

Technology Offer

Facet Joint Prosthesis

Ref. No.: CH558/2010

Background

Traumatic, inflammatory, and degenerative disorders of the spine can lead to severe pain and loss of mobility. Medical problems that can cause back pain include the degeneration of the facet joints or facet arthritis. One treatment option of facet joints' degenerative problems can be surgical. Spinal fusion is surgery to join two (adjacent) vertebrae together. This surgical procedure, aims to stop the motion between vertebrae, which in turn results in decreasing the pain. However, this surgical procedure has a high rate of morbidity and can potentially lead to further clinical complications, including adjacent segment disorders. Furthermore, the procedure is not reversible.

Technology

Here, we propose a new small, modular, dynamic, uni- or bilaterally applicable, lumbar posterior facet joint prosthesis. It imitates the behavior of the natural facet joint including capsule (band) and can be fixated with means of conventional multi-axial pedicle screw.

Recent analyses showed that the facet joint prosthesis can mimic the function of the natural facet joint, thereby leading to an almost normal range of motion and physiological load of the remaining structures. Furthermore, the prosthesis can be implanted using a minimally invasive approach, thereby reducing the risks of the surgical procedure.

Benefits

- ✓ Uni- or bilaterally applicable
- ✓ Can be implanted using minimally invasive techniques
- ✓ Restores full range of motion (flexion, extension and lateral bending restored 80-100%; rotation restored 85-97%)
- ✓ Physiological load of adjacent structures

Application

Facet joint replacement

Commercial Opportunity

In-licensing or industrial cooperation for further development, CE-certification and commercialization of the technology.



Fig.: Facet joint prosthesis comprising a dynamic rod separated by an elastic band

Keywords

Facet joint, prosthesis, facet arthritis, back pain, dynamic implant

Developmental Status

Prototype

IP Status

German Patent Application (11/2012)

PCT Patent Application (11/2013)

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