

Spondylolysis: A MISS approach and small case series

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Introduction

Spondylolysis is defined as a defect in the pars interarticularis. The overall incidence is 5% and young active males are most affected. It is most common at the L5 level (87%). An instability in the antero-posterior plane predisposes these individuals to spondylolisthesis and degeneration of the intervertebral disc.

Classic treatment option is fusion of the affected level, which decreases mobility and increases loading of the adjacent segments.

Surgical reconstruction of the defect restores normal anatomy and function and is an attractive alternative to fusion.

Methods

A series of 3 patients with spondylolysis and low back pain worsened by straining were submitted to bilateral surgical reconstruction of the pars interarticularis using a modified Buck technique. Osteosynthesis screws were percutaneously passed through the defect, which was then grafted with locally harvested bone using a MISS approach.

Pain was evaluated using a Visual Analogue Scale (VAS) and disability was measured using the Oswestry

Results

Average age: 21,6 yo; Average Follow-up period: 21 months.

Average pre-operative and 6 month post-operative VAS scores: 8 and 3,7. ODI scores: 61% and 17%.

Post-operative CT scans showed correct osteosynthesis material positioning but a lack of defect consolidation.

Conclusions

By restoring normal anatomy and stability, this technique can avoid facet joint and intervertebral disc degeneration, delaying or even avoiding the need for fusion.

It is feasible to assume that the surgical reconstruction of the pars interarticularis of asymptomatic individuals with bilateral spondylolysis could prevent them from needing more aggressive treatment alternatives in the future.

Patients improved clinically without radiologic evidence of defect consolidation. The absence of consolidation makes these patients more prone to stress fractures of the osteosynthesis screws.

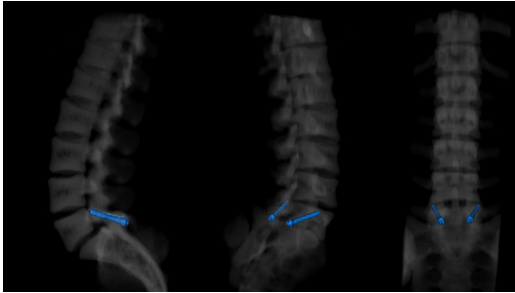
Surgical reconstruction of the pars interarticularis is a valid treatment option of spondylolysis.

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Incision size



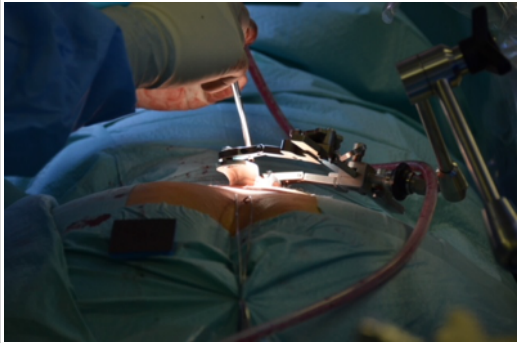
Screw placement



Learning Objectives

To determine if pars interarticularis reconstruction is a valid alternative to fusion in the treatment of spondylolysis.

MISS retractor



Intra-operative X-Ray

