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Risks associated with your anaesthetic:

nerve damage associated with a spinal or epidural injection

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What is the difference between a spinal and an epidural injection?

They are both ways of providing excellent pain relief for some operations/ labour. During a spinal injection, a very thin needle is advanced between the bones of your lower back till it reaches the liquid (cerebrospinal fluid) that surrounds the nerves in this area. A single injection of local anaesthetic, with or without other pain killers, is given and the needle is removed. This injection should make you feel numb in the lower part of your body for 2-4 hours.

An epidural injection involves inserting a larger needle between the bones of the lower back till just short of the cerebrospinal fluid. A fine catheter is then guided through this needle into the epidural space and the needle is then removed. The catheter is taped securely to your skin. Local anaesthetic can then be given over a period of time to provide pain relief for several hours/ days. An epidural is used for operations longer than two hours or when pain relief is needed for several days.

What type of nerve damage can happen?

Nerve damage is a rare complication of spinal or epidural anaesthesia and is usually temporary.

- A single nerve or a group of nerves may be damaged. Therefore, the area affected may be small or large.
- In its mildest form you may get a small numb area or an area of ‘pins and needles’ on your skin
- There may be areas of your body that feel strange and painful.

Notes

- To avoid infection, all epidurals/ spinals are performed under aseptic conditions to avoid any infections and your back is kept clean and checked regularly over the next few days.

If I think I have nerve damage, what can be done about it?

Your anaesthetist will assess you initially and if required refer you to a neurologist (a doctor specialising in nerve diseases). Tests may be done to try and find out exactly where and how the damage has occurred. These might involve Magnetic Resonance Imaging (MRI), Computerised Tomography (CT scan) and Nerve Conduction Studies. Suggested treatment consists of physiotherapy, exercise, pain relieving drugs or small operations to repair the nerves.

How likely is permanent nerve damage?

The risk of damage to nerves is low. In majority people, the symptoms improve or resolve within a few weeks or months. The following figures are a guide to chances of nerve damage per spinal/ epidural injections.

The risk of permanent nerve damage is 1 in 23,500 to 1 in 50,500

The risk of paralysis or death is 1 in 54,500 to 1 in 141,500
These figures are broad guidelines. The risk may be higher or lower depending on your general health and the circumstances in which you are having a spinal/ epidural.

- Weakness may occur in one or more muscles.
- The most severe form (and very rare) leads to permanent paralysis of one or both legs and / or loss of control of the bladder or bowels.

How does nerve damage happen by spinals/ epidurals?

Direct Injury- Spinals and epidurals are blind procedures. Contact of a nerve with a spinal/ epidural needle or the epidural catheter may cause pins and needles or a brief shooting pain. This does not mean the nerve is damaged, but if the needle is not repositioned, damage can occur. If this happens, you should tell your anaesthetist and try to stay still. The anaesthetist will reposition the needle and the sensations will usually improve immediately. Injecting drugs right into a nerve instead of in the area surrounding it can also cause direct damage. Most cases of direct damage are to a single nerve and are temporary.

Haematoma- This is a collection of blood near the nerve, which collects due to damage to a blood vessel by the needle or the catheter. Small haematoma are common and do not cause damage, but larger ones can press on the nerves/ spinal cord and cause damage. This is a **very rare** problem, but may require an urgent operation to remove the haematoma to relieve the pressure on the nerves. If you are on blood thinning medicine e.g. heparin or warfarin, you are more likely to get a haematoma. In most circumstances you will be asked to stop these medicines, before you have a spinal/ epidural injection. You will need to inform your anaesthetist about these or if you have any blood clotting problems, e.g. haemophilia.

Infection- Most infections related to spinals/ epidurals are limited to skin and do not cause nerve damage. **Very rarely**, an infection can develop close to the spinal cord and major nerves. There may be an abscess (collection of pus) or meningitis. These infections are very serious and need urgent attention to prevent nerve damage. If you already have an infection elsewhere, or if you have weak immune system, you are at higher risk for these infections. You may not be offered an epidural or spinal injection.

Inadequate blood supply- Low blood pressure is common with spinal and epidural anaesthesia. It can reduce blood flow to the nerves and very rarely cause nerve damage. Anaesthetists are aware of this risk and use drugs and fluids to prevent a large drop in your blood pressure.

Other causes- There have been cases of the wrong drug being given in an epidural or spinal injection. This is an exceptionally rare event and all anaesthetists take precautions to eliminate this type of error

What else can cause nerve damage?

If you have nerve damage, it may not well be caused by the epidural or spinal injection. Other causes of nerve injury while having a surgery under a spinal/ epidural include

- Use of a tourniquet to reduce blood loss during the operation can press on a nerve and damage it. Tourniquets are used in many orthopaedic arm and leg operations.
- The position you are placed in for surgery can stretch a nerve and damage it.
- Your nerves can be damaged by the surgery. This may be difficult or impossible to avoid in some operations. In this case, your surgeon should discuss it with you beforehand.
- Swelling in the area after the operation can damage nerves.

- Pre-existing medical conditions that interfere with blood supply (e.g. Diabetes) or with nerve function (e.g. multiple sclerosis) can make damage more likely or make it difficult to determine the cause of complications.

What is done to prevent nerve injury?

Anaesthetists are trained to be aware of nerve damage and take appropriate steps to prevent them.

- To avoid direct injury, anaesthetists are trained to place spinal injections below the expected lower end of the spinal cord. This should prevent damage to the spinal cord itself.
- Spinal injections are usually performed while you are awake. If there is pain or tingling due to contact with a nerve, you will be able to warn the anaesthetist who will then be able to adjust the spinal needle.
- Your anaesthetist may also wish to do your epidural while you are awake. Direct nerve injury after an epidural injection is rare, and there is no clear evidence about whether it is safer to do epidural while you are awake or after a general anaesthetic has been given.
- To avoid haematoma, if you take blood thinning medicines (e.g. warfarin), you will be asked to stop it for several days before surgery if your surgeon and anaesthetist think it is safe to do so.
- A blood test for some drugs allows your anaesthetist to decide if it is safe for you to have a spinal/ epidural.
- There are no blood tests for some newer drugs (e.g. Apixaban), but the time the drug has been stopped for will allow your anaesthetist to decide if it is safe to go ahead.