorrhage is bleeding after the delivery. This is a common complication after delivery and the whole team, obstetrician, nurses and anesthesiologists have to work quickly and efficiently to manage and save the patients. I will never forget this case and events thereafter.

That was Sunday morning. Rodney called me from the hospital and asked if I can relieve him as he had some family emergency. I went to hospital around 11am to take over his call. That day the labor hall was quiet with just 2-3 patients in early labor. One of the patients was Cathy a nurse from cardiac surgery unit and she was very happy to see me and that I was going to do her epidural. By 2pm she was in good labor. I did her epidural. Her husband and best friend Marsha were in the room. The epidural was working fine and everyone was happy. The labor progressed nicely. When she had about 7-8 cm cervical dilatation the OB. nurse called me. Cathy had just experienced a fainting spell. I checked the blood pressure. It was a little low. After position change, fluids, some ephedrine and O2 mask she was feeling better. It was about 7pm. Around 8pm the fetal heart strip was not looking good and we did an emergency C-Section. The baby cried well, the Apgar scores were good. There was some blood in the amniotic fluid and the uterus took some time to contract. Otherwise everything went uneventfully.

I saw her again around 10pm. She was bleeding and had lost enough blood for all of us to worry. I started another I.V. That day Sara was the chief OB. resident and she was very helpful. She called Dr. Smith, Cathy's obstetrician. She requested him to come in but he just gave suggestions on the phone instead. Next 3-4 hours we must have called him to come in at least 4-5 times. He did not. I did not know why he did not respond. There were various rumors, party, drinking, etc.

I was happy about our system. We were in the hospital round the clock. We were practicing ideal medicine. Cathy's B.P. was dropping. Sara and I decided that she needs emergency operation.

The OB. floor was getting busy. While I was busy doing other epidurals, with help of CRNA (Suzanne?) I got the O.R. ready. Around 5am in the morning Dr. Smith showed up. Cathy had emergency hysterectomy to stop the bleeding. Her Hb. had dropped to 3gm. She was intubated, had 6-7 blood transfusions and blood products and C.V.P. monitoring. 8am in the morning she was in recovery room and looked quite stable, though still on ventilator. All this time her worried husband was waiting outside. Throughout this time I kept him informed about her condition. I told him about my experience at Einstein hospital in New York. We had to give 48 blood transfusions to that patient and she had walked out of the hospital on her feet and thanked us. He seemed to be a little relaxed after our talk but Cathy was not that lucky. Post op. she developed RDS (Respiratory Distress Syndrome). She was moved to ICU. They even tried extra corporeal circulation (ECMO) for her. We all her friends are still sad she did not make it.

We all contributed for her child's education fund. Her best friend Marsha married her husband and took care of the baby girl. This all happened many years ago and I have lost contact with this family. Now I always imagine that little girl, grown up and helping people as a good nurse or doctor!

A CASE OF POSTPARTUM HEMORRHAGE

The residency program at Einstein had taught me a few good things. We were supposed to write a report of any untoward incidence during anesthesia and submit for departmental review. I continued that practice after residency. I was called for deposition in Cathy's case. I just handed over my notes to the lawyer. That was enough for him. I do not know the outcome of the litigation but in couple of years Dr. Smith stopped practicing Obstetrics!

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Learning New Techniques

It was 1990-92. Now Bob and I were quite senior in the department. Anesthesiologists, fresh from residency programs, were joining our department and using new techniques. One of the techniques was fiber optic laryngoscopy. In difficult intubation cases I always depended on my skill of blind intubation which had helped me in many difficult situations.

That day I had anesthetized Dr. Tilley's patient for cholecystectomy and neither I nor the CRNA could intubate the patient. I brought the fiber optic laryngoscope and asked Dr. Tilley to help. He did that very easily. That day I decided to learn the technique. In few months I attended a workshop in Boston and started using it. The technique was very easy and fun to perform and soon I was an expert in the technique.

Conventional laryngoscopy is done with a rigid laryngoscope blade. Here the anesthesiologist sees the larynx in the path of the blade and inserts the tube in the airway for ventilation. Sometimes this is traumatic to teeth, lips and oropharyngeal tissue. We try to bring the larynx into view by pressing and moving the soft tissue in the neck. At times it is difficult and then we have to take help of fiber optic scope. With fiber optic we guide the tip of scope towards the larynx, so it is less traumatic in difficult intubation cases.

We always gave a talk in the prenatal clinic on epidural anesthesia. I

always stressed the importance of good airway and told the patients how to check it. Stand in a well lit room and see yourself in the mirror, open your mouth and say 'Ahaa' with tongue hanging out. You are fine if you see your tonsils or the space they were in. If not, please let your anesthesiologist know.

I attended the New York PGA (Post Graduate Assembly) meetings regularly for many years. For me the great attraction of the meeting was the scientific exhibits. Every year I tried to bring the new equipment and techniques I learned to our hospital. In early 90s the micro catheters were introduced and the technique of continuous spinal anesthesia emerged. This was a great technique for seriously ill OB. patients (ASA class 3-4). I did about 25 C-Sections with this technique. Bill White was a CRNA and teacher at the nurse anesthesia school at CAMC. He summarized the clinical study and wrote his thesis for M. Sc. However FDA disapproved the fine catheters because of complications (paresis). Fortunately we did not see any complications.

The quest for improving the epidural technique continued. The academic anesthesiologists soon came up with idea of combined spinal-epidural anesthesia technique. It had advantages of both, spinal (quick action) and epidural (long lasting) techniques. More about this in my retirement years!

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Anesthesia Versus CAMC Administration

It was 1998. Now our group had 20-25 anesthesiologists and we were covering all the 3 divisions at CAMC. We at women & children's hospital were busy and away from the group and hospital politics. The cardiac group of anesthesiologists had the feeling that they were working harder and did not want to take part in emergency calls, wanted more time off and financial compensation. Grass is always greener on the other side. This was their discontent from inside.

The CAMC administration was planning another strategy. The anesthesiology leadership and CAMC were not seeing eye to eye. Every couple of years we had to renew our contract with the hospital for managing anesthesia services. Hospital decided not to renew this contract. The administration decided to give the contract to an out of town Company. The usual things followed lawsuits and counter lawsuits. I decided not to participate in the lawsuit. Dr. Ramakrishna's association and my Gandhian philosophy were guiding me. Also my experience from childhood about lawyers was very traumatic. I was about 8 years old. We lost our 40 acres land in that lawsuit and that made us almost homeless.

There were some other reasons for my decision to stop working. The working conditions were changing fast. Now we had time cards. We had to sign in and sign out every day. There was more emphasis on finishing work with fewer people working. I was finding it physically

difficult to continue doing night calls and group had no desire to create part time positions. I stayed with the group till the hospital was forced to sign the contract with us. In few weeks I submitted my resignation. At that time I was 62 years old and had no future plans.

It just took 3 days before I was invited to work in the other hospital in the city. Dr. Mickey Neal had worked with me before at CAMC. He was working at Thomas memorial hospital. They offered me a day time job with no night calls and OB. as my primary responsibility. I knew many of the anesthesiologists in that group professionally and socially. Many CRNAs were students from CAMC anesthesia program and it was a very smooth transition for me.

In the last couple of years at CAMC while everyone was engrossed in lawsuit and its outcome I had concentrated and learned the new technique of combined-spinal epidural. This technique was a novel idea. Spinal works very fast and with epidural we can prolong the pain relief by using the catheter in the epidural space. A small dose of narcotic (Fentanyl) and local anesthetic is given through the very small gauge needle in the spinal space and an infusion of dilute local anesthetic and narcotic is started through the epidural catheter. This gave good and fast pain relief without motor weakness and was ideal for labor and delivery patients. This was also called as walking epidural! The technique worked so well that I did not want to do epidurals the old fashioned way. Others never tried it and did not want to change the old ways and learn new technique. I taught this technique to many CRNA students and they were impressed with it.

I started using this technique at Thomas hospital from the first day. In few months all the anesthesiologists at that hospital liked the technique. CSE (combined spinal-epidural) became the standard of care on that labor hall.

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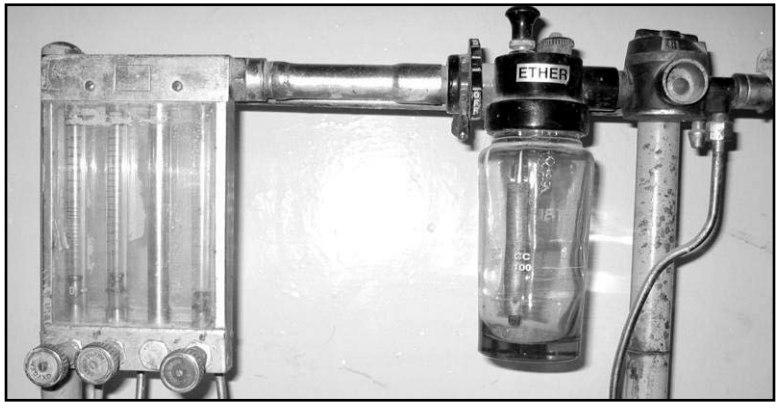
Practice Makes You Perfect

At Thomas hospital the anesthesiologists apart from doing supervision had to do cases on their own i.e. without the help of CRNAs. The practice at CAMC was such that we never had the luxury of sitting in one room and taking care of one patient. However doing cases on your own was not that easy. I had to relearn anesthesia machine, charting and equipment again. It was not difficult on the OB. side and in main O.R. I relearned all the tricks from CRNAs like Alex, Debbie, Carol, Dee, Brenda, Craig and others.

CRNAs have special skills. Practice makes you perfect. I always respected their skills and many of my colleagues in anesthesia used to request particular CRNA for their own procedure. As an anesthesiologist I would prescribe a particular antiemetic drug but the CRNA



knew when to give it for it to work in time. After helping in couple of difficult intubation cases they all knew my expertise in the fiberoptic intubation and made sure I was around for such cases.

I will like to tell about the anesthesia machine here and in India. There are flow meters to measure Oxygen and Nitrous Oxide. In those days, in India the O2 flow meter on Anesthesia machines was on the left side and in American machines it is on the right side! The oxygen flow meter on the right side, last in the assembly is an improvement. If there is a leak in the system the O2 concentration will not be less than delivered if O2 flowmeter is the last one. I remember two occasions when I had turned the wrong gas off! At Einstein both the surgeon (Dr. Pasternak) and I noticed the blue color of blood and at Thomas the O2 saturation monitor helped!

After many years I was doing cases on my own and enjoying it. I was getting this chance just once or twice a week and the other time I was managing OB. and 1-2 rooms in O.R. We had to see the pre op. EKGs and I had to learn again how to read them. One technique I never tried and refused to do was the retrobulbar block for cataract surgery. This is an injection of local anesthesia behind the eyeball. I had heard of many cases of blindness with this procedure. The request to do these blocks is dying with vanishing old ophthalmologists. My speciality of interest was still OB. anesthesia and I was delivering best care with my combined spinal-epidural technique and enjoying the work.

Thomas was a small hospital and everyone knew each other by first name. There was a real family atmosphere and everyone worked for the patients. Dr. Kyer was a general surgeon. He was a good surgeon and a real "Red Neck". In his free time he had traveled all over West Virginia on his motorcycle and in his biker's jacket! His mother had many operations while I was working at Thomas. She always requested me, not to do her anesthesia but to start her I. V. Once I remember going to hospital just for that, though it was my day off.

PRACTICE MAKES YOU PERFECT

I worked at Thomas hospital for 7 years before I retired from anesthesia practice. The group accommodated me in every possible way they can. I worked alternate weeks, 2 days a week and at the end 1 day a week! When I retired I was 69 years old. It was hard to give up what I did and practiced throughout my adult life. Fortunately Dr. Ramakrishna's teachings of detachment prepared me to be able to do that.

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Some cases to remember!

Dr. Smart was an orthopedic surgeon at this hospital. For his shoulder arthroscopy cases he used to inject local anesthetic (Marcaine) with epinephrine. He used to inject about 50 ml. of the solution in the shoulder after the patient was asleep. The dose of epinephrine was too high, 1 mg or 1000 micrograms. The golden rule for infiltration block is no more than 150 to 200 micrograms of epinephrine. I had discussed this with him but he had heard about this in some conference and would not change his practice. Epinephrine produces vasoconstriction and that helps in visualization of tissue with scope. I was not very comfortable with this practice and avoided his cases.

That was the first case in the morning. An 18 year old girl was having shoulder arthroscopy for athletic injury. Linda, one of our senior anesthetists had given general anesthesia. The technician injected the shoulder capsule with the mixture and within a couple of minutes the EKG showed ventricular fibrillation and we could not resuscitate the patient. The local anesthetic mixture had gone into wrong space, intravascular. OB. anesthesiologists knew about this since 1975. Marcaine gets fixed to the heart muscle and it's very difficult to resuscitate these patients. The large dose of epinephrine made the situation worst.

When I was resident at Einstein, I had to document every anesthesia incidence (complication) such as damage to teeth, lip injury, failed spinal,

etc. and submit that to departmental mortality/ morbidity conference. I continued that routine in my private practice. Short time after the complication I wrote down the summary of events. This helped me 2-3 times when called in for deposition. Here is such a case from one hospital.

Jan. 16, 03 Note on Baby Angel.

It was Friday Jan. 3, 03. I had some free time around 3pm as the work in OR was getting under control. Dr. Cochran had posted a case for C-Section around 4pm. Before going home I decided to see the patient and make pre operative round for Dr. Harvey who was on call.

The patient was in room No. 100. She and her husband were quite nervous. She was referred to Dr. Cochran because for the last 2-3 weeks the baby was not doing well (low biophysical profile). I asked her a few questions and explained to her spinal and general anesthesia. She signed the consent. I had noticed that her airway was slightly difficult (anterior larynx). Her I.V. was not running well so I restarted it on her left side and opened it for hydration. Her husband was quite supportive.

As I was leaving the OB. floor Dr. Cochran walked in and decided to go ahead with the operation. The fetal heart tracing was not looking great. The main O. R. was informed and nursing team was called in to get the O.R. on OB. ready. Dr. Cochran went to office and requested the nurses to call him when we were ready (Surgical count, etc.) This was not a stat C-Section. Within next 15-20 minutes the patient was moved to O.R. She had spinal anesthesia. Patient's husband and Susan supported the patient during insertion of spinal needle. After spinal I did the left uterine displacement and gave O2 by mask. I do not remember having any blood pressure problems. No unusual situation. There was lots of amniotic fluid. On birth the baby did not cry. Dr. Andrews (neonatologist) did the resuscitation. Apgar scores were low. No tone and gag reflex was negative.

I did talk with Dr. Cochran and Dr. Andrews and Mr. Angel. Umbilical cord blood gases were fine!

This was result of chronic injury--intrauterine asphyxia

Baby was improving.

I hope and pray the baby will do better.

6-9-03 ---Today on Oprah the topic was Miracles--- this was about newborns and how Doctors work hard to save them. This show reminded me of baby Angel!

I used to make notes like this on cases whenever the outcome was not good. As time goes by you tend to forget the events and the details. As I have said before this helped me in 2-4 depositions.

Early 1990s there were two huge malpractice judgments against physicians in West Virginia.

Dr. Bhatt was a well trained senior obstetrician well versed with all the techniques in obstetrics including forceps delivery. Only problem was that he did not change with the changing concepts. When society of obstetrics and the obstetrician in town moved away from forceps delivery (a possible cause of brain injury to the newborn) he continued that practice. One of the newborns he delivered was mentally retarded and there was a judgment of over 10 million dollars against him. The plaintiff's lawyer just had to prove that the injury was possible because of forceps delivery. I do not know how he survived that. The plaintiff couple had their second baby after a few years by C-Section. I was the anesthesiologist and Dr. Smith did the operation. Unfortunately this baby also had the similar abnormal facial features (Down's syndrome). By now Dr. Bhatt had already stopped practicing. Justice is blind!

The other case involved one anesthesiologist. Dr. Dee was again a well

trained physician and used to work with me at this hospital. She was an excellent anesthesiologist and was anesthesiologist of choice for many physicians and nurses. At that time the cardiac program was very busy and the anesthesiologists working there were complaining of overwork and fatigue. Dr. Dee decided to help them and started spending some time at the cardiac center. This is one of her cases. The patient after open heart operation developed a tic, a constant chewing movement of the mouth. This was in all probability a result of microemboli from the pump. However the plaintiff's lawyer found a reason to blame anesthesia. During bypass the CO2 tension in the blood was low. The low content of CO2 produces cerebral vasoconstriction, reduces brain blood flow and results in hypoxic brain damage. However, as I recall, the CO2 tension was nowhere near that dangerous level. The lawyer just had to prove that was possible and "won" the case. The only good thing about all this, we did not lose Dr. Dee. She is still practicing at that hospital and helping her patients. She is the anesthesiologist of choice for many.

Bob and I many times discussed retirement. I used to tell him that I would like to retire before I have a case against me. Bob's response was "When you want to retire? Tomorrow? You may have that case this evening!" He was very correct. Let me tell you about my last epidural!

John Dew was anesthesia technician at this hospital. He and his wife Mary had requested me to do their epidural. I had completed my last day's work at this hospital. That evening John called me and informed me that his wife would be admitted for induction of labor next day and asked if I could be there. I decided to work one more day and went to hospital next day morning. Dr. Harvey was surprised to see me but was happy to have few extra hands. I did Mary's epidural and it worked well. OB. was busy and I did a few more cases. Mary's labor was progressing very well and she was almost fully dilated around 3pm. Soon after I left the baby was born and had a vigorous cry. However when Dr. Patchell clamped the umbilical cord, the baby turned blue and had

to be intubated. I think one of the nurse anesthetists helped. They had to transfer that baby to Pittsburgh. For weeks the baby was on ECMO (extra corporal membrane oxygenator). The diagnosis was primary pulmonary hypertension! That day I did call Mitchell in anesthesia office and made sure I was officially working and I had insurance coverage. I visit Charleston often and when I visit this hospital John always talks about Lotus. She is growing fine!

36

Part Time Job! And Pranayama

Yogic and "Anesthetic" Breath!

I worked at Thomas hospital for about 7 years. My job there was part time. I was not doing any night calls. For anesthesiologist part time job is a misnomer. Before coming to Thomas I was working 70-80 hours a week. That was like having two jobs. Now at Thomas I was just working about 40 hours a week. Now I was finding enough free time particularly over the weekends. I could go to Satsang regularly and jog few more miles every week.

I had passed my anesthesiology boards in 1978. American society of Anesthesiologists had started re-certification examination and the society was encouraging members to take the examination as a proof of continued medical education. I was exempt from taking the examination because of grand father clause. But I had time and decided to take the examination anyway. I did go for one written examination course in Chicago. The examination was easy. There were 250 multiple choice questions and I was required to answer any 200. I was the only re-certified anesthesiologist in West Virginia at that time.

During 2000-2001 Shaama was staying in Westford, MA, with our twin grandchildren and I was traveling often between Westford and Charleston. One day I met Dr. Richardson. He was a dentist practicing in Hawaii. He was going for his Yoga training and talked a lot about his

teacher and the program. He gave me one Yoga magazine. I had found something more to do in my free time.

As a child in Wai, India I was introduced to Yoga. I knew sun salutation and I had mastered headstand. However at that time it was just play for us children. Now I was 65 and looking forward to the retirement years. I knew studying Yoga would be good for my body and mind. I called the center and registered for a ten day course. The center did send me a few books to read and a CD on Yoga which helped me to prepare for the postures.

The Yoga classes were held in Zen center in Warwick, Rhode Island. There were about 25 students with me. We all lived in the monastery with common restrooms. In those 10 days I again learned how little we need to live comfortably. I slept on the floor in an 8'x6' room. The program kept us busy from 7am to 7pm. The main hall in the monastery had huge statue of Gautama, The Buddha on a high platform and it was almost magical to spend all this time in his presence. At the end of the course I learned if I did one more 10 days retreat I would get level 1 Yoga Teacher's certificate. After few months I was back at the monastery to do more.

I am not going into details of Yoga theory and how it helped me in my life. I just want to mention the practice of 'Pranayama' breath control and its closeness with the various ways anesthesiologist controls patient's breathing. You have to experience it to believe this closeness and similarities! Here are some examples:

Maybe it is Amrit Desai at Zen center or Diane Eastwood at Village at Stone Ridge, every Yoga teacher starts the Pranayama instructions with COMPLETE YOGIC BREATH. The usual instructions are about complete inhalation and exhalation. The inhalation should fill the belly, lower chest, mid chest and then the upper chest under the ribs. The process should be smooth and complete. Similarly the exhalation should

empty all the parts of this breath starting with upper chest to abdomen. Notice the pause at the end of each inhalation as well as at the end of exhalation. The breathing should be like a slow wave rising and falling.

This reminds me of Dr. Utturkar and his instructions of keeping a close watch on patient's breathing: You should always watch the patient's breathing. Even with the ether screen keep a close watch on breath. Push those surgical drapes a little. Still you cannot watch the chest; use a chest piece! The inspiration should be full and the upper chest should rise. Anesthetic agents depress the respirations and tidal volume. Sometimes you have to help the patient by squeezing the bag (assisted breathing). Similarly expiration should be complete. If not, look for the obstruction and remove it. The breathing tube may be kinked. I still remember those instructions vividly.

With Yogic breath the advantages are increase in the amount of air breathed and better oxygenation. You become calm, use less energy for breathing and the rate of breathing slows down. This all is also true with "**anesthetic breath**."

There are other techniques of Pranayama and I was amazed to see how these various techniques support modern day respiratory physiology and airway treatment. Let us examine a few more Pranayama techniques.

Ujjayi-Ocean sounding breath--- With this technique you breathe through the nose. Let the breathing be slow and regular. Once you have established the rhythm close the glottis a little. This will make that ocean sound while inhaling and exhaling. This will allow you to increase the time for both inspiration and expiration.

This kind of breathing helps asthmatic patients. When air is moving slowly it can fill the alveoli (air sacs) and also the alveoli can empty easily during expiration. The airways do not close! In modern ventilators there is a function known as PEEP--positive end expiratory pressure.

That is what the ocean sound does! Again we can prolong and shorten the breathing phases, increase or decrease the air flow mechanically with the ventilator. In Yoga this is done consciously!

Kapalbhati--In this technique, the expiration is achieved by forcefully contracting the abdominal muscles and emptying the lungs through the open mouth. The filling of lungs is totally passive. The principle is used perfectly in creating "Iron Lung" for patients paralyzed with polio as an artificial means for breathing. The modern day CPR (cardiopulmonary resuscitation) is also based on these principles. The pause at the end of inspiration and expiration also helps in improving venous return!

Anulom Viloma--Alternate nostril breathing--You breathe out and breathe in through one nostril and then repeat the process through the other one. This has effect on right and left side of brain. I used to ask patients to breathe through one nostril and then through the other one. I used to select the side with easy breathing (no obstruction) for nasal intubation or passing a feeding tube!

During the retreat every day all of us with our teachers used to sit in front of the Guru of Gurus, Gautama the Buddha and pray for his guidance. We were from all walks of life, doctors, nurses, teachers, homemakers and others, all with the same goal of understanding the purpose of life. I had heard and recited this prayer before. Now for the first time the meaning of the words was getting clearer; I could look beyond the words with better understanding and clearer insight. This experience gave me the awareness I much needed.

Take us from unreal to real
Take us from darkness to the light
Take us from death to immortality
OM Peace! Peace! Peace!

37

Concentration–Key to Success

Those prayers in front of statue of Buddha and memories from Zen center brought new meaning to my every day work. I was more relaxed at the work and appreciative of work others did. I had realized what great opportunity I was given in my profession to help others and I had more energy to do more. Everyone expects reward for the service rendered. I was not different. Every working I.V., every successful spinal, every mother in labor with a smile on her face because of my epidural was making me happier. I saw my reward in that success.

Dr. Shantaram Deodhare is my brother in law. He was also my pathology teacher in medical school. He taught me to use microscope and see things clearly. "Just concentrate on what you see and the picture will get clearer." In the beginning when I started doing epidurals all the time I was aware of everything in the room. The patient, her husband watching my every move, the obstetrician waiting impatiently for me to finish, the OB. nurse, the next epidural patient waiting for me, the possibility of something going wrong and patient suing me and on and on. Over the years the picture changed. Yes, I still worried about all these things and people but not while doing the procedure. Now I started feeling and seeing only what I was doing at that moment.

I had learned to be in the present! Now I was feeling the needle passing through the different layers of the tissues, the change in the resistance and that increased resistance as the tip of needle would pass through

that last thick ligament, and mentally seeing it. I could feel and 'see' the small pencil point needle pressing on the wall of the sac (Dura) holding the spinal fluid inside and then piercing it. I could feel and see the epidural catheter pushing the dural membrane and making its way in the epidural space and resting in its place. This was the power of concentration. I was relaxed, quicker and less stressed. I had more energy to do more.

And with this energy I noticed other people working in the hospital. The patient care is not good just because what one doctor or nurse does. It is the aggregate effect. Appreciation of work develops respect and friendship. In that atmosphere work becomes a pleasure and attraction.

Here on labor hall I met Mike Fisher. Mike used to work in the department of plant operations as a carpenter. Everyone was happy when he used to come to labor hall with the work order and wanting to know what needs to be fixed. He was a tall gentleman with a big smile on his face. On labor hall we both used to visit often and do our crafts. At that time I had no idea Mike and I would be working on a project together, the project I am very proud of.

38

Dream! And It Will Happen! Story of CSE Model

I did my first epidural with Dr. Utturkar. The patient was for open cholecystectomy. The patient was severely jaundiced, dehydrated and because of emaciation I could see his spine, ribs and all the bony landmarks clearly. The patient was on lateral side. I put the big 18 gauge needle little higher in the thoracic region. When the needle was in place Dr. Utturkar put a small drop of saline in the lumen of the needle near the hub. The drop was hanging from the hub. (This is called the hanging drop technique.) Now he asked me to advance the needle slowly mm by mm while keeping eye on the drop. While inserting the needle slowly I could feel the increased resistance of the tissue. And suddenly there was no resistance {loss of resistance (LOR) sign} and simultaneously I saw the hanging drop being sucked in the lumen of the needle. Astonished I looked at him and with his approval injected a small dose of local anesthetic through the needle. He asked me to wait for few minutes, took patient's blood pressure and checked for response to pin prick and after few more minutes I injected more medicine and removed the epidural needle. Dr. Mehta, professor of surgery at Sassoon Hospital, Pune did the operation. That day my first thoracic epidural worked very well and I was impressed with the technique. However I knew it was not my skill but my teacher's constant observation and instructions that did the job. At that time we did not have ready made trays or the epidural catheters and we had to gather all the things necessary for the procedure.

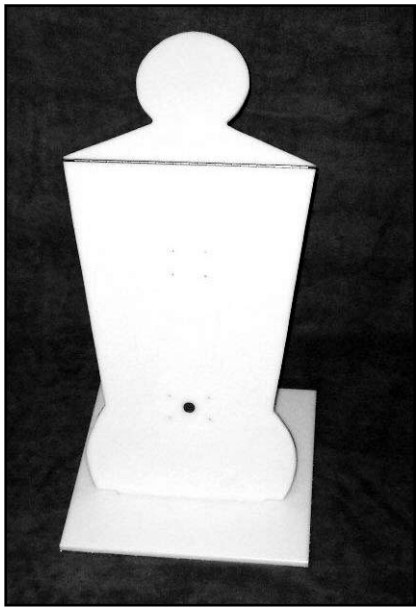
Epidurals were not popular with the surgeons as it took time to do the procedure and anesthesia to set in. Spinal anesthesia was quick and safer. Over the years I did epidurals only when it was absolutely the best option for the patient, when I thought general anesthesia will do more harm.

I was in second year of residency and doing rotation on OB. Floor at Einstein. The story here was different. Now epidural was the choice of pain relief in labor and Dr. Gertie Marx, one of the best teachers in regional anesthesia was there to teach. I quickly learned that working and doing epidurals for laboring patients was very different from epidurals for surgical cases. This was emergency work! The expectant mothers were in pain and they expected quick pain relief. The technique of hanging drop was not going to work here. The technique used was that of loss of resistance. A glass syringe filled with air or saline is attached to the hub of epidural needle and the needle is slowly advanced through the ligament with pressure on the plunger till you get the loss of resistance. This indicates that the tip of epidural needle is in the correct space (epidural space). It was hard for these patients to stay still with those contractions and sometimes you had just a couple of minutes in between the contractions to do that epidural. Here I was not isolated as in the O.R. As Anesthesiologist I had to deal with patient in pain, OB. nurse and patient's one or two relatives. Practice makes you perfect. With the help of senior residents and time I learned the technique and tricks of the trade and soon started liking the work on OB. floor. For my subspecialty year I chose OB. Anesthesia for 6 months. Working with Dr. Marx was also an added attraction.

I finished my residency and started working in Dr. Orkin's department as a junior attending. I was in charge of OB. anesthesia in college hospital and apart from clinical work I started teaching residents. This was a role reversal for me and I soon realized how difficult teaching can be. As I have described above the atmosphere in labor room is very different from O.R. Comments like "Not that space, choose the

space above. You are going too fast, slow down a little. Are you sure about loss of resistance?" were quite disturbing to the patient and the husband. I thought someone must develop a model so residents could learn about loss of resistance before trying that on the patients.

To teach this feel of loss of resistance people had used raw bananas or potatoes. This was not close to the real thing. One day I saw the dried silicone on the window seal in my house. The feel of it gave me the idea of using this material and I poured a lot of liquid silicone on a wax paper. It took months for the core of this blob to solidify. Now I could hold this blob in hand and push the epidural needle in. When the tip of the needle exited on the other side the loss of resistance was very realistic. Dr. Orkin did play with this and was impressed with the feel. I used this to teach my residents. Soon after that in May 1981 I came to Charleston and started my private practice. From time to time I remembered about this blob and still wanted to develop the model.



Now in 2005 I was doing a part time job at Thomas hospital and had lot of free time. I again started thinking about this model. There was an added element to the ideal model now. I wanted to develop a teaching model for epidural, spinal and the same should work for the combined technique. I wanted the students to have the same experience as in clinical practice except that they would be working on the model which will not move or complain! They should be able to learn how to choose the interspace, numbing injection to skin, holding the needle, feel of loss of resistance, feel of Dural puncture, threading the epidural catheter and each

and every step they have to perform with the patient.

One day the design was ready. It was a silhouette of female back mounted on a base plate. It would look like a patient's back when dressed with the gown, cap and abdominal binder. The lumbar area will be covered with a cautery pad to give a feel like skin. The students would be able to feel the interspace. The silicone filled pipe would work as interspace and can be replaced easily. There would be a latex tubing filled with saline which will mimic spinal fluid. The design was a perfect duplication of clinical experience. I was excited.

I had the design now and I was searching for someone to make it a reality. I was advised to search for such a person in the plant operation department of the hospital. I saw the in charge person Mr. Farley and explained him the nature of help I wanted. "I think if anyone, Mike will be able to help. He is very good at stuff like this." I knew Mike Fisher. So one day I explained Mike the help I need. With patient's permission I showed him how I do epidural from feeling the correct space to inserting the epidural catheter and taping it. I wanted to be able to duplicate each and every step on the model. He was ready to give it a try. I gave him the design, the diagrams and the silicone filled pipes. He promised he will get back to me. That was November, 05. I did not hear from Mike for next 2 months though we used to see each other in the hospital frequently. I presumed he was busy with holidays, Thanksgiving, Christmas and New Year! Soon after New Year's Day Mike came to O.R. and asked me if I had time to see the model. It was exactly what I was dreaming. We arranged the model on the table. I brought a combined spinal -epidural tray and did the whole procedure on the model. It worked perfectly. I invited Dr. Hall and Dr. Neal to try and they both were impressed. Next few months Mike and I worked on the model and did some improvements. We were a perfect team. Sometimes West Virginians had difficulty in understanding my English because of my accent but Mike had no problem. I never had to repeat myself. We both had equal interest in developing a perfect model and

we did. One day I was working on labor hall. Everything was O.K. with the model except I was having lot of difficulty in removing the epidural catheter from the hardened silicone pipe. Joe Allen Dean (CRNA) saw that and suggested I should lubricate the catheter before threading it in the epidural space. Her suggestion worked great. When you are living right you never know how the help will arrive. Before marketing the product I had to test it and at Thomas there were no CRNA students. I called Dr. Tim Nelson and asked if I can work with them just 1 day a week. From next month I started working at W&C labor hall on every Tuesday and on Thursday I used to go to Thomas hospital. Those who know the hospital politics will find this very unusual. However my colleagues in both the hospitals knew my interest was only in clinical work and they were eager to help. I was the only anesthesiologist working with both the groups!

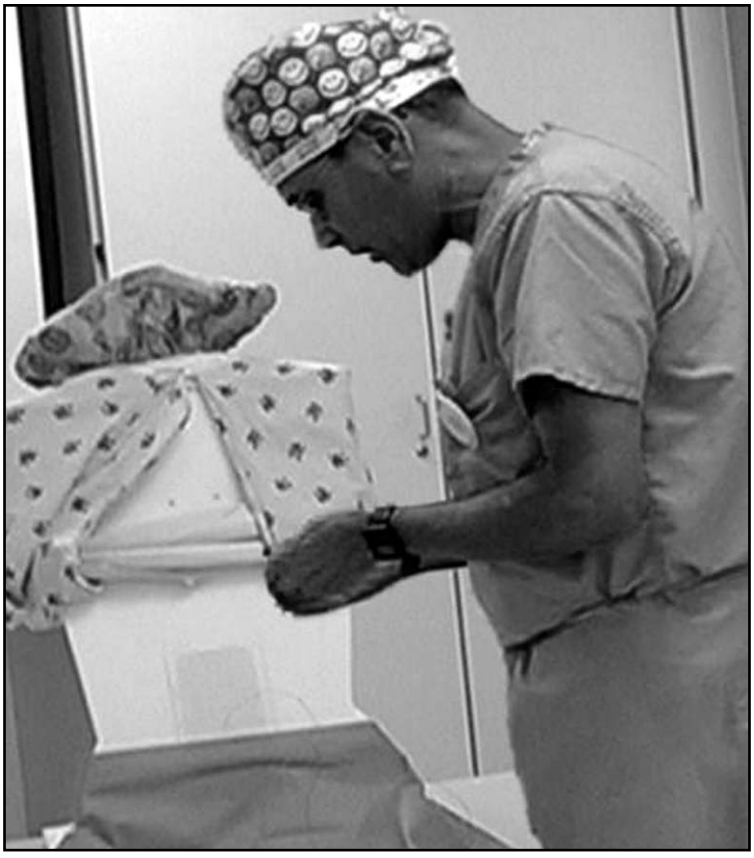
The CRNA students found the model very useful. I kept the model in work room and students were working on it on their own when not busy. They thanked me at their graduation. Now I had tested the model and it was ready to go on the market. Mike's wife Trish took the responsibility of marketing.

When I used to attend the New York Post Graduate meetings the scientific exhibits were the main attraction for me. I had spent many hours there reviewing the posters and visiting all the booths. I always wanted to invent something and have my own booth. In April 2006 that became a reality. There was Society for Obstetric Anesthesia and Perinatology (SOAP) meeting in Hollywood, Florida. I had my own booth and I was showing my CSE Model to Obstetric Anesthesiologists. The response was good. Dr. Gerry Bassell (He was resident at Einstein with me) was at that meeting. He liked the model and gave me some suggestions on marketing, price, etc. In a few days we received our first order. That was Gerry! Dr. Bassell was well known at SOAP and became editor in Chief of Obstetric Anesthesia Digest after Dr. Marx. Next year I took part in workshop in SOAP meeting at Banff, Canada. I met Dr.

Krzysztof M. Kuczkowski at that meeting.

Professor Krzysztof Kuczkowski will always remember our first meeting. I was conducting my CSE workshop for the first time at Banff SOAP meeting. The scientific section organizer, Dr. Vasdev, had requested couple of people to help me during that workshop. I had 3 stations arranged for the demonstration. A tall well dressed gentleman came in room and said he was going to help me during that work shop. His jacket was decorated with couple of badges and it was very obvious that he was important person from SOAP organization. I did not expect person of this stature was going to help. I told him that he was in wrong room! Krzysztof came back after 5 minutes and insisted he was correct. I realized my mistake. He took charge of one station and I could see his excitement while working with the model. He was seeing the model for the first time and loving all that it can do. Later I learned his interest in combined spinal-epidural technique. A year later we teamed together and conducted the CSE workshop at Jakarta, Indonesia.

I must have started this project on an auspicious day! I got all the help I needed and more. I do not know about auspicious day but my thoughts behind this model were very noble. I knew if the model is perfect that would make teaching and learning regional anesthesia easy. This in turn would improve patient care. This was my Guru Dakshina (repaying to teacher) to my teachers.



Our CSE Model is ready for use! You can see the complete description of the procedure on our web site www.csemodel.com.

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Retirement

Every beginning has an end and so did my career as an anesthesiologist. The physicians in the hospital Dr. Arceo, Dr. Maxson to name a few were retiring and my friends were asking me about my plans. Once I told Bob that if retirement means easy living, less worries, financial security and enjoying life I retired long time back when I came to America. Working conditions and life in general were very easy here. I never thought of early retirement. To me that was waste of time. Where else I could have been that helpful to others and enjoying what I was doing at the same time? But now I was 69! I could not keep up with Eric and others. I was getting tired even after 8 hours work. So it was time to retire. It was hard to give up what I did for last 40 years but Dr. Ramakrishna's teachings and guidance helped. He always stressed the importance of doing the job right and moving forward, the practice of detachment. I was ready for the new adventure.

Fortunately for me I had enough to do after retirement. I had my CSE Model to develop and market. And I was able to continue my interest in Yoga. The building we were living in (Puja Mandir) we donated to a church in Cross Lanes. We left Charleston on April 11, 2006. I remember that day as it is Shaama's birthday. The same morning my letter appeared in the local newspaper, The Charleston Gazette. To some extent this will summarize our feelings.

OPEN DROPS TO OPEN HEARTS!

THE CHARLESTON GAZETTE
Charleston, West Virginia
April 11, 2006
Reader's Forum

Anesthesiologist leaves with thanks.

Editor

I am leaving Charleston after working here for 25 years. Thank you for giving me this opportunity and accepting me as your Obstetric Anesthesiologist. I always felt that I had the best job in the town. We also had a unique home, an old church on Roosevelt Avenue. We will miss our evening walks, the fig tree and our friendly neighbors.

I am thankful to General Anesthesia Services for giving me a chance (twice) to work at Women and Children's Hospital's Labor Hall. It would have been impossible to do this good job without the precious help of wonderful and dedicated certified registered nurse anesthetists and nursing staff at CAMC and Thomas Memorial Hospital.

I always felt my epidurals worked better. I did put something more into it. I did them with love and compassion. With every working epidural I made a deposit into my account of good deeds. May Charleston always have working epidurals, smiling mothers, crying newborns and Obstetric Anesthesiologists willing to work day in and night in.

Namaste, we honor the goodness within you.

Yours epidurally,

Dr. J. also known as Gandhi, Epidural Express, Working epidural, Recently Dr. Tuesday
and now for Social Security,
Shreeniwas Jawalekar

40

Amazing Open Hearts!

These open hearts have nothing to do with open heart surgery, though at one time I was impressed with the membrane oxygenator and all the monitoring that went along with it. These open hearts are the ones I met from my grade school in Wai to my adult life in Charleston who taught me basic values in life. Many times we take credit for all the wonderful things we have done or happened to us and forget the real people behind the success. These are my teachers. Without their instructions, teaching, love and constant encouragement I will not be here.

Dada Patwardhan

Dada Patwardhan was my grade school teacher in Dravid high school, Wai. He was a small frame man barely 5' tall, in his fifties. He was always dressed in Dhoti (a white cloth wrapped around waist), a full shirt, a coat and a black cap. He used to teach us English and Math. I was never a front row student but his class was an exception. I listened to his each and every word from beginning to the end. With his clean pronunciation and clear thinking he

convinced me that I could do better and in his eyes I saw the confidence he had in me! This was 1952-53 period. At that time we did not have parent teacher conferences. There was no need. That teacher was my guardian and well wisher in the school. At that time teaching was not just a job. It was a calling! They used to teach open heartedly and were happy to see the progress of the student and saddened by their failures. I had tremendous respect for him. He was my Guru (Great teacher). My only regret is not seeing him after I became a physician. But I am a big believer and one day I will meet him. He taught me the importance of hard work now, so you can enjoy tomorrow.

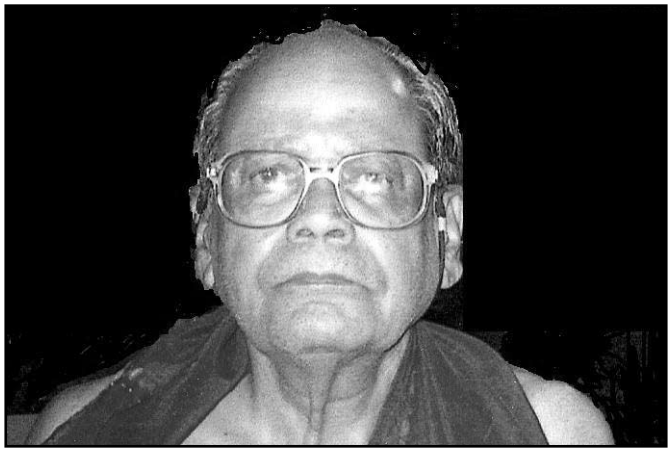
My next Guru is Dr. Utturkar (1963-64). He had just a few things at his disposal. Two anesthesia machines, couple of laryngoscopes, ethyl chloride, ether as anesthetic agents, few endotracheal tubes and few needles. But he taught from his experience and example. I learned importance of punctuality, simplicity and vigilance. Most of all he taught me the art of Anesthesia.

Col. G.C. Tandon was my next open hearted teacher (1966-69). I have yet to see a department of anesthesia so well organized for teaching. With opportunity to do animal experiments, writing papers, doing research, conducting seminars the department was geared towards producing teachers. I still see him in his office and as soon as you enter saying "Hanji!" meaning Welcome! What can I do for you? And meaning it. He taught me Science of Anesthesia at the All India Institute of Medical Sciences!

Dr. Gertie Marx was well known as mother of Obstetric Anesthesia when I met her at Einstein (1975-80). Because of her, epidural anesthesia became an accepted technique for labor pain relief. Apart from Obstetric Anesthesia she taught me compassion for the patients.

We met Dr. Ramakrishna in Charleston, a gentleman, scholar, priest and our Guru! Through his Satsang programs I revisited Bhagwat

Geeta, Ramayana and Vedic scriptures. He taught me how to enjoy working and how work is worship. I learned from him importance of friendship and respect.



1927---2007
Dada, my Big Brother

My salutations to my Gurus and great souls in my life will not be complete without mentioning my Dada (Big brother). I lost my father when I was 2-3 years old. Dada was 13-14 years old at that time. He took an oath to look after his brothers and never forgot it. Without him I would have vanished in India's poverty, malnutrition and drought. He and my sister in law made lots of sacrifices to educate me. He always said if you believe in something it will happen.

I lost Dada in September 2007. I was with him during those last days. He was not afraid. He was a firm believer of the path he was going to travel after his death and see our beloved father and mother in Pitru Loka (home of ancestors) as described in Vedas. He had a strong belief that was going to happen. I also believe in seeing my teachers one more time and expressing my gratitude.

I call my teachers open hearts because they gave their all without reservations. Teaching was their passion and students their pride. They gave

with multiple hands and I collected whatever I could with my right and left. There is an old tradition in India -- Guru Dakshina-repaying the Guru for the education you have received. What they preached I practiced to the best of my abilities. The regional anesthesia teaching model I designed is my guru Dakshina to my teachers.

These great teachers, open hearts, were planted for me on the path of this wonderful journey. I was lucky to stop near them, get education and some wisdom and move forward!

Anesthesia Mishaps

In memory of my friend

Dr. (Prof.) V.A. Punnoose

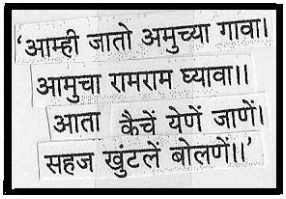
1935—2008

Professor and Chief of Cardiothoracic Anesthesia AIIMS

1935–2008

Best Anesthesiologist, Best Teacher and my Best Friend at AIIMS

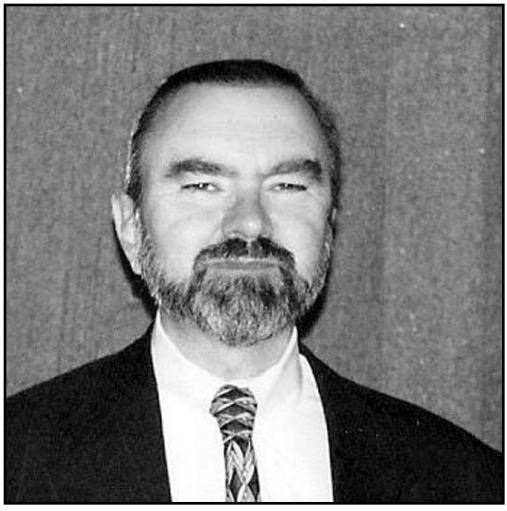
In his smile I read the words of Saint Tukaram
(Sant Tukaram, State of Maharashtra India):
"Today it is time for me to go to my hometown. Accept my greetings and well wishes. Now we will not have those frequent meetings and the small talks we used to enjoy. Take care!"



Sant Tukaram

41

Bob and I: In his words!



Dr. Robert T. Westmoreland M.D.

Thirty years ago I was one of five fellowship-trained obstetrical anesthesiologists working in an academic department, teaching the finer points of obstetrical anesthesia to registered nurses in the school of nurse anesthesia, medical students, residents, and fellows. For reasons which now escape me, I decided to chuck it all and go to a place which was unfamiliar to me at the time, start over in a private practice situation and build a department where none had existed. I joined two cardiac anesthesiologists, who had no interest in obstetrics, and set about to provide coverage for an OB department which provided services for about 5000

deliveries a year. What was I thinking? I decided to adopt the attitude of one of the two cardiac anesthesiologists, who famously said "If they can find me, I'm on call. If they can't, I'm not". Of course, such a cavalier attitude only works for a little while. My new-found friends on the OB floor were very gracious in allowing me to disappear in order to rest and recharge my batteries on a regular basis; but, epidural news travels fast and far, and soon patients were getting their hopes up for experiencing one of those "epidermals" they had heard so much about.

The department which I had joined was woefully inadequate to provide this service around the clock, so I decided to cast about for help. Imagine my surprise when, one fine day on the Labor Hall, I was called to the phone to take a call from the first (and only) response to my plea for help. "This is Dr. Jawalekar, and I am interested in coming to Charleston to join your department" a lilting and highly accented voice told me. He said he was at Albert Einstein in New York City. I instantly recognized the home of Gertie Marx, whom I had met years ago when she visited my residency program in Atlanta. "When can you get here", I excitedly asked, and he told me he was available immediately.

Of course, I had no way of knowing that Dr. J (Niwas, to his family and friends) would become a firm building block of our fledgling department. He was, to me, an unknown quantity, but a most welcome addition to our group. I took him on faith, and it paid off. Since that time, the OB anesthesia subsection has grown to six regulars assisted by two or three others capable of covering the service as needed. Of all the doctors who have joined the group, most are still hard at work. There have been two or three who came and went, and Dr. J has retired. I decided that 26 years was long enough to do OB anesthesia. I got a lateral transfer to the Big Hospital in our medical center and reinvented myself as a generalist, covering everything but cardiac and neurosurgical cases.

In reading Dr. J's manuscript for his book, I recalled with fondness all his anecdotes, and appreciated them anew as stories seen through his eyes. I realized that the "open hearts" in the title were those people who played

pivotal roles in fashioning this extraordinary anesthesiologist. During his tenure in our department, his work ethic, his relationships with peers and others with whom he worked, and his position in the larger community were influenced by those "open hearts". His journey from a small village in India to the present day has been a product of the many wonderful and talented people who taught and molded him into a citizen of the world. His story is remarkable, memorable, and enjoyable; I count myself fortunate and lucky to have shared some of this story with him. He had a positive influence on me and my colleagues, and on the practice of OB anesthesia in Charleston, WV. Now, he has expanded his influence in at least two ways: he has written this account of his life in the specialty, and he has designed a tool to make the teaching of epidural and combined spinal/epidural administration something that can be done in sheltered safety away from the tense situation of the live patient in active labor, with husbands, boyfriends, other family and friends watching anxiously while the professor helps the novice learn the craft. His epidural simulator has been shown nationally and internationally, and the US military has bought a number of them to be used in their teaching programs.

My wish for Niwas is that his influence will continue long after those who knew him personally have passed on into the Larger Life. By writing this book he has chronicled his journey. He will not soon be forgotten by those who worked with him or by those on whom he worked his pain-relieving magic. Now you, the reader, can share in his inspirational story; and those who benefit from his teaching tool will carry his influence with them every time they perform an epidural or a combined spinal/epidural on some frightened patient experiencing the pains of labor or the fearsome ordeal of Caesarian section.

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Anesthesia Mishaps

From open drop to modern day anesthesia practice there has been tremendous improvement in the anesthesia delivery system and monitoring. Modern anesthesia machines, their fail-safe oxygen delivery systems, new anesthetic agents, new narcotics and muscle relaxants and modern monitoring systems with constant display of heart tracing, oxygen saturation and end tidal carbon dioxide tensions have all improved the quality and safety in Anesthesia for the patient. One thing has not changed. The person behind the ether screen! This is still a human being and prone to errors. To err is human! Though today's Anesthesiologist/Anesthetist is better trained and informed it is very hard to remove this human error factor. I met two professors at Institute (India). Dr. Yajnik would say "prove yourself useless, you will work less as no one wants you and you will have less complications!' Dr. Gode on the other hand was a workaholic and his attitude was "You work more; naturally you will see and have more complications." I preferred to work more and I had my share of anesthesia mishaps and mistakes.

This is not an attempt to write a chapter in anesthesia textbook on complications. There is no pressure on me to be concise and complete. There are no charts, statistics, figures and critics. These are simply the events that occurred in my clinical practice as I remember them now after many years. They are scattered from my early residency years to

my last years before retirement. These are the complications I have caused, seen, witnessed closely, participated in and heard of. I have vague memories about some of the complications and some I remember very vividly as if they occurred just yesterday. These are real stories from my life and I have tried to reproduce the events as clearly as I remember. At places I have changed the names of people involved and hospitals for obvious reasons.

The obvious reason is I have not taken legal advice on this. The statute of limitations varies from state to state and from countries to countries, from 1 year to 18 years. Really I am not that much worried about the statutes of limitations here. I know I will have to answer to higher authorities on Judgment Day and this will give me some practice!

I am hopeful that reading these stories will be equally interesting to medical and non-medical people. The stories will be of particular importance to anesthesia personnel. Once you witness or cause a complication it is hard to forget the event and the anesthesiologist changes the way he/she will perform in future.

During my residency at Einstein I met Dr. Hershey. He was a senior attending and was famous for his work on hemorrhagic shock. Whenever I worked with him he always insisted I put the cap on the pen as soon I finished writing and leave the pen with the chart. He was adamant about it. My seniors told me once accidentally his anesthesia student had injured patient's eye with pen point rather badly. I have already narrated some events and here are a few more.

My First Year of Residency

They do look alike!

This was 1963.

That was my first case in the morning. I think the patient was for a hernia operation. At that time the only monitoring was blood pressure

with mercury manometer and finger on pulse. The premedication was a shot of atropine in the arm for drying the secretions. I gave an injection of atropine in patient's arm. In few minutes the surgeon arrived. I checked patient's pulse before starting open drop technique. The pulse was thready and fast and his blood pressure was low. We decided to cancel the operation.

Now this was second patient on the list. I followed the routine with the same result, patient with low blood pressure and rapid pulse. We were puzzled. My senior resident turned to the anesthesia cart and checked the atropine ampule in the box. Someone had filled the box with ampules of adrenaline (Epinephrine). The atropine and epinephrine ampules looked alike. I was told to read what was in the ampule before drawing. Even today this is the common mistake. Manufactures have tried to correct this with different shapes to the ampules and colors to the labels. Still the old fashioned way is the best way-Read before you draw the medicine into the syringe and even that is not foolproof as I experienced later on in my clinical practice.

Limitations

I had finished 6 months training with Dr. Utturkar and he promoted me as a senior resident. Now I was more confident and walking little taller. I had more responsibility also. I was alone on call and was making my own decisions. One day early in the morning Dr. Nilu Kale knocked on my door. He had a female patient with intestinal obstruction. She was in very poor shape and we had to go for emergency operation. We went to O.R. The patient was wheeled in. She was very sick. She was in shock, low B.P., rapid pulse and in respiratory distress. That was my first time dealing with such a sick patient. That time investigations and blood work were limited to urine examination and blood count. I was sure she might die on the table. The next moment the senior resident in me woke up. I had all the answers for the difficulties I was going to face. If her blood pressure drops I was going to give her fluid and

start noradrenaline drip, for her breathing I was going to control the respirations, give more oxygen. If her heart stops we could do external cardiac massage and give intracardiac coramine (heart stimulant)! I started open drop induction. Her heart stopped in few minutes. Dr. Kukade, then Registrar in surgery, decided to quit. It was about 7:30 in the morning. Dr. Utturkar walked in. To my surprise he also could not do anything. That was my first experience of table death.

The whole room started spinning, the people, doors and windows. Somehow I reached a corner of the room and sat down. No one blamed me or asked any questions. That day I learned my limitations. I was just an instrument in His hands and He had the final say.

Mumbai (Bombay)

ABC of resuscitation--A is For Airway!!

The year was 1964. I was working at Mahatma Gandhi Memorial Hospital in Mumbai. There were 3 O.R.s and I was responsible for the surgical schedule in one of the room's everyday. That day while working in my room I heard that the anesthesiologist in the other room was having problems intubating the patient. This was a young patient with thyroid goiter and putting a breathing tube in such patients is very difficult. They must have tried for about 45 minutes. Suddenly there was a lot of activity. They called ENT surgeon and others to help. Our circulating nurse came with the news that the patient was in cardiac arrest. Repeated attempts at intubation had resulted in trauma to the soft tissue near the larynx. This must have led to airway obstruction and inability to ventilate the patient. They could not resuscitate the patient.

In 1964 we did not have LMAs (Laryngeal mask airways) or fiberoptic laryngoscopes. However we knew the danger of airway obstruction. You were not supposed to induce general anesthesia unless the airway was secured. The way to do this was with a little sedation, topical anesthesia to nose and pharynx and even the trachea (windpipe). These basic principles are still followed in difficult intubation cases. That time

we mostly relied on the technique of blind nasal intubation. The technique was very easy to learn. I used to select the roomier nostril. A well lubricated small size tube was passed in that nostril with patient's neck slightly extended. The patient was instructed to breathe through the nose and the tube was advanced while listening to breath sounds through the tube. If the breath sounds disappear pull back a little and re-advance the tube again. Often you could see the movement of the skin over the trachea as the tube entered it. This was a safe technique as the patient would be breathing all the time and there was no risk of hypoxia. However both the anesthesiologist and patient needed to have a lot of patience. I used this technique successfully in my practice for many years.

Vigilance!

Same year while in Mumbai I heard this case from the other hospital. The resident was working during the night. At that time we did not have ventilator in all the O.R. and even in cases lasting for many hours we used to hand- ventilate the patient. It seems this resident was very tired and fell asleep; no one was ventilating the patient. When she woke up it was too late. I have mentioned a similar case event during my residency at Einstein hospital in New York. Years after I finished my residency there the residents got together and forced the city to reduce working hours to avoid this sleep deprivation.

This reminds me about the seal of American Society of Anesthesiologists. The seal was designed by Dr. Wood in 1932! The motto is only one word-VIGILANCE! How true!

Cardiopulmonary Bypass

I first saw open heart surgery at Institute, in New Delhi, India. I had not seen so many machines and so much monitoring working for one patient at the same time. Dr. Gopinath and Dr. Talwar were the cardiac surgeons. They did mainly valves replacements at that time. I did

learn cardiac anesthesia with these surgeons. It was amazing to see how a quiet heart looked and at the end of surgical procedure how the heart rhythm came back and the normal circulation resumed. While the heart was not beating the impure blood from the body was drained by tubes to a heart lung machine.

The blood was oxygenated and returned to aorta (big artery) and from there to different parts of the body. We had to add a measured amount of an anticoagulant to the circulating blood so the blood will not clot when in contact with the tubings of the machine. We measured patient's temperature, blood gases, acid base status, electrolytes, blood pressure and blood volume. This all required a team of perfusionists, surgeons and anesthetists. We did put lines in the artery at the patient's wrist to measure the blood pressure (A line) and one in the patient's big neck vein to measure the venous pressure (CVP line) before or after the patient was asleep. There was constant communication within the team.

Once I remembered, at the end of surgery I was waking the patient from anesthesia. I gave I.V. medicine (atropine + prostigmine) to reverse the effect of muscle relaxant. In just a few minutes the patient had a grand mal seizure which lasted for few seconds. Dr. Gopinath and I both were surprised and looked at each other. That may have been the result of microemboli from the pump. I do not know. Overall my stay and training at Institute was uneventful.

Ether screen and Vigilance!

This story is from other major cardiac center. Dr. Tom Green was a senior anesthesiologist trained at a well known cardiac center. He mainly used to do cardiac anesthesia at this hospital. That day he had anesthetized a patient for open heart surgery for thoracic aneurysm. After much discussion the surgeons decided to put the patient on partial bypass. In partial bypass the part of the body below the aortic clamp

is perfused by the blood from the artificial lung. This prevents the hypoxic damage to the spinal cord and the kidneys. The heart is still beating and perfusing the head, neck and the viscera. The anesthesia team has to continue patient's lung ventilation for proper oxygenation of the blood.

Tom had recently bought a PDA (personal digital assistant) and was very proud of it. He was sitting in his chair watching the patient and playing with the PDA. Somehow, there was lack of communication and Tom thought patient was on total bypass instead of partial. The ventilator was silent. The blood was not getting oxygenated. After several minutes one of the surgeons saw the blue blood and the mistake was corrected. I do not know the final outcome of the story. I again remembered the words of Dr. Wood-Vigilance!

Anesthesiologist's definition of ideal height of ether screen! --- Low enough for him/her to see what the surgeon is doing and high enough not to see what the surgeon is doing!

A Case of Air Embolism!

Air embolism is air or gas entering the circulation. This can happen accidentally (scuba diving) or during medical procedures like C.V.P. catheter placement, cardiac bypass or laparoscopy. This can be extremely dangerous to the patient if it's >5ml/kg amount of air and also depends on how fast it travels in the circulation. Anesthesiologists see this complication mostly under general anesthesia and the usual signs are increased heart rate, fall in blood pressure and the earliest low end tidal CO2. I am going to describe here a very unusual case of air embolism when one day I started a peripheral I.V. The amount of air involved was about 20-30 ml (the length of unprimed I.V. tubing)! I have not forgotten the clinical picture of that yet!

At that time (1971) I was working at Mission Hospital in Miraj. That day in the morning I went to O.R. a little early as one of my friends

was going to have inguinal hernia operation. Dr. Limaye was about 34 years old and a lecturer in Pathology. We decided on general anesthesia. I always liked starting I.V.s. I took an 18 gauge needle and inserted it into his peripheral vein. There was good blood return so I connected the I.V. tubing and opened the clamp so fluid would start dripping. Suddenly I felt something moving fast under my fingers which were resting on his arm and holding the needle. That feeling was unusual. I looked at the I.V. tubing chamber and the fluid was dripping as usual. I adjusted the rate and cleaned the site. This all took couple of minutes. Dr. Limaye started coughing vigorously. The coughing was uncontrollable. He was perspiring and restless. He said there is something in his chest and he had to cough it out. Over the next 5-10 minutes the coughing subsided. He told me "Whatever you gave me through that I.V. made me cough." I told him what had happened. There was air in the I.V. tubing. Probably no one had run the fluid through the tubing and I did not check that. The amount of air embolism was about 25-30 ml. but that small bolus rushed in fast and produced these symptoms. I told Dr. Fletcher what happened. We cancelled his operation that day.

We anesthesiologists know the signs of venous embolism when the patient is asleep. Very few will mention about coughing. In my practice I did many regional anesthetics (spinals and epidurals) for C-Sections. I remember at least 2-3 patients coughing after the birth of baby. I always wondered if this was due to small amount of air entering the open veins in the surgical field.

Cases from Private Practice--Solapur

In 'Art of Anesthesia practice' (Page 45) I have described how I used to give general anesthesia in private practice. The only agents at my disposal were ethyl chloride and ether. Ether apart from being flammable was a very safe anesthetic with wide therapeutic ratio. Premedication was only intramuscular atropine. This is a story when once I deviated from that rule.

Premedication atropine only!

That day I was called to give anesthesia for laparotomy. I had some free time so I decided to see the patient before scheduled time. This was a young woman about 25-26 years and in pain. The diagnosis was acute appendicitis. I told the nurse to give her atropine and 25 mg of pethidine (Demerol) for pain. He said he would. After about 2 hours I was back to that hospital and started her anesthetic. It was difficult to take her deep with ether. As soon as the level of anesthesia deepened her respirations would slow down and the gas exchange will get less. Somehow with the help of bellows and EMO vaporizer I managed the case. At the end of the procedure, if I left her spontaneously breathing she became cyanotic and for a while I had to support her ventilation. I was puzzled about this.

The only different thing I had done was giving that small dose of Demerol. The nurse had given her 2.25 ml of Demerol, not 25 mg. This calculated to about 112.5 mg. That explained why her respirations were depressed. I realized my mistake and never deviated from the rule of premedication-atropine only with my open drop anesthesia practice.

Blindness after Cardiac Arrest!

While in private practice in Solapur I used to go to Upase Hospital quite often. Dr. Husain was a young energetic surgeon and he did many of his operations in that hospital. I used to like working with him as he was a very quick and neat surgeon. That day I had anesthetized a young boy with impacted urethral stone. He had that impaction for many days and was quite sick. Dr. Husain was closing the incision and suddenly I could not hear the heart sounds. With external cardiac massage, oxygen and controlled breathing we were able to resuscitate the patient. The recovery was good and we were happy about the end result.

When I saw the patient next the day, I was told that the child was unable to see. I do not remember the opinion of ophthalmologist but the child was discharged with prescription of multivitamins and other medicines. The relatives came back to hospital after about 3 weeks. They had some Pedhas (Sweets) for Dr. Husain and me. The child had started seeing clearly! I was happy that something worked the multivitamins, time or prayers!

A case of Hyperthermia!

That day Dr. Husain was operating on this 8 year old child with ruptured appendix. The patient had fever to start with. Half way during the operation I took his oral temperature. It was 108o F! I asked the OR. staff to get a lot of ice. Dr. Husain finished the operation quickly and we covered the patient with ice. I was surprised how the hospital staff could get all that ice within such a short time. I was told the ice factory was very near. I ventilated the patient with 100% oxygen.

After some time the cooling was working and the temperature started to drop. I stopped the cooling when temperature was about 103oF and removed the child from the ice to avoid further drift in the core temperature. I had done experimental work with dogs at Institute on 'Hypothermia and hemorrhagic shock'. That experience paid off. Dr. Husain and I were both proud the way we managed the case.

At that time O.R.s in Solapur were not air conditioned. In summer the outside temperature sometimes reached 110o F. Some OR.s did not have good ventilation and fans only circulated the hot air. I many times used cold water sponging for small babies to keep them cool. Whenever possible, we performed operations on small babies in early morning hours.

C.V.P. Line Beware of Guide Wire!

I learned this technique at Institute doing cardiac and neurosurgery

anesthesia. C.V.P. stands for central venous pressure. A catheter is inserted in the big vein in the neck and is connected via tubing to a transducer and the pressure in the vein which is very near heart is measured. This gives precise idea about the blood volume of the patient and helps in fluid therapy. The C.V.P. line is also used to give drugs by constant infusion.

During my practice I have done a lot more epidurals and spinals than these procedures but I have seen and remember more complication with C.V.P. lines! The patient is positioned supine with head turned usually to the left with head low position. A small needle is passed and the neck vein is located. Once you know the position of that neck vein (internal jugular) a small catheter is positioned in that vein and through that catheter a guide wire is inserted into it. After proper precautions a big catheter is inserted in the vein over that guide wire. I have tried to describe the procedure in short for you to understand the complications I have seen with this procedure.

Hold that guide wire!

I still remember this incidence very clearly. Dr. Abati was doing operation for abdominal aortic aneurysm. I had given general anesthesia and for monitoring I was putting the CVP line. I did put the guide wire and turned away to get the catheter for insertion from the tray. CRNA Joyce Collier was helping me. As I turned back we both saw what was happening. The guide wire was being pulled in cm by cm with each cardiac beating. I grabbed the wire by reflex and I could feel the pull on the wire from within. Amazed, we both looked at each other. I had never seen that happening before. From that day onwards I never let the guide wire out of my sight!

At this hospital a cardiac surgeon was performing central line procedure. He was about to push the big CVP catheter and guide wire in it in the neck. I reminded him to remove the guide wire which he was

'sure' he had already done! I have heard another anesthesiologist in that hospital losing the guide wire. Fortunately the patient survived and the wire was removed with noninvasive surgery.

Red is artery, blue is vein!

In the neck, near this vein there is a big artery (Carotid). One has to be very careful not to puncture the carotid artery with the big catheter. I used to locate the vein with 24 gauge needle and watch the color and flow of blood. Slow dark colored blood is from vein. Red and easily filling flow of blood is from artery. I have seen two arterial punctures with the big catheter and the surgeries were cancelled for that day.

Pneumothorax!

Dr. Dillon was a senior pediatric surgeon, a well respected physician in that hospital. He once did an operation on a 7 year old child for left lung cyst. We transferred this patient with a chest tube to Pediatric ICU. The child was quite stable with nasal O2. Dr. Dillon wrote instructions for the ICU physician and notified that if at all the child needs a CVP line, it should be done on the left side not on the right.

Dr. Dillon's reason for this was quite simple. One of the complications of CVP is damage to lung from the needle used for inserting the guide wire. When this happens there is air in the pleural cavity and the lung collapses. This child had already compromised left lung because of the operation and chest tube and was dependent on right lung for ventilation. The ICU physician did not listen, tried CVP on right side, and created a pneumothorax. Dr. Dillon knew the abilities of this physician! We had to put the patient on ventilator for a few days.

Some physicians have very good qualifications on paper. They are from great schools and students of famous teachers. However they lack brain hand coordination. It is very hard for the hospitals to remove

such physicians from their medical staff and then everyone suffers.

A story of broken guide wire!

That day I was working at Thomas Memorial Hospital. Around 7:30am Jackie and I started a case of intestinal obstruction. The patient was very sick and the procedure lasted many hours.

We had to give a lot of fluids, blood and blood product to replace the losses during surgery. I did an A-line to measure blood pressure and wanted to do CVP. The patient had lost clotting factors and the blood was not clotting properly. I was not supposed to use the internal jugular vein for CVP because if there was bleeding from the venipuncture I would not be able to stop it. I decided to use the superficial vein in the neck just under the skin.

After giving the patient head low position I did locate the vein and threaded the guide wire. This guide wire tip has a j shape at the end. This j shaped tip opens the vein and allows the operator to negotiate tissue obstruction on the way. I did pass the big catheter over the guide wire with some difficulty. Now it was time to pull the guide wire out of the catheter. I could not do it. Somehow the wire and catheter were pressed between the clavicle and the rib. It was very difficult. I was pulling very hard and suddenly the wire came out as if it snapped. Jackie and I both were surprised but I showed Jackie the wire in my hand and confirmed everything was alright. The surgeon and I transferred the patient to ICU and after the day's work returned home.

I did not think about that case again that evening.

That night in bed suddenly I remembered that snap I felt while removing the guide wire. I remembered the guide wire in my hand and now distinctly remembered not seeing the j loop on it. Now I was certain I had broken the wire and left a piece of it in the patient. I got up and

called ICU. It was about 11pm. The nurse told me patient was doing fine. Still I could not sleep that night. Next day morning I paged Dr. Dormal. I told him my fears. His immediate response was "You cannot break that guide wire. They are unbreakable!" He had seen the XRay report and it was fine. Still I requested him to see the XRay again. He called back and assured me there was no broken wire.

Then how I did not see the j loop at the end? Simple! I was visualizing the end of the guide wire in my hand and not the end which entered the patient and was pulled out!

Correct Cricoid Pressure

Cricoid is the lowest cartilage of the voice box, the larynx. This is connected to the larynx with membranes and other cartilages. One anesthesiologist Dr. Sellick noticed that this is the only cartilage in wind pipe as a complete ring! He used this observation to improve the safety of intubation in patients with full stomach. He suggested that pressure on this cartilage which is a complete ring will close the esophagus and prevent the regurgitation of stomach contents and aspiration. Anesthesiologists are using his technique since 1961. To remember Dr. Sellick this is called Sellick`s maneuver or also rapid sequence induction. Anesthesiologists use this for patients with full stomach or with acid reflux. Here is a short description of the maneuver.

The patient is in supine position with head slightly extended. He is instructed to breathe a few full breaths of oxygen. In a rapid sequence sleep medicine and medicine to relax muscles is injected through the I.V. Person standing on the right side of the patient gives pressure on the cricoid cartilage to close the esophagus and the anesthesiologist will pass the tube in windpipe when the patient is relaxed, when the muscle relaxant has worked. Many times the person giving the cricoid pressure is not a trained anesthesia person and has no idea where to press, how to press and how much. This results in serious problems.

Please let it go!

This was an emergency C-Section for fetal distress. We hurriedly moved the patient to O.R. On the way to O.R., I asked patient few questions about allergies and checked her airway. After some monitoring I pushed drugs in the I.V. for rapid induction. My CRNA was giving the cricoid pressure. I opened patient's mouth, put the laryngoscope in but could not see the larynx. I tried to adjust the scope a few times but the view did not change. The C-Section patients desaturate (O2 saturation goes down) very fast. Now the mucus membrane in the mouth was looking bluish. The surgeon Dr. Bush was thinking of delivering the baby and saving at least one life. Fortunately for me the CRNA released the pressure on the trachea to get something and I could see the cords clearly. Now intubation was easy. With ventilation her color returned to normal and we delivered a healthy baby. This was a very frightening experience for me. The CRNA did not know how to do the cricoid pressure. She was pressing on the Adam's apple, the thyroid cartilage and too hard with all the fingers. This distorted the view for the laryngoscopy. Thank heavens she let it go. From that day onwards I always checked who is giving the cricoid pressure and where.

Too much pressure!

Dr. Wilson was a good surgeon. He always wanted to be present when his patient was anesthetized. He would talk with the patients, hold their hand and assure them all is safe while they would drift off to sleep. He even would help anesthesia to put on monitors and help during intubation. Yes, he used to give cricoid pressure. He was a hefty man and once the pressure was excessive. The patient was hoarse for weeks. Her arytenoid cartilage was dislodged. You do not need more than couple of pounds pressure to obliterate the esophagus.

Locum Anesthesiologists

I retired from Charleston in April 2006. For many, it is hard to give

up the profession they have practiced throughout their entire adult life. After few months of traveling and enjoying the freedom of doing nothing the boredom sets in. Anesthesiologists easily find jobs--locum positions where they can work few weeks a year and take time off when they desire. I was contacted by many agencies for the locum jobs but I had other plans.

The CSE model (page 137) was still in the development stage. Mike, Trish and I were working on it quite often. After our booth at the AANA meeting in the first year we received our first big order for 25 models from US Army program and that was quite a morale booster! I used to do on an average 10 epidurals when I was working as an Anesthesiologist. Now I was telling Bob I participate in at least 100 epidurals a day through my model! The model was getting very popular in nurse anesthesia schools. Again if I wanted to do an epidural I can always go to basement of my house, perform the epidural on the model without fear of epidural failure and post epidural headache or fear of getting sued!

There was one more serious reason I decided not to work as locum anesthesiologist. Every hospital and anesthesia department has different anesthesia machines, working conditions and routine. It is hard to adjust to that in few days and as soon as things start looking familiar it is time to move. This is a perfect setup for you to make mistakes. At least I thought so. I had opportunity to watch a few locum anesthesiologists while working. Here are some cases I remember.

They still look alike!

Pat was a locum anesthesiologist working in our hospital. She was well trained and this was her way to visit many hospitals and find one where she would like to stay. That day she was doing spinal anesthesia for hemorrhoidectomy. She gave spinal in sitting position and after few minutes the patient was positioned for operation in prone position

(face down). Patient did complain of some pain at the incision; however the spinal did work well. The patient had severe itching all over his body, especially on face. Post op. patient did fine!

Here is what happened. The two ampules, Fentanyl and Lidocaine for spinal were side by side. The nurse did show the Anesthesiologist the ampules before she drew the medicines in the syringe. Pat was supposed to draw 1.5 ml from Lidocaine ampule. Instead she drew 0.5 ml and she was supposed to draw 0.5 ml from fentanyl ampule but she drew 1.5 ml. She gave far more narcotic than she planned and far less local anesthetic. Fortunately this worked O.K. for the patient. I was on call that day. She asked me to keep a watch on the patient and left. Patient did fine except for the itching which was expected after that large dose of Fentanyl!

This next patient was for a small rectal operation. The patient was in her 70's, was a smoker and had severe COPD. The anesthesiologist convinced her that spinal anesthesia would be good choice and the effect of spinal-numbness and paresis would not last long. The spinal anesthesia and operation went smoothly as planned, however the sensation and paresis lasted for 7-8 hours. We had to reassure the patient and keep her in recovery room for a long time!

The anesthesiologist had planned to give short acting agent (Lidocaine) for spinal. The spinal tray comes with a long acting agent (Tetracaine). You have guessed it right. The two ampules looked alike. He gave the long acting drug.

Know when to stop!

Anesthesia departments need locum anesthesiologists for clinical work and many times to fulfill the insurance company rules. One anesthesiologist is allowed to supervise only 3-4 rooms. The anesthesiologist is present during induction and is available all the time and the CRNA

stays with the patient all the time. In other words sometimes locum anesthesiologist is there just to sign the chart. That week Dr. Lim was working as locum in our hospital. He was in his late 70s and was slowing down with age. Dr. West was our chief anesthesiologist. That day around 11am I was just passing through the holding area. Dr. West was busy with one patient and he requested me, literally begged me to help Dr. Lim who was starting I.V. on a nearby patient. I went there. Dr. Lim was engrossed in doing I.V. on this 9 year old boy. He had already tried twice and was ready to do it again. The boy was in vasovagal attack because of pain and fright, his mother standing by the side was in tears. I quickly started Oxygen by face mask and gave atropine I.V. with a small needle. His pulse slowly improved. To our surprise Dr. Lim was not aware of this at all. He was still fixing the I.V. That day I told Dr. West to make sure that does not happen to me and to certify me as soon as I start to show signs of old age.

Malignant Hyperthermia

While practicing in Charleston I encountered two cases of Malignant Hyperthermia (MH). Here is a short description of the disease. MH is a genetically transmitted disease. The person carrying the genes may go through life without any difficulty. Often the first time the syndrome is activated is under anesthesia. The muscle relaxant succinylcholine and inhalational anesthetic agents are the triggering factors. Once the process is triggered, there is generalized contraction of skeletal muscle, increased metabolism, and death of muscle tissue and release of toxins in the circulation. The anesthesiologist has to catch the syndrome before it becomes full blown because the chance of mortality is very high.

They used the wrong Agent!!

Dr. Pincus was an ENT surgeon. That day I had anesthetized this 6 year old boy for tonsillectomy. From the preoperative interview there was no indication of any previous anesthetic problems or any unusual

family history. We were giving the child O2+ N2O+ isoflurane. Dr. Pincus started the operation and found that it was difficult to put in the mouth gag as the jaw was not relaxed. At the same time, Mary (CRNA) noticed the rising heart rate. We increased the concentration of the agent isoflurane to deepen the level of anesthesia. The tachycardia and temperature were increasing simultaneously. Strip on the forehead of the patient was reading 100* F. Mary and I both suspected hyperthermia. Dr. Pincus stopped the surgery. The agent was turned off and patient was now receiving only 100% O2. Soon lot of help arrived. Our technician Wanda was a great help in emergencies. She wheeled the MH cart in. We started ice cooling of the body. I saw a big vein in the patient's neck and immediately started a big bore I.V. Candy drew blood for lab and even took an arterial sample for blood gases and acid base study. We were lucky to have all that help. Someone was dissolving Dantrolene-the MH medicine. Patient received the medicine through the big bore I.V. I had started. 1mg/lb. After about 30-40 minutes we saw the pulse rate was coming down. The body temperature was also lowering. We were successful in treating this MH this time. The patient was transferred to recovery room and then to floor with proper instructions about monitoring. We followed the MH protocol.

While we were busy with the patient Dr. Pincus had enough time to see the family and keep them well informed. Now it was my turn. They were relieved that the child was fine but annoyed with anesthesia for using the wrong medicine. "Why did you use that anesthetic? If you had not given that agent this would not have happened!" At first I was confused with their reaction. But soon things became clear. Dr. Pincus had told them about the "Wrong agent." With great effort I convinced them that it is not wrong to prescribe Penicillin to a patient but it is wrong to prescribe Penicillin to a patient who is allergic to it! I informed the family that we were not aware that the boy had abnormal genes. His Malignant Hyperthermia was triggered with inhalational agent like the one we used during his anesthesia and they should get him tested for MH.

Dr. Pincus was another story. He was convinced that we used wrong agent and that day expressed his unhappiness to everyone. He was in no mood to listen to my explanation. He realized his mistake after few days and thanked Mary and me for successful outcome. He became my good friend and remained so thereafter.

A Known Case of MH!

The patient was for abdominal hysterectomy. Dr. Curnutte had requested me to see the patient because of her past anesthetic history. She was about 45 years old and had an episode of hyperthermia during C-Section. She was tested for MH with muscle biopsy and the test was positive. She knew all about MH and was quite apprehensive. At the preoperative visit we decided on epidural anesthesia. I had done many cases with Dr. Curnutte with this technique. For epidural to work well you need a quick, gentle and skillful surgeon and Dr. Curnutte was all that and more. I used to like to do epidurals for his cases.

Suzanne Richardson was the CRNA with me. We had called the MH hot line and followed the MH protocol for preoperative preparation. The patient did receive prophylactic Dantrolene. I started the epidural and as usual gave some sedation for relaxation. That day I was also covering the OB. floor so after some time I went to labor hall to do some labor epidurals. After about 30 minutes I received an emergency call from O.R. Patient was not breathing well and her O2 Sat. was dropping. I gave her some more I.V. sleep medicine (Propofol) and put a breathing tube for ventilation. Apart from this, further course of operation and recovery was uneventful.

I had done epidurals for this type of operations many times. The local anesthetic and the dose of medicine were as usual. Only different thing I had done with this patient was the prophylactic dose of Dantrolene. Dantrolene is a muscle relaxant. The skeletal muscle will contract but the contraction will be weak after Dantrolene medication. I could

not prove but till today I feel, that was the cause of her respiratory difficulty.

2002! Inflammable material "spirit" still lingers in modern O.R.s

That day Dr. Jane Jones was working on labor hall. She had done a few epidurals for laboring patients and was busy with post-op. rounds. One of her patient's labor was not progressing well and the fetal heart rate was decreasing. In a short time she heard the overhead paging system calling for Stat C-Section. The OB. Physician and the nurses wheeled the patient to O.R. In that hospital we always kept 1 O.R. room ready for such emergencies. Dr. Jones gave more medicine through the epidural catheter as the patient was being wheeled to O.R. and the patient had good surgical anesthesia. There was no time to spare as the baby's heart beats were down. The circulating nurse poured some isopropyl alcohol on the patient's belly for surgical prep. The Obstetricians draped the patient, hurried and started the operation. Dr. Jones used the drapes to make the 'Ether screen' and started oxygen flow via a face mask.

Suddenly she saw a blue film near the patient's lower chest and it was spreading. She immediately stopped the oxygen flow and asked the Obstetricians to remove the drapes. Fortunately they were able to stop the fire from spreading. They re-draped the patient and surgery was done successfully.

The surgeons were using the cautery machine to stop the bleeding. The heat from the cautery electrodes had ignited the still liquid alcohol near the patient's chest and was visible as a bluish flame. Dr. Jones's quick thinking and actions saved all from the major disaster. The patient did suffer from second degree burns around her lower chest.

This reminded me of my old case from Solapur, India (page 41). Over

the years the scientists have made the O.R. environment almost safe from such accidents. Because of widespread use of electrical equipment and static electricity it is almost impossible to remove all sources of sparks and heat. In modern O.R.s now we use only nonflammable anesthetics. It is interesting to note in that figure from old book one of the sources of inflammable material is spirit. A solution for cleaning skin!!

Those Amazing, Ever Changing Epidurals!

When I learned epidurals in India there were no dedicated trays for the procedure. At that time this was a single shot technique. You find the epidural space, give a single injection and remove the needle. This approach had two problems. The anesthesiologist always gave a little more medicine to be sure that there would be a high enough level for the surgical procedure. Often hypotension was common occurrence. Also this large dose was injected occasionally in one of the engorged epidural veins of laboring patients and produced life threatening emergencies.

When I started working at Einstein in 1974, it was the first time I saw trays for spinal and epidural anesthesia. Now we had epidural catheters. You could leave catheter in the patient, tape that on the patient's back and use for injecting more medicine if needed. This avoided injecting large dose at one time and the complications with it. I also learned the importance of giving I.V. fluids before starting the epidural and how this helped to avoid hypotension. Dr. Marx was very particular in turning the pregnant patient on her left side to avoid compression of great vessels in abdomen with the weight of the baby. Now anesthesiologist had an ability to prolong the effects of epidural and pain relief for hours by repeated injections in the epidural catheter. This increased the work and need for frequent patient visits. This also resulted in anesthesiologist recognition outside O.R. as a physician. Now there was a need for 24 hour anesthesia coverage on OB. floor for labor epidurals. This all led to emergence of OB. anesthesia as a speciality. Dr. Marx's

dream became a reality.

However with more epidurals done there were more complications. During 1976-80 there were 4-5 cases of paralysis reported after labor epidurals. This was as a result of injecting one local anesthetic drug (Nesacaine) in the CSF, just a few mm beyond the epidural space. The drug was acidic and resulted in those cases in permanent paralysis. This did give some setback to the sub speciality.

I came to Charleston in 1981. Bob was the only OB. anesthesiologist. Many Obstetricians were doing their own epidurals for their patients. Bob and I both had good training and soon the obstetricians abandoned that practice. Soon there was need for night coverage and night calls started.

I have mentioned before about PGA meeting in New York. This was my source for continuing medical education. I religiously attended these meeting every year. I learned about new techniques and drugs and ways to deliver them to patients and brought that knowledge with me to Charleston and introduced it in our clinical practice.

We started using infusion pumps to deliver epidural medicine around 1986. Now the patients were getting continuous infusion of epidural medicine. The need for top up medicine was decreasing and so was the incidence of break through pain. We were trying to use less concentrated medicine so there would be less motor paresis. Around 1990 clinical researchers introduced the mixture of local anesthetics and narcotics (Fentanyl) for labor epidurals and the quality of epidural anesthesia improved tremendously.

In 1998 I started using combined spinal-epidural for labor epidurals and was soon convinced that it was the best way to do epidurals for laboring patients.

OPEN DROPS TO OPEN HEARTS!

I worked in OB. anesthesia for many years and did many spinals and epidurals. Somehow I escaped from the major complications. Obviously I was lucky and fortunate. Apart from that I think good training and my adherence to guidelines helped. My participation in continuing medical education was a major factor. I avoided the drugs and techniques with problems and when in doubt I consulted with my colleagues. Here are some of the complications I have seen in my practice.

Infusion pump rate. Check before you leave!

We were trying different infusion pumps for delivering epidural medicine. That day I adjusted the pump to deliver 10 ml/hour and left the labor hall. I was called 30 minutes later as the infusion pump was beeping. I was surprised to see that the 50 ml syringe was empty. By mistake I had entered 100.00ml/hour instead of 10.00 ml/hour. In half an hour patient had received 50 ml of epidural medicine instead of 5 ml desired. Apart from dense anesthesia from her waist down there were no other untoward effects. The patient was unable to push for 2 hours. Slowly the ability to move and push returned and she delivered a healthy baby. Since then I always rechecked the pump settings.

Failed epidural!

Every now and then I used to encounter non-working epidurals in my practice. After adjusting the catheter I used to give a dose of epidural medicine through the catheter. Often I re-did the epidurals. Non-working epidurals were equally annoying to the patient and me. I had seen that epidurals done at higher level (L2-3) worked better that at (L3-4)!

Few micrograms of epinephrine!

I had done combined spinal epidural for this patient for labor and delivery. The CSE was working great. She had no pain and she was

able to move and sit in the bed. No loss of motor function. The labor progressed well and soon she was ready to push. She requested more medicine. I gave her the test dose (3 ml of 1.5% lidocaine with epinephrine 1:100000[30 micrograms]) to check the catheter before. This relieved her pain alright but took away her ability to push. She had to wait about 2 hours to start pushing. From that day onwards I stopped epinephrine test dose for laboring epidurals.

For Post. Op. Pain!

Dr. Nixon was working that day in St. Joseph hospital. This female patient was for total knee operation and had requested epidural anesthesia for the procedure. Dr. Nixon did the epidural and left the catheter in for post operative pain management. The patient was complaining of pain in the recovery room. She received epidural medicine and continuous epidural infusion was started. Next day morning she had developed paraplegia (inability to move legs) and remained paraplegic. Epidurals are done in many hospitals and are popular for post operative pain relief. I always wondered how safe this was. You put the catheter so near the nerves and then someone starts the infusion! I remember a similar case from Einstein.

I do not remember the exact diagnosis but I was requested by Dr. Kaiser to do this epidural for post operative pain. At that time I was working at Einstein. This was not a common procedure at that time. I did the epidural and left clear dosing instructions with the nursing staff. Before leaving the hospital I went to check on the patient. The nurse was ready to give the epidural medicine because the patient was starting to feel the discomfort. I saw the vial. The medicine was correct-Marcaine 0.25% but it was with preservative! I told her about the error and we did get one without preservatives used for epidural anesthesia. Preservatives are neurotoxic! After Dr. Nixon's case my interest in post op epidurals diminished.

Loss of Resistance!

Harry was physician assistant working with me. Once he told me this story. He was assisting Dr. Fine that day. They were doing a case of abdominal aortic aneurysm. As Dr. Fine was dissecting around the aorta he noticed a small catheter in the abdominal cavity. That was the epidural catheter the anesthesiologist had put that day morning for post op. pain relief! Loss of resistance does not mean you are in the epidural space!

VBAC and Pain of uterine rupture!

The patient was Kim an OB. nurse and was in labor. Previously she had a C-Section. She wanted to try VBAC (Vaginal Birth after C-Section.) That day Dena was working on labor hall and she did Kim's epidural which worked for a while but the pains returned. Additional medications did not help the patient, so Dena decided to repeat the epidural procedure. I was called in as she had difficulty in locating the epidural space. We did the epidural but the patient was still hurting. Now the fetal heart tracing showed decelerations and Dr. Thomas, obstetrician decided to do emergency C-section. The epidural did work for the incision and on opening the abdomen uterine rupture was revealed. The epidural was working fine but the pain of uterine rupture is very severe and could not be controlled with epidural. I remembered Dr. Marx teaching --" Pain of uterine rupture sieves through the epidural!"

Supine hypotension and epidurals!

I have mentioned above the cause of supine hypotension. During late pregnancy the gravid uterus and the weight of the baby compress the great vessels (aorta and Vena Cava) when mother is on her back and this leads to hypotension. The incidence of supine hypotension was decreased remarkably after Dr. Marx's suggestions of hydration and L.U.D. (left uterine displacement). During my residency at Einstein

(1975-78) many senior obstetricians objected to this left uterine displacement and sometimes we had to remove the wedge from under the right hip just before incision for C-Section. With Dr. Marx's interest and persistence soon L.U.D. and pre op. hydration were accepted as standard care in laboring patients and the incidence of maternal hypotension decreased. The anesthesiologists started using less medicine for epidurals, more dilute solutions and infusions. This also helped to reduce the incidence of hypotension.

The technique of combined spinal-epidural improved the care further. When I started using the technique first, the recommended dose of Fentanyl for spinal of was 25 micrograms. There was instant pain relief but it created two major problems. Severe itching and fetal bradycardia! We slowly learned to reduce the dose of Fentanyl and manage the pain properly. Labor hall is usually a very busy place. I had to open an ampule of Fentanyl and vial of 0.25% Marcaine to mix the dose for spinal. To avoid this mixing of drugs just before epidural procedure, I decided to take 2 ml of premixed solution (0.125% Marcaine and 2 microgram/ml Fentanyl). This small dose of Fentanyl with local anesthetic agent given intrathecally was enough to relieve pain in most of early labor patients. In some patients I had to give a small bolus of the mixture through the epidural catheter. This reduced the incidence of hypotension further. Soon my colleagues started using the spinal dose from the premixed infusion. In Banff, Canada SOAP meeting I met Dr. Krzysztof Kuczkowski, an OB. Anesthesiologist from San Diego. I was surprised to learn that he was also using that small dose and having good results.

Husband in the room!

While doing epidural the anesthesiologist has to worry about 2 patients, mother and the baby. In my practice I had to send 2 husbands to emergency room as they fainted while watching the epidural procedure and had head injury. I soon learned to insist that they have to sit in the

chair and hold hand of their wives for 'support'. That used to hurt their macho image and sometimes there was resistance to my suggestion. Most of them agreed. Some of them did not know how to turn the camera or video on and then their wives helped. I am just repeating one joke about a husband here.

That was their first baby. As soon as labor pains started he put her in the car and drove to hospital entrance. She got down and went to labor hall and he joined her after parking the car. But parking the car took some time and when he arrived on labor hall she had already delivered. Naturally he was disappointed that he missed the childbirth and said. "I do not want to miss this next time. Next time you park the car and I will rush upstairs!"

Overall work on the labor hall was very rewarding and enjoyable experience for me. The technique and the drugs were constantly improving and so was the quality of epidurals. As OB. Anesthesiologist I did spend many weekends and nights on this labor hall. Dr. Maxwell was a Neonatologist and like me used to do in house calls. Once we both were in the delivery room. I had done the epidural and he was there to do the resuscitation of newly born child. After the delivery everyone was in relaxed mood and happy about the healthy baby. I said "To celebrate I will order coffee for everyone, my treat! What you want?" Someone said "Starbucks!" My reply was "I have only Maxwell House in the house!" Everyone laughed. I used to enjoy doing that. "Good to the last drop"! Someone whispered in the background.

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The words I remember!

Boys, work hard today so you can sleep comfortably tomorrow! If you sleep today you will have to face hardship tomorrow.

Dada Patwardhan, Grade School Teacher, Dravid High School, Wai, India

What can I do for this family?

Dada (Big Brother)

What did you learn today?

Dr. Utturkar, Anesthesiologist, Pune India

Hanji! Meaning Welcome! What can I do for you?

Prof. G. C. Tandon All India Institute of medical Sciences

I have not seen anyone dying from hard work but I have seen patients dying because

of hardly working doctors!

Professor Gopinath
Cardiac Surgeon All India institute of medical sciences, New Delhi India

No one should be crying on Labor Hall except newborns!

Dr. Gertie Marx, Albert Einstein College of Medicine, New York, N.Y.

Work is Worship!

Dr. Ramakrishna, Charleston West Virginia

44

Tomorrow!

Every sunset is beginning of new sunrise!

I retired from active anesthesiology career in April 2006. My friends and colleagues arranged send off parties for me and I remembered all the good time I had in Charleston. My friends knew my past and were not sure this was my final move. I reassured them that they were correct. I told them the final move is decided by someone else and we do not have any say in it.

The final move is much easier. Actually in final move you cannot move. Someone else moves you. There is no house to sell, things to pack, no reservations to arrange and no anxiety about new place as you do not know where and when you are going. Even the parties in your honor are after you have left.

Our main attraction about Westford, MA, was our grandchildren lived there. The house on Stone Ridge Road was just a few miles away from theirs. The Stone Ridge is a senior community with club house and well maintained lawns and cleanliness.

Once Nikhil and Maya, my grandchildren asked me a riddle. What do you always look forward to but never comes? Tomorrow! I remembered my grade school teacher, Dada Patwardhan "If you work hard today tomorrow you can relax!" I realized that was his trick and he wanted me to make use of every today I had.

One day Shaama and I walked into the clubhouse to see the facility. It was about 9:30am.

The clubhouse had a big hall, kitchen and library. On one side there was a gym and as we entered the room we were greeted by the Yoga students and their teacher, Diane Eastwood. Yoga class was a pleasant surprise to us and we started to attend the classes regularly. Diane was a student of Kripalu (loving friendship) Yoga and I soon realized that there was a lot for us to gain by attending her classes and listening to her. She was a great help in preparing our bodies and mind for tomorrow. She has great instructional skills and her Namaste, honoring the light within you are not just the words but you get the feeling that she means it. My main attractions about this class are her instructions and discourses at the beginning and end of the class.

Once we were practicing Mountain pose-Tadasana. Diane was giving instructions. "Feet together! Stand straight. Firmly press down with

feet! Arms straight overhead! Try to reach the ceiling with your fingers!" -- I was facing the back side of clubhouse. The clubhouse is at a slightly higher level and I was looking at the sloping lawn. As I was following her instructions I could feel I was getting taller and taller and the slope was deepening!

That day after a long break Tom and Barbara were joining the Yoga class. Diane and all of us decided to greet them with Lion pose. At the beginning of class we all sat in a circle around Tom and Barbara and greeted them with lion roar! I was behaving like a child and so was my mind. Soon after that we started the class with Pranayama. Diane was giving instructions on breathing. "Slow inspiration and expiration, concentrate on the feeling of air at the nostrils, watch and observe the pause at the end of each inspiration and expiration and then full Yogic breath!" I was concentrating on the instructions and soon I had no feeling in my arms neck and legs. I could only feel the cold air rushing into my lungs and leaving me. It was a strange sensation, comforting for just a moment. I wanted to move my arms and legs but I could not. Next moment I forced myself out of that experience, I was relieved to notice movement in my arms and legs!

Her conversations with the class are also very helpful. She has explained with ease and clarity concentration, mindfulness, insight and types of breathing. Last couple of years we had to travel often to different places for Shaama's work and Diane's teaching - Home is where you are, was very helpful for me to keep the mind calm and peaceful.

While learning and practicing Yoga I have found a lot of similarities with what I practiced as Anesthesiologist. I have already mentioned some breathing techniques and how those are used in Anesthesia (page 133). Practice of meditation and practice of medicine are not very different. For both you need concentration. To start meditation you get into one comfortable position and stay with that position till the practice is over. Medicine is meditation in motion! You choose a subject

may it be surgery, internal medicine or anesthesiology. Select your specialty and stay with it. Changing position during meditation will disturb your concentration and you cannot be sure that the new position will not be uncomfortable soon. You will not reach far this way. The same is true about life choices.

To start pranayama you take 3 full breaths and fill the lungs with Yogic breath! While giving general anesthesia I used to instruct the patient to take 3 full breaths from Oxygen filled anesthesia circuit so the lungs are filled with oxygen.

The next steps are: Watch your inhalations and exhalations. Slow down the rapid breathing. Notice the pause at the end of each inspiration and expiration. As you slow down the breathing your lungs will fill more and more; you will be taking Yogic breaths. All this will have calming effect on your mind and blood pressure.

Under general anesthesia after those 3 big breaths patient goes to sleep and anesthesiologist takes over the breathing. The pattern of breathing used is not very different than described above. I used to keep the respiratory rate around 7-8/min. Good tidal volume (size of breath) to fill the lungs. I: E ratio about 1:2 or 1: 3 (This is ratio of inspiration time and expiration time). Inspiration always shorter than expiration so lungs will empty enough to remove used air. This slow and regular respiratory pattern helps to fill patient's heart with venous blood and improve lung function. The Yogic breathing I am doing for myself now, I was performing that for my patients who were asleep!

I remember my friend Vinod Deshmukh's four Is. These meetings at the Stone Ridge Village club house are helping me to reduce the anxiety of Isolation, Insecurity and Insignificance. At the same time the discussions in Yoga class are making the idea of Impermanence of this body clearer and preparing us for the next move. I always remind Shaama that for my final move she should put a tray of combined

spinal-epidural with me in the box. On that journey if I meet someone in pain I can say "I will help you! I know about the epidural!"

Now it is time for me to end this conversation. Now I remember Dada and Sant Tukaram. I have been away from my home for a long time and it is time to prepare for that journey. Now there are no conversations, frequent meetings. But we will always have good memories and best wishes.

Namaste! I honor and respect the goodness within you.

Aum!

Peace!

Shaanti!

About the Author

Shreeniwas Jawalekar has practiced Anesthesia for over 40 years. He started his Anesthesia training with Open drop ether in 1963 at Sassoon Hospital Pune, India. Here he describes the early anesthesia practice, changes he saw in monitoring, equipment, drugs and in the specialty of Anesthesiology as a whole. He has lived through the history of Anesthesia from Open drops to open hearts! He was fortunate to meet excellent teachers who made him a good Anesthesiologist and better person. To err is human. He has narrated many complications and events he has seen and heard. The story of his journey from Wai, India to Westford, MA, will be an interesting reading to medical as well as non-medical persons. After retirement he is still active in what he did best—Teaching anesthesia to students. You can watch him on www.csemodel.com.

Helping Hands

Dr. Jayawant Raut and Trimbak, Mule Hospital, Solapur India

Drs. Sudhakar and Manda Pansare, Pune India

Michael Fisher, Elkview, WV USA

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