An Innovative Solution in the Treatment of Facet Arthropathy: The Facet Resurfacing Concept

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Introduction: Lumbar total disc replacement (TDR) has been successfully used as an alternate to anterior fusion that can also restore the interbody geometry while preserving segmental motion. Patients with significant spinal stenosis and facet arthropathy, however, are often excluded from having TDR as increased segmental motion can exacerbate dorsal spondylytic changes. The exact cause of facet arthropathy is not yet clear but degeneration is usually the main cause of this type of degenerative arthritis where the pain is caused due to the loss of cartilage between the joints. Medication, physiotherapy and injections are three main treatments that can be given to facet arthropathy patients, but the results are not efficient. Here we present a new facet resurfacing device to treat facet arthropathy due to facet degeneration.

Materials and methods: 13 patients underwent facet resurfacing procedures. The surgery consisted in a posterior minimal invasive approach to the zygapophyseal joints. The capsule was opened and the device was inserted using a special instrumentation. Three patients suffered from facet degeneration after lumbar total disc replacement, and 10 patients had facet arthropathy at an adjacent level to posterior fusion. A facet impingement was seen in all fusion cases, due to the posterior rod. All patients that had posterior fusion had the screws and rods removed at the time of surgery.

Results: The mean surgical time was 109.2 minutes, with a mean blood loss of less than 50cc. All surgeries occurred without any intra operative adverse event. Preoperative VAS was 8.25 and decreased to 1.5 only 3 months after surgery. The preoperative ODI was 58.5 and deceased to 18 at 3 months follow up visit. The radiological exams show good positioning of the device in all operated cases, with no statistical difference in range of motion at the operated levels.

Conclusion: This new device represents a dynamic facet resurfacing system that provides a safe surgical option in the treatment of facet arthropathy. Our surgical data demonstrates that it can be safely applied through a posterior approach with low surgical morbidity and good functional and radiographic outcomes in patients with facet pain. Additional long-term, randomized studies will be needed before conclusive statements can be made regarding the efficacy of the Zyga facet resurfacing system.