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Standalone Anterior Interbody Fusion Procedure for the Treatment of Low Grade Spondylolisthesis
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Background: Spondylolisthesis may cause local instability, facet distraction, and central and foraminal stenosis. The most used surgical option is a posterior slippage reduction and stabilization by pedicle screws and rods, but the literature reports increased postoperative complications on these techniques. Here, we propose an anterior one-stage approach for the treatment of spondylolisthesis without the need of direct decompression of the neural structures and posterior supplementation.

Methods: Five patients and six lumbar levels were treated by one-stage anterior approach, through a mini-ALIF procedure. It was utilized a special interbody cage, which has two screws that fixes at the upper vertebral body and one fenestrated screw that reaches the lower vertebral body. All screws pass through the device. Pre, intra and postoperative early, 6 weeks, 3 and 6 months data were collected, including radiological and clinical outcomes.

Results: Three patients were enrolled in this series, and four lumbar levels were treated (3 were L5S1 and one L4L5). The average surgical time was 110 minutes and no intraoperative complications occurred. In all cases were achieved the surgical objectives: disc height gain, vertebra slippage correction, spine level stabilization, axial and/or radicular pain reduce.

Conclusion: Low grade spondylolisthesis was treated using stand alone anterior interbody fusion device without posterior decompression and supplementation. Good clinical and radiological results were achieved, providing the efficacy of the procedure in the treatment of different spondylolisthesis etiologies. Long term follow up evaluation is still needed to testify the efficacy of the proposed treatment.