PPM ANESTHESIA & the LAW
A RISK MANAGEMENT NEWSLETTER

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Nerve Damage from Regional Blocks Placed In Anesthetized/Sedated Patients

Whether regional blocks should be placed in adult anesthetized/sedated patients is still being debated within the anesthesiology community.[1] The debate stems from the fact there is no current peer-reviewed, evidence-based medical literature concluding this technique increases the risk of nerve injury. However, from the vantage point of defending more than 4,000 lawsuits over the past 23 years, PPM continues to strongly recommend against using this technique based on the difficulty of defending injuries resulting when regional blocks are placed while the patient is either anesthetized or sedated.

One obvious problem with placing regional blocks in an anesthetized/sedated patients is the patient is unable to respond to the pain associated with needle or catheter-induced paresthesias or intraneural injections. Perhaps the advent and increased use of nerve stimulator needles and ultrasound to assist needle placement may have increased anesthesiologists' comfort level in placing blocks without reliance on physiologic responses. Nevertheless, there is credible medical literature criticizing the placement of regional blocks in anesthetized patients as inappropriately risky in most cases. This literature has become an important tool for plaintiff attorneys in recovering substantial settlements and is a challenging obstacle in defending anesthesiologists using this technique. There are also numerous well-credentialed anesthesiology experts who will readily testify in court this technique is ill-advised and below the standard of care.

Adding to the challenge, the most common reasons cited by anesthesiologists using this technique are medical convenience and/or patient comfort. While these may appear to be legitimate reasons to consider using this technique, the anesthesiologist must weigh and balance the increased risk of nerve injury with those rather modest benefits. PPM's considerable experience in defending these claims suggests that medical convenience or patient comfort will rarely provide a compelling justification, especially when defending catastrophic nerve damage litigation.

The following case summaries highlight the devastating injuries that can occur when placing regional blocks while the patient is anesthetized, sedated or otherwise unable to provide a physiologic response and the difficulty defending these claims.

- 39 year-old female presented for right rotator cuff repair. The PPM policyholder heavily sedated the patient with Versed before administering an interscalene block. The PPM policyholder utilized a nerve stimulator and a two-inch needle to administer the block. The patient experienced a total spinal anesthetic following the placement of the block. The PPM policyholder converted to a general anesthetic, intubated the patient and the surgery was completed. Postoperatively, the patient had no motor function in her right arm. MRI and CT scan studies showed a cervical syrinx at C3-4. Neurology consults were obtained and a diagnosis of Brown-Sequard syndrome (traumatic neurologic disorder resulting from compression of one side of the spinal cord) was made.

  The patient sued the PPM policyholder, PPM insured anesthesia practice group and the hospital. The allegations against the PPM policyholder were lack of informed consent and negligent performance of the interscalene block by injecting into the spinal cord causing permanent paralysis in the patient's right

[1] Studies involving regional blocks in anesthetized pediatric patients suggest there is a relatively small risk for serious neurologic injury. *See*, Caplan, R M. , *"Should Regional Blockade be Performed on Anesthetized Patients?"* ASA Newsletter, April 2001; 65(4): 5-7, 19.

upper extremity; impaired motor function in the right lower extremity; and severe pain and intolerance to heat.

Plaintiff's anesthesiology expert, Jonathan Benumof, MD, opined the PPM policyholder passed the needle through the intervertebral foramen into the spinal cord and injected the local anesthetic directly into the spinal cord. Dr. Benumof testified during his deposition the PPM policyholder inserted the two-inch needle too horizontally and too far (to the hub) thus entering the spinal cord.

The first retained anesthesiology expert could not support the defense or testify that it was within the standard of care to inject the spinal cord. This expert indicated that in order to inject into the spinal cord, the PPM policyholder would have needed to direct the needle laterally and that would be below the standard of care.

The second retained anesthesiology defense expert rejected plaintiff's expert's opinions and concluded the most likely cause of the patient's injuries was an intraneural injection. This expert opined the PPM policyholder injected the first 3 to 4 cc of anesthetic outside the nerve which anesthetized the nerve. As a result, when the PPM policyholder proceeded to penetrate the nerve there was no reaction. He further opined there are three coverings outside the nerve and the anesthetic solution dissected along one of these coverings. It then dissected centrally and entered the spinal cord. This expert indicated there is really no way for the anesthesiologist to know this has occurred and was not a deviation from the standard of care.

Plaintiff testified during her deposition that she has to wear a brace on her right knee; she is unable to make a fist or grasp anything with her right hand; she experiences spasms in her right arm and leg; she has to use a scooter due to her leg weakness; and she has extreme intolerance to heat due to her spinal cord injury. Plaintiff further testified she lives with her 72 year-old mother who helps her bathe and cooks her meals. Plaintiff also testified she has suffered constant pain since the injury and even her clothes touching her right side causes discomfort. Plaintiff produced a long list of pain medications, anti-depressants and other medications she takes to try to alleviate her symptoms.

The PPM policyholder testified in his deposition his informed consent discussion would have included the risks of bleeding, seizures and infection. He testified he most likely would not have discussed nerve damage as part of the informed consent process. He testified further he no longer heavily sedates patients before placing regional blocks.

Plaintiff's economist expert provided a life care plan that listed total economic losses in excess of $3 million. Defense counsel's evaluation of the potential verdict range was between $1.5 million to $2.5 million, with a significant chance of a verdict exceeding the $2 million insurance coverage available to the PPM policyholder and PPM insured anesthesia practice group.

Both PPM policyholders consented to settlement. The PPM insured anesthesiologist expressed his strong desire to have the case settled on his behalf. With the PPM policyholders' consent and request for settlement, PPM engaged in mediation with the plaintiff and the co-defendant hospital. Plaintiff's initial global demand was $5 million. Plaintiff's settlement demand to the PPM policyholders was $2 million. The hospital settled its case for $75,000.

Based on defense counsel's evaluation of a significant chance for an excess verdict and the anticipated jury sympathy for plaintiff, PPM settled with the consent of both PPM policyholders for $1.25 million.

- 26 year-old male presented for an arthroscopic exam, Achilles tendon allograft and posterior cruciate reconstruction of his right knee. One PPM policyholder administered a spinal block. Another PPM policyholder placed a popliteal fossa block for post-operative pain management. A tourniquet was also placed for this procedure. Following the procedure, the patient complained of numbness and weakness in his right foot with a stabbing sharp pain.

  The medical records were unclear as to whether the spinal anesthetic was administered before the popliteal fossa block. The medical records were also unclear as to which PPM policyholder actually placed the popliteal fossa block.

The patient sued the PPM policyholder who administered the spinal anesthetic, the PPM policyholders who may have placed the popliteal fossa block, their anesthesia practice group, the surgeon and the hospital. The allegations against the PPM policyholders were lack of informed consent; negligent administration of the spinal anesthetic prior to placing the block; and negligent performance of the popliteal fossa block by injecting into the sciatic nerve causing permanent nerve damage, numbness and pain in the patient's right foot.

Plaintiff's settlement demand prior to trial was $2.5 million. Despite the challenges presented in the case, neither PPM policyholder consented to settlement. Plaintiff dismissed the anesthesia practice group, surgeon and hospital prior to trial with no payment.

Plaintiff's anesthesiology expert, Arthur H. Ackerman, MD, testified the informed consent was inadequate as the risk of nerve injury was not discussed. As expected, the expert was highly critical that the spinal anesthetic was administered before the popliteal fossa block. He also testified the popliteal fossa block caused the nerve injury.

The defense anesthesiology expert testified plaintiff's injury was likely caused by the popliteal fossa block, but nerve injury is a known risk and complication of this procedure. He testified further the informed consent was adequate as the plaintiff signed an informed consent listing the possibility of nerve injury. It was unclear whether the PPM policyholder ever discussed the risk of nerve injury from the popliteal fossa block, or that there was a higher risk of injury when performing the block after the patient had received the spinal.

The defense neurology expert testified plaintiff's nerve injury was, in his opinion, more likely caused by compression from the tourniquet. This expert testified further the circumferential pattern of weakness and numbness fit a tourniquet type of injury.

Following a four day trial, the jury returned a verdict in favor of plaintiff and awarded $500,000 in damages. The jury apportioned $400,000 to the PPM policyholder it believed placed the popliteal fossa block and $100,000 to the PPM policyholder who administered the spinal anesthetic.

- 47 year-old male presented for left shoulder arthroscopy under general anesthesia. The PPM policyholder attempted to place an interscalene block for post-op pain management after the patient was asleep. After two unsuccessful attempts to place the block utilizing a nerve stimulator, another anesthesiologist suggested that the PPM policyholder try a more posterior approach. The PPM policyholder moved about 2-3 cm posterior from the original site resulting in nerve stimulation. Following negative aspiration, a 3 cc test dose was injected and achieved the expected resolution of muscle contractions. The PPM policyholder then proceeded to give an additional 27 ccs using the intermittent aspiration technique.

  After the block was completed the patient's spontaneous ventilation ceased. He was placed back on ventilatory support while remaining intubated. There was a slow decline in blood pressure but it was quickly controlled with epinephrine. The PPM policyholder believed a cervical epidural block had resulted, most likely from migration of the local anesthetic. The surgery was completed and the patient was transferred to PACU intubated.

  The patient was extubated after three hours of ventilation in PACU. His only complaint at that time was tingling in his legs. The patient wanted to go home so he was discharged. The PPM policyholder called the patient the next day and the patient reported he still had tingling in his legs. Two days later the patient complained of right shoulder pain and numbness in his lower extremities. A neurological evaluation and MRI were obtained which showed cord edema from C2-6. Another neurosurgeon examined the patient and noted "central cord syndrome."

  The patient sued the PPM policyholder and her practice group. The patient alleged the block was performed negligently in that the needle actually penetrated the spinal cord and/or cord space; the patient was improperly monitored in the PACU; and the patient was allowed to go home rather than being admitted for further neurological evaluation and treatment.

  Plaintiff's anesthesiology expert, Ronald Katz, MD, opined the PPM policyholder improperly performed the block citing the fact the block was placed while the patient was anesthetized. He further opined the

postoperative care was substandard and a neurological consult should have been ordered and performed before discharging the patient.

The first anesthesiologist contacted to review the case was unsupportive based on a belief that performing an interscalene block while the patient was asleep was ill-advised and below the standard of care. This expert indicated it was highly improbable the patient would have been injured by the block had it been done with the patient awake. He opined an interscalene block response is based on sensory response; therefore, the patient must be awake. According to this expert, when the PPM policyholder moved the needle 2-3 cms posteriorly in the cephalad direction she could very well have injected the anesthetic directly into the subarachnoid space. He also was of the opinion the care and assessment in PACU was below the standard of care.

The second anesthesiologist retained for the defense was also critical, but was willing to testify the PPM policyholder met the standard of care. He indicated there is a great deal of controversy within the anesthesiology community regarding the placement of regional blocks while the patient is asleep. He stated that in his opinion virtually all of the complications associated with this type of block can be prevented if the patient is awake. The expert indicated further he teaches that regional blocks should only be performed on awake patients. He was also critical of the delay in recognizing the patient's injury and felt earlier recognition could have allowed the patient to be referred for anti-inflammatory treatment.

Plaintiff testified at deposition that he has a feeling of "fullness" in his stomach and weakness in both lower extremities. Plaintiff's left arm was visibly atrophied and he claimed to be unable to lift anything with his left hand or grasp small objects. He also claimed sexual dysfunction and an inability to "perform" like he could before his injury. Plaintiff testified he was employed in the construction industry and could no longer perform any labor duties. Plaintiff's economist expert calculated his actual wage loss at $791,000.

Defense counsel's evaluation concluded it was more likely than not a jury would find in favor of the plaintiff. Counsel estimated any plaintiff's verdict would be in excess of $1 million and recent trends in that jurisdiction suggested a potential verdict range of $1.5 million to $3 million. Defense counsel opined the $2 million in available insurance coverage for both PPM policyholders was in jeopardy in the event of a plaintiff's verdict.

Based on the challenge of finding a fully persuasive defense expert and the potential for a plaintiff's verdict in excess of the available insurance coverage, the PPM policyholder consented to settlement.

Plaintiff's initial settlement demand was $1 million. PPM mediated this case and eventually settled with plaintiff for $750,000.

Informed Consent

As highlighted by the case summaries above, informed consent is often a critical element in these cases. Juries are often sympathetic to seriously injured plaintiffs who claim they were never informed about the increased risk of nerve injury associated with placing a regional block while they were anesthetized/sedated. One way to overcome that jury sympathy is through a more rigorous and detailed informed consent process. If the anesthesiologist determines this technique is medically indicated, he/she must carefully discuss and document the risks and benefits of this approach with the patient. **PPM strongly recommends the inclusion of a specific notation initialed by the patient or the use of a supplemental informed consent such as the following sample.** PPM's claims attorneys and specialists are available to review your current informed consent process and assist in developing an appropriate informed consent document for your practice.

References:

Caplan, Robert M., *"Should Regional Blockade be Performed on Anesthetized Patients?"* ASA Newsletter, April 2001; 65(4): 5-7, 19.

Beneumof, J.L., *"Permanent Loss of Cervical Spinal Cord Function Associated with Interscalene Block Performed under General Anesthesia."* Anesthesiology 2000; 93: 1541-1544. ❖

Supplemental Informed Consent
for Regional Blocks placed during General Anesthesia

In providing my consent to the scheduled surgery and the "Consent for Anesthesia Services," I have been informed by my physician(s) that in addition to undergoing General Anesthesia, I have the option of also receiving a regional block. My physician(s) has explained the medical indications for performing this block while under general anesthesia as follows:

_____

_____

_____

In discussing this procedure, my physician(s) has also explained the additional risk of nerve damage associated with placing a regional block while I am under general anesthesia. I have been informed that depending on the location of the regional block, such nerve damage may include permanent paralysis of the arms, legs and/or bowel and bladder dysfunction.

I further understand that for the procedure I am considering, there is an increased risk as specifically described below.

_____

_____

_____

In agreeing to have a regional block performed while I am under general anesthesia, I have been given the opportunity to fully discuss both the risks and benefits with my physician(s) and or family members. Having carefully weighed the increased risks and benefits involved, I have elected to receive a regional block while under general anesthesia.

Signed: _____ Date: _____ Time: _____
Patient

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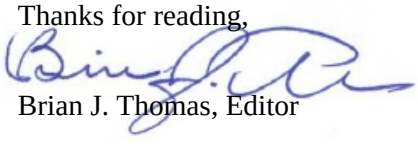
In This Issue

We revisit the preventable anesthesia complication of nerve damage from regional blocks placed in anesthetized/sedated patients. PPM policyholders have reported catastrophic nerve injuries resulting from this risky and dangerous technique. Unfortunately, some anesthesiologists have discounted earlier warnings, based primarily on their own personal experience, and continue to engage in this potentially dangerous practice. To date, PPM has paid losses exceeding $5 million from nerve damage claims from regional blocks placed in anesthetized/sedated patients. Additional cases involving nerve injuries arising from this technique are pending. In this issue we refocus attention on this preventable anesthesia complication and offer some risk management advice regarding documenting the risks and benefits of this approach if it is determined to be medically indicated.

Thanks for reading,



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