

Lumbar Facet Arthrodesis with Transfacet Screw Is A Definitive Solution for Facet Pain Syndrome?

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INTRODUCTION

Facet joint degenerative disease is one of the main causes for chronic lumbar pain, it is estimated that the prevalence of pain originated at the facet joint ranges from 15 to 45%, this phenomenon is becoming increasingly frequent in younger patients and it is becoming a common cause for job disability [1].

Between the choices available in the treatment for facet joint degenerative disease we have the intra-articular corticosteroid injection, which has been widely used, however the available reports in recent literature show variable results with pain relief in 30-80% of the treated population and results that generally last no longer than one year [2]. Radiofrequency has been also used to treat pain originated from the degeneration of the facet joint, the continuous stimulation results in the ablation of the surrounding nerves and tissues [2]. In contrast to the use of intra-articular corticosteroids, pulsed radiofrequency exposes nerves, capsular and synovial tissues to an electromagnetic field, rarely resulting in damage to surrounding structures. The reported rates of success for this procedure ranges from 40-90%, in most cases pain relief is only temporary.

In the past years, intra-articular injection of platelet rich plasma has gained popularity as a new alternative for patients complaining of pain secondary to a degenerative process located at the facet joints. Studies have reported a mild improvement in this therapy compared to the use of intra-articular steroids, reporting longer lasting pain relief, but with similar rates of success [3].

No matter the choice of treatment, pain relief has proved to be only temporary, most of the times patients will require repeated therapies every 3, 6 or 12 months with only few patients reporting long term pain relief [3].

At the mobile segment, the degenerative process starts at the intervertebral disc which leads to axial instability, creating in consequence an asymmetric load at the posterior facet joint which results in early degeneration of its articular surface, secondary sub-condral bone sclerosis and pain. It has become clear for us that addressing only the pain as the main axis of the management of the facet joint disease, leaving its cause without treatment, has not provided a long term solution for this increasingly common problem. Considering that the main cause for this disease is a mechanic disturbance, shouldn't the ideal solution be also mechanic?

When managing degenerative arthrosis at other locations (including the knee, ankle, hip or shoulder), the definitive treatment is either articular replacement or arthrodesis of the affected joint. The final target of the surgical management is to eliminate movement at the damaged joint surfaces by replacing them or merging them.

In the treatment of the facet joint degenerative disease the use of anterior and posterior fusion systems (transpedicular screws, anterior fusion systems ALIF, XLIF, TLIF) has been used to eradicate movement at the affected joint, providing long lasting pain relief, however this therapy implies undesirable consequences for an active patient due to segmentary spinal rigidity.

The use of a transfacet screw provides with an alternative to perform an arthrodesis at the affected facet joint in search to avoid further movement between degenerated joint surfaces, therefore eliminating the pain generator [4]. These screws can be used alone or after the use of an anterior fusion system.

There are still some unsolved issues when addressing the use of transfacet screws: considering the small gap in which high

stress forces would be applied against the length of the screw, what would be the best material to avoid early fatigue? What would be the long-term effect of the loss of motion at the posterior arch over an already degenerated intervertebral disc? Is there any risk of associated pars interarticularis fracture due to rigidity? What patient would be the ideal candidate to perform this procedure?

Well designed studies of the functional outcomes, immediate, mediate and long term complications are still necessary to state the advantages, disadvantages, and indications for this technique, however it is our opinion that, if the possible generators of undesirable outcomes are well addressed and the patients are correctly selected, the transfacet screw could become a simple and definitive solution for the facet joint degenerative disease.

CONFLICT OF INTEREST

None declared. None of the authors have any association with pharmaceutical or medical manufacturing companies; none are consultants of any company.

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