



Spine

Cervical decompression: Söring bone instrument IN PRACTICE

Narrowing of the central spinal canal (cervical stenosis) and/or the neural foramina (uncovertebral joint arthrosis with neural foraminal stenosis) occurs more frequently with advancing age. Symptoms of central spinal canal stenosis range from pain in the neck and headache to dizziness to direct damage of the cervical cord (myelopathy). This is caused primarily by the formation of osteophytes (extra growth of bone), which generally stretch from the upper vertebra across the intervertebral disc space.

Indications

Cervical decompression is frequently indicated for the following conditions:

Cervical myelopathy

Narrowing of the central spinal canal due to osteophyte formation, disc hypertrophy and prolapse (herniation) of the disc

Neural foraminal stenosis

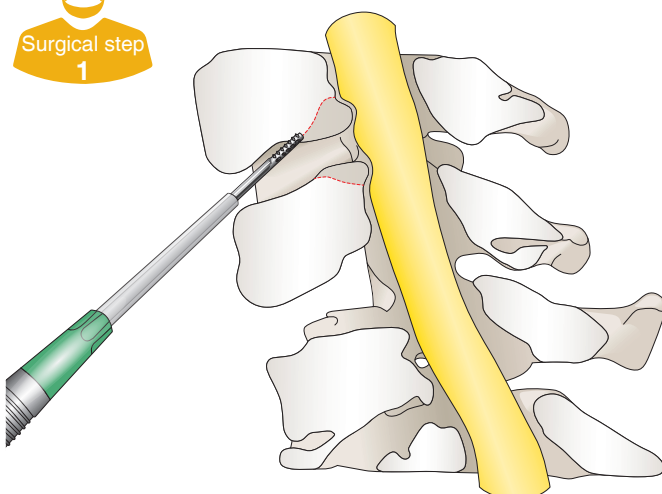
Compression of the nerve roots in the lateral spinal canal and the neural foramina due to osteophyte formation and uncovertebral joint arthrosis with neural foraminal stenosis

Procedures

Examples of applications using the Söring bone instrument with knife sonotrodes are given below:

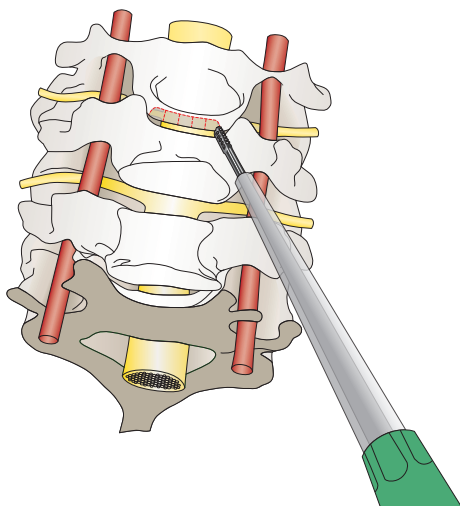
- Anterior cervical decompression
- Anterior uncoforaminotomy

Surgical procedure: anterior monosegmental decompression



Resection of the cranial osteophyte

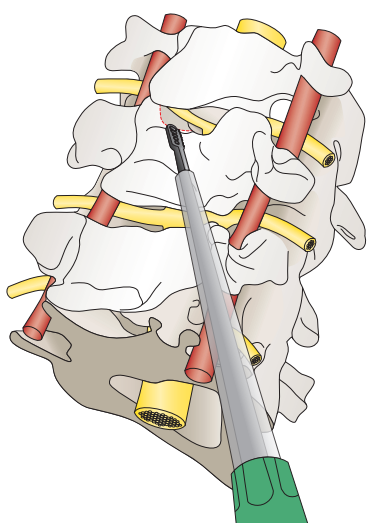
- After the intervertebral disc space has been cleared out, the osteophyte is severed from the cranial vertebral body with a cut angled upward at approximately 30°.
- The cut is started in the posterior third of the vertebral body and is continued until the posterior cortical bone is severed. Arrival at the spinal canal is signalled by a palpable loss of bone resistance. Slight sawing motions increase the cutting performance.
- Cutting proceeds from the intervertebral disc space into the wider spinal canal above the stenosis, thus preventing compression of the spinal cord at the level of maximum stenosis. Dural injuries are unlikely.



Division of the osteophyte

- With two to three vertical cuts, the osteophyte is dissected into pieces. This procedure can be done before or after severing the osteophyte. Subsequently, the pieces of bone can be extracted using a small hook or a rongeur.
- Pressure-free dissection is possible only with the Söring bone instrument. Minute sawing motions suffice. No other method enables pressure-free dissection of bone.

Surgical procedure: anterior uncoforaminotomy



Resection of the uncinat process

- Using a horizontal lateral cut, the uncinat process can be severed from the caudal vertebral body and extracted using a small hook or a rongeur. When hypertrophy is pronounced, dissection using one or more vertical cuts can be helpful.
- Use of the Söring bone instrument makes mechanical injuries of the nerve root or the vertebral artery unlikely. In the event of venous haemorrhaging, hemostatic agents and pads can be used with the ultrasonic-assisted bone instrument. There is no risk of grabbing, in contrast to methods in which rotary burs are used.

→ After both operations, fusion is often performed using cages and, if required, plating.

The bone instrument – making the difference

- Pressure-free dissection
- Precise resection
- Low temperature development
- No grabbing of pads or other hemostatic agents

Expert tip



‘The use of an ultrasonic-assisted bone instrument changes the surgical procedure. Excessive bone matter is no longer milled, but removed entirely by the instrument. Similar to methods employing dissectors, the edges of bones can be detected. A certain amount of time and practice is required to appreciate the potential of this innovative tool.’

Created with the kind support of Senior Physician Dr Jan-Uwe Müller,
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