



The Global Regional Anesthesia Distribution

Eldor/Tuohy Combined Spinal-Epidural Kit (CSEN 69)

Combined Spinal-Epidural Anesthesia

Combined spinal-epidural anesthesia is a new kind of regional anesthesia that combines the spinal anesthesia with the epidural anesthesia. Both techniques are well known separately for their benefits and limitations. The combination of the spinal and the epidural routes as separate departments for local anesthetic injections gives a new kind of regional anesthesia. The benefits of the spinal anesthesia (rapid induction and excellent muscle relaxation) are combined with those of the epidural catheter (epidural catheter injections intraoperatively and epidural injections postoperatively).

CSEN pencil point spinal needle

This is an innovative device in which there is a lateral hole at the tip. The anesthetic solution will flow out of this hole into the subarachnoid space at the direction of this hole. The CSEN pencil point spinal needle separates dural fibers rather than cutting them to reduce incidence of spinal headache. A small bore spinal needle is inserted through an introducer until it pierces the dura. Confirmation of its placement in the subarachnoid space is when CSF is obtained through the hub of the spinal needle. The local anesthetic solution is then

injected through the spinal needle into the subarachnoid space. After the injection is completed the spinal needle is withdrawn and the patient is positioned as required.

Eldor Epidural catheter

The Eldor epidural catheter is an innovative epidural catheter which consists of 6 lateral holes within the 1.5 cm from the closed tip. The six lateral holes are arranged circumferentially.

Using the epidural needle the epidural space is reached by the loss of resistance technique or the hanging drop technique, while the proximal opening of the epidural needle enters the epidural space. The epidural catheter is inserted into the epidural space through the epidural needle. An aspiration test and a test dose are done. If it is negative the anesthetic solution is injected gradually until the required dose-effect is achieved. The epidural needle is withdrawn after the epidural catheter insertion or after the epidural catheter aspiration test and test dose. The epidural catheter length inside the epidural space should be 3 cm. This is measured in each patient according to the markings in the epidural needle and the epidural catheter. After withdrawing the epidural needle the epidural catheter is secured on the patient's back by a plaster to prevent pull out and kinking. Withdrawal of the epidural catheter after anesthesia, analgesia or several post-operative days, should be done while the patient lies on his side with flexed feet. The epidural catheter should be withdrawn slowly and gently. Inspection of its completeness should be done after its withdrawal.

Eldor/Tuohy Combined Spinal - Epidural Technique

Using the Tuohy needle the epidural space is reached by the loss of resistance technique or the hanging drop technique while the

proximal opening of the epidural needle enters the epidural space. Then the spinal needle is inserted through the Tuohy epidural needle until it reaches the spinal space.

The local anesthetic solution injected into the subarachnoid space is exited through the lateral hole positioned at the pencil point tip. The injection should be slow and gentle. The dose should be adjusted to every patient and to every operation. The orientation of the hole is a factor for the administration of the anesthetic solution.

After completion of the spinal injection the spinal needle is withdrawn from the Tuohy needle.

Then the epidural catheter is inserted into the epidural space through the epidural needle. A test dose is done as after any epidural catheter insertion. The epidural needle is withdrawn after the epidural catheter insertion or after the epidural catheter test dose. The epidural catheter length inside the epidural space should be 3 cm. This is measured in each patient according to the markings in the epidural needle and the epidural catheter. After withdrawing the epidural needle the epidural catheter is secured on the patient's back by a plaster to prevent pull out and kinking. Withdrawal of the epidural catheter after anesthesia, analgesia or several post-operative days, should be done while the patient lies on his side with flexed feet. The epidural catheter should be withdrawn slowly and gently. Inspection of its completeness should be done after its withdrawal.

Local Anesthetic Injections

The dose of the local anesthetic injected into the subarachnoid space can be the same or lower than that injected when performing only spinal anesthesia. Local anesthetics can then be injected through the epidural catheter if the level achieved by the spinal injection is not enough for the operation, or when the spinal anesthesia wears off and the operation lasts more than the spinal anesthetic duration. Postoperatively, the epidural catheter

serves for injecting opiates or local anesthetics as an excellent method of postoperative analgesia. The usual care of epidural opiates or local anesthetics injections should be practised.

Hazards

Intrathecal medications may obscure signs of epidural catheter malposition. The reduced ability to detect catheter malposition using an epidural test dose should be considered in the selection of this technique and in the choice of agents if the intrathecal medication is provided prior to the epidural dose.

Do not withdraw an epidural catheter through an epidural needle, because of danger of shearing the catheter.

After a positive test dose for inadvertent subarachnoid placement - the epidural catheter should be withdrawn or be treated as a spinal catheter.

After a positive test dose for inadvertent intravascular placement - the epidural catheter should be withdrawn, and no further injections be made through it.

Do not insert the epidural catheter more than 3 cm inside the epidural space, because of kink and/or malposition.

The epidural catheter does not always go at the intended direction (cephalad or caudad).

The device is intended for short term use only, 72 hours or less.

Follow national and/or institutional guidelines for patient monitoring appropriate to the administration of combined spinal epidural anesthetics.

Caution

Law restricts this device to sale by, or on the order of a physician.