PEDIATRIC CAUDAL ANESTHESIA-ANALGESIA

 GENERAL INFORMATION

Operating on infants and children requires special skills and techniques. Modern applications of anesthetic methods have made it possible to deliver better care to infants and children who are having simple or complicated operations. In addition, the operations can be done more safely, and a faster, more comfortable recovery can be expected.

One modern advance is caudal anesthesia, which can be combined with general anesthesia or with sedation. It is used to provide pain relief in infants and children who have operations in the lower abdomen, groin, legs, and feet. This type of anesthesia used alone or in combination with general anesthesia or sedation can be very effective in controlling pain during and after surgery.

ADVANTAGES OF CAUDAL ANESTHESIA

• Most children who have a caudal anesthetic do not require additional pain medicines during the first 6 to 12 hours following the operation. This reduces the need to treat pain with narcotics, given either by vein or in the muscle by injection. Narcotics often have undesirable side effects, such as nausea, vomiting, drowsiness, and suppression of breathing.

• Another advantage of caudal anesthesia before the operation is begun is that it blocks the nerves that carry pain signals before the painful incision is made. This results in less need for pain medicine after the operation.

WHO MIGHT BENEFIT FROM CAUDAL ANESTHESIA

In some infants and children who have diseases of the heart and lungs and in premature infants, there may be an increased risk to the child in giving a general anesthetic. In such children, having an operation in an area of the body below the navel, it may be safer to give caudal anesthesia alone. These children will additionally benefit from the pain relief that is experienced after the operation when using a caudal anesthetic.

HOW CAUDAL ANESTHESIA IS GIVEN

• In addition to examination by other doctors, the anesthesiologist will take a medical history and perform an examination to decide on the most appropriate anesthetic method.

• Medicine may be given to your child to bring on drowsiness.

• Thin wires from a recording machine will be placed on the skin to measure the oxygen supply in the blood, the pulse, and the blood pressure.

• An intravenous catheter will be placed to supply fluids and also will be used as a route to give medicines.

• The child will be positioned on his or her side with the hips and knees bent.

• The skin over the lower back will be swabbed with an antiseptic solution and surrounded with sterile drapes.

• A needle will be placed in a space in the lower part of the sacrum (the lowest portion of the backbone). The epidural space in which the needle is placed is an area of loose fatty tissue with blood vessels running through it. This epidural space surrounds the coverings of the spinal cord and the nerves coming from it. The spinal cord and its nerves carry signals (including those of pain) from the body to the brain.

• A solution of the local anesthetic is injected outside the coverings of the spinal cord, especially outside the dura, the outermost membrane that surrounds the spinal cord. This is why it is called epidural anesthesia.

HOW IT WORKS

• The anesthetic is able to seep through the dura (and other coverings of the spinal cord) and mix with spinal fluid that surrounds the spinal cord and its nerve branches. The anesthetic binds to specific areas on these nerves and blocks painful sensations from the wound from reaching the brain.

• Caudal anesthesia can be given in one of two ways depending on the following:
  • The type of operation.
  • The length of time the operation will take.
  • Specific considerations for a particular patient.

TECHNIQUES

The anesthetic can be given as just a single injection into the epidural space. Or, a very thin plastic catheter is inserted into the epidural space and taped in position, which makes it possible for the anesthetic medication to be given continuously during the operation and even after the operation for relief of pain, if your child needs to remain in the hospital.

POSSIBLE COMPLICATIONS

As with any procedure, complications are always possible. Although they are uncommon (serious complications with caudal anesthesia occur once out of 40,000 anesthetics), they can include temporary breathing difficulty and disturbance of heart rhythm.

A more common problem is temporary difficulty passing urine. Temporary weakness in the legs can occur after caudal anesthesia. This usually resolves within 6 to 10 hours and normal movement and weight bearing can be done after this time, unless it is not permitted because of the type of operation that was performed.

SUMMARY

As you can see, caudal epidural anesthesia, along with sedation or general anesthesia, can provide a safe and effective method for providing pain relief for infants and children having an operation on the lower half of the body.