

Central Neuraxial Block for Children

Parents' Information

Introduction

This leaflet provides some basic information about the central neuraxial analgesia that your child is going to receive. If you have any questions about your child's anaesthesia that are not covered in this leaflet, your anaesthetist is happy to further discuss with you.

What is central neuraxial analgesia?

Here are some types of central neuraxial block commonly performed in children.

Spinal anaesthesia: a very thin needle is inserted between the bones of your child's spine into the spinal canal, where analgesic drugs are injected.

Epidural analgesia: a thin needle is inserted between the bones of your child's spine into the 'epidural space', which is a space outside the dura membrane covering the spinal canal. There, we can either inject analgesic drugs directly or pass a fine plastic tube through the needle into the epidural space. Analgesic drugs can be given through the tube if pain relief is anticipated for a few days.

Caudal analgesia: is a form of epidural analgesia. A thin needle is inserted near the base of your child's spine into the "caudal space", which is a space outside the dura membrane covering the spinal canal. It is commonly and safely performed in children to provide pain relief for surgeries usually below the level of the belly button. There, we can either inject analgesic drugs directly, or pass a fine plastic tube through the needle into the caudal space with continuous pain medication infusion if pain relief is anticipated for a few days.

After the central neuraxial block numbs the nerves, your child will feel very little sensation over the lower part of their body. Your child's legs will also be weak and heavy under the effect of the drug, which wears off in a few hours.

How is central neuraxial analgesia performed?

In most circumstances, central neuraxial block is performed in children under general anaesthesia, which means they will be unaware and comfortable during the procedure. After your child is asleep, they will be put to their side to expose the back. Neuraxial blocks are performed under sterile technique. Your anaesthetist will clean your child's back with antiseptic solution and inject medicine into the respective spinal / epidural / caudal space. The medicine contains local anaesthetic drugs, and sometimes combined with additional drugs to make it last longer. If a thin plastic tubing is inserted, it will be taped securely for use during and after the operation.

What are the benefits of central neuraxial analgesia?

Central neuraxial block provides good pain relief to your child by numbing the nerves, avoiding the need for stronger pain medicine, for example opioids. Hence, your child can avoid the side effects of stronger pain medicine, like nausea, vomiting, itchiness and sedation.

Who cannot receive central neuraxial block?

Your anaesthetist will determine whether your child is suitable for central neuraxial block after assessing your child's medical condition and the nature of the operation. In some conditions, central neuraxial block is unsuitable for your child, for example:

- ☒ if your child has a bleeding disorder or on medications affecting coagulation
- ☒ If your child has an infection over their back around the insertion site
- ☒ If your child has a spine problem or previous back surgery
- ☒ If your child has a history of hypersensitivity to local anaesthetic drugs



Are there any side effects?

Central neuraxial blocks are safe in children generally. The side effects and complications associated with it can be divided into those that are very common, common, uncommon, rare or very rare:.

Very common (1 in 10) / Common (1 in 100)

- Weak legs
- Inadequate pain relief
- Difficulty in passing urine

Uncommon (1 in 1000)

- Sedation and itchiness
- Dural puncture

Rare (1 in 10,000)

- Nerve damage

Very rare (1 in 100,000)

- Infection
- Haematoma
- Injection into blood
- Injection into spinal fluid

Post-operative care for children receiving central neuraxial analgesia

- **Pain relief:** your child should continue to take regular pain relief medicine as prescribed by your anaesthetist, even if your child is comfortable initially. This will help as the central neuraxial block wears off. Your child would need less frequent pain relief medicine gradually over the next few days.
- **Safety:** It may take up to 12 hours for the strength and sensation of your child's legs to return to normal, hence your child should be supervised while walking or crawling. Special precaution is required when taking hot baths during this period as your child may not be able to sense temperature and is therefore at risk of burn.



- **Recognizing red flags:** if your child develops fever, severe back pain, severe headache, sudden weakness or numbness in legs, or is unable to pass urine after a prolonged period of time, you should contact medical personnel in ward or bring your child to the nearest emergency room immediately.

Remarks

This is general information only and the list of complications is not exhaustive. Other unforeseen complications may occasionally occur. In special patient groups, the actual risk may be different. For further information please contact your anaesthesiologist.

Complications may sometimes occur despite all precautions. However, if they do occur, your anaesthesiologist will take appropriate steps to manage them.

Reference:

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4. Caudal epidural blocks in paediatric patients: a review and practical considerations British Journal of Anaesthesia, 122 (4): 509e517 (2019) doi: 10.1016/j.bja.2018.11.030
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