In children, caudal anaesthesia is commonly performed. It is one of the most popular regional blocks in paediatric anaesthesia.

“Caudal anaesthesia is widely used for patients of all ages, by almost all practitioners. Most anaesthetists at all hospital types and experience levels use adjuvants with local anaesthetics when performing caudal anaesthesia. Those with more experience in paediatric anaesthesia and those in specialist centres commonly use other neuraxial and peripheral block techniques.” (Saunders, 2002).

Regardless of who performs this procedure or where it is done, when administering a caudal anaesthetic, there are some basic guidelines as to the care required.

**Principles**

- Reliable, safe technique used with general anaesthesia and ideal for abdominal and lower limb surgery.
- Prolongation of caudal analgesia can be achieved by caudal catheters or the addition of adjuvants.

**Preparation**

- Patient, self (practitioner), environment, assistant.
- Patient: suitable for regional anaesthesia, consent.
- Safety: indications, contraindications as for any regional procedure. Must have venous access prior to performing a caudal anaesthetic.
- Sterility: strict aseptic technique is required.
- Equipment: improved paediatric equipment now available, appropriate needle (Tuohy, caudal or spinal needle, venous cannula), ultrasound machine, and sterile drapes.
- Everything needed should be immediately to hand.

**Patient**

- Age: easier in smaller children, more difficult when sacral hiatus starts to ossify.
- Size: easy to perform in younger, smaller children.
- Associated syndromes and/or congenital anomalies: caution in infants and children with anorectal anomalies as they may have spinal dysraphism. “If in doubt, leave it out.”

**Position**

- Practitioner: mostly determined by the preference of the individual: sitting, standing, leaning over the child.
- Patient: lateral, usually left side down for right-handed practitioners, and right side down for left handers.

**Precision**

- Anatomy: sacral hiatus identification.
- Intercristal line bisects L5 compared with L4 or L3/L4 in adults.
- Conus medullaris at L3 compared with adults at L1.
- Sacral plate is not completely ossified, continues to fuse until about eight years.
- Placement of needle, injection of medication needs to be precise.
- How do you know you are in the right place? Clinical, “woosh”, “swoosh”, ultrasound, test dose, nerve stimulation?
Pharmacology

- Anaesthetic: bupivacaine and ropivacaine are the commonest agents.
- Additives: fentanyl, clonidine and preservative-free ketamine are the most common.
- Drugs should be patient-specific: mg/kg as per block required.

Post-operative care

- Manage side-effects if not avoided by targeting location of surgery; most commonly urinary retention, muscle weakness in unaffected areas, hypotension. Especially if a caudal catheter has been placed or additives have been used, use of a urinary catheter may be prudent.
- Pain at the site of injection, or in a nerve distribution (from nerve injury at the time of injection) should be investigated, but this is difficult to assess in smaller infants.
- Parents should be warned of the possibility of residual sensory deficits for up to eight hours after surgery, so the child should not be left alone at this time with a risk of injury to the anaesthetised areas.
- Those with a caudal catheter in situ should be managed and monitored as for an epidural.

Pain

- Response to the pain of needle insertion through the skin is normal. Pain at the time of injection of the medication into the caudal space is not normal, and injection should not continue. Re-site the needle and repeat the procedure.
- Plan for and prescribe analgesia when the caudal anaesthetic wears off.

Practical points

- Cover the injection site with a transparent dressing, not a swab, and open strip of adhesive. Cleaning fluid may be trapped and cause a chemical burn. Remove the dressing prior to discharge and document findings.
- Children with anorectal anomalies have a high incidence of spinal dysraphism, therefore do not use an advance-needle technique.
- Opioids in caudal space: monitor in high care or ICU postoperatively.

"The use of the caudal route has a long and impressive track record, but like any old friendship, it is important that we nurture and foster it appropriately. Rather than continually testing its limits, perhaps it is time to re-explore its strengths.” (De Beer, Thomas, 2003).

Bibliography