MI-TLIF (Minimally Invasive TLIF) Combined with MED System in the Treatment of Multi-level Lumbar Spinal Stenosis and Instability

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Objective: To evaluate the clinical outcomes and advantages of MI-TLIF (minimally invasive TLIF) combined with MED system in the treatment of multi-level lumbar spinal stenosis and instability. Results were compared with traditional posterior median approach, such as PLIF (posterior lumbar interbody fusion).

Methods: From June 2009 to August 2010, 13 patients were selected with multi-level lumbar spinal stenosis and instability by using MI-TLIF (minimally invasive TLIF) with one cage and pedicle screw combined with MED system. 2 segments in 8 cases, 3 segments in 4 cases, 4 segments in 1 cases, 2 segments fused in 3 cases, 1 segments fused in 10 cases. 6 males and 7 females, aged 56 to 78 years, average 67.4 years old. Clinical effects were compared by blood loss (3 segment stenosis), after bed time, preoperative and postoperative JOA scores and other indicators were statistically analyzed.

Results: Blood loss in minimally invasive group was 470±62ml (380~660ml), mean bed rest was 5 to 7 days, Preoperative JOA score of 17, after 24; blood loss in traditional group was 810±94ml (760~950ml), mean bed rest was 45 to 49 days, Preoperative JOA score of 17, after 25. Both groups in blood loss, postoperative bed rest time were statistically significant (P< 0.05). and no significant differences were found in JOA score (P >0.05).

Conclusion: MI-TLIF with one cage and pedicle screw combined with MED system in the treatment of multi-level lumbar spinal stenosis and instability shows great advantage in blood-loss, incision length, bed stay time by comparing with traditional method (PLIF). It is a valuable method of minimally invasive spinal surgery with obvious advantages.

Keywords: MED; MI-TLIF; PLIF; multi-level lumbar spinal stenosis and instability