

Twelve Month Outcomes of Patients Treated With MIS Fusions via a TLIF Approach: Comparison of Two Different Interbody Devices

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Purpose: Minimally invasive fusion techniques have evolved in the last 10 years. The advent of MIS pedicle screw systems led to an increase in MIS procedures. Accessing the interbody space has required partial removal of the lateral facet to allow for insertion of the disc debridement tools and implantation of the interbody device (s). Refinements in TLIF techniques and device designs have resulted in treatments requiring little or no bone removal, or neural retraction. We present outcome results from two prospective, consecutive case series of patients. Both devices were placed via an MIS TLIF approach. Series I was treated using PEEK devices augmented with MIS posterior hardware. Series II was treated using an expandable mesh device with MIS posterior hardware. Each series of patients represents the first 31 cases completed by the primary author.

Methods: Data was collected prospectively for all patients involved in this trial. Qualified patients completed pre and post-op outcome questionnaires. Series I completed the SF 36, Series II completed the SF 8. The interbody device used in series I was implanted through a 22mm cannula. The device used in series II can be implanted through access portals from 7-22mm. Implantation of the interbody device in series II was accomplished without removing any bony or soft tissue. Working portals retracted soft tissue in both groups. Paired student t- tests were used to evaluate the differences in outcome and operative data (compared to baseline).

Results: 31 patients were involved in each prospective case series. Outcome data is presented in the following tables. In series I all patients were single level fusions and there were five complications associated with device implantation. In series II there were 17 single level implantations, 12-two level implantations and 2-three level implantations. Longer operative times, and higher blood loss occurred in the multi level operations in series II. There were no complications in series II. Radiographically, the devices in series II appear to be progressing towards a mature fusion, there are no visible lucencies or halo's or loosening of the posterior hardware. Radiographic data is continuing to be collected and will be analyzed at 24 mos for evidence of mature fusions. Comparative data will be presented.

Conclusions: Interbody fusion can be effectively accomplished using MIS techniques. An expandable mesh device offers the added benefits of a smaller access portal, less bony removal, less neural retraction, fewer complications, lower blood loss, less hospital stay and lower operative time. Patient outcome data in these patients demonstrates better early post operative outcomes for the expandable mesh device in the first three months post operatively, and better or equivalent results at twelve months.

Key words: outcomes, MISS, comparative, lumbar, mini open