Spinal Implants

- Interspinous process spacers are implants used to separate the spinous processes in the back to give nerves more room, easing compression and consequently relieving pain.
- There are several different types of spacer that vary in design and material.
- Although there are advantages to the use of spacers there is as yet little evidence for their long-term benefit as they are a relatively new development.

What are Interspinous process spacers?

Interspinous process spacers are devices that work by opening the foramina (the spaces between the vertebrae where nerves pass from the centre of the spine to the legs). They do this by separating the spinous processes (the vertebral bone which projects backwards from the vertebrae; you can feel them if you run your hand down your back) to allow more space for nerves to pass through. This helps to ease nerve compression and the resulting pain. Spacers also help lighten the load on the intervertebral discs and limit spinal extension, which is the position of the spine when bending backwards. This backwards position is often painful for those with spinal stenosis (narrowing of the spinal canal) as it reduces the space available for the nerve roots in the foramina and causes low back pain and usually increases sciatica on walking, a condition known as spinal claudication (after the Roman emperor Claudius who walked with a limp).

Interspinous devices may be implanted under local anaesthetic and the procedure is often a day surgery procedure. Implantation of such devices has proved beneficial for some, for example those who may not be strong enough to undergo more extensive open surgery such as the elderly.

Interspinous spacer devices are still undergoing testing, therefore data about their long-term benefits and possible complications is still preliminary and further testing is required before conclusions can be made.

Some of the spacers available include;

X-STOP Interspinous Process Decompression Device

- Used to treat cases of spinal stenosis
- Made of a strong, flexible elastic polymer
- Consists of a block placed between two adjacent spinous processes and held in place by a ribbon/cord fixing
- Studies have shown that its use produced significant reduction in the severity of pain for those who had the implant compared to those who did not.

DIAM Spinal Stabilisation

- Used to treat cases of degenerative disc disease and spinal stenosis.
- A non rigid H shaped spacer
- A polyester covered silicone bumper placed between spinous processes with a mesh band and suture to hold it in place
- Used mostly in Europe
- Studies have shown that its use produces a high rate of success based on a high rate of patient satisfaction and a low complication rate
- A relatively new device so further testing is required before its effectiveness can be fully assessed

Coflex Device

- Used to treat lumbar spinal stenosis
- U shaped device made of a titanium alloy that is placed between two spinous processes to distract them (pull them apart).
- Unique flexible U shape allows patients to bend forwards and backwards unlike many other spacers that restrict movement.
- Primarily used in Europe.
- As it is only used in Europe more testing is required before definitive conclusions can be made about its effectiveness.

Advantages of interspinous process spacers

The advantages of using spacers as opposed to other surgical methods include the fact the procedure is minimally invasive and there is no removal of any bone or soft tissue which may cause problems in itself. Also it requires no general anaesthetic and there is no long post-operative recovery to worry about. There is little risk of complications and it appears to be a cost effective treatment option.

Problems associated with Interspinous process spacer

Currently, as the use of these devices is relatively new and little is known about them and their long-term success, more testing and studies are required over a long period of time in order to be able to accurately assess their effectiveness in the wider population. Also many of these devices restrict backward movement and there is a risk of infection at the incision site, along with any of the other complications associated with surgery.

Relevant Information

For more information on these and other types of implants consult your doctor/consultant.

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