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### Comparison between Minimally Invasive and Open Transforaminal Lumbar Interbody Fusion

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#### Abstract

**Objective:** To compare the clinical and radiographic outcomes between minimally invasive and open transforaminal lumbar interbody fusion (TLIF) for treatment of lumbar spondylolisthesis

**Material and Method:** A retrospective clinical study of 24 consecutive cases of lumbar spondylolisthesis treated by minimally invasive TLIF (n = 12) or open TLIF (n = 12) was done at Ramathibodi Hospital between June 2008 and December 2009. The following parameters were compared between the two groups, clinical and radiographic outcomes, blood loss, operative time, length of hospital stay, and complications.

**Results:** The average duration of follow-up was 28 months (range, 24 months to 38 months). There was significantly less intra-operative blood loss in minimally invasive TLIF group comparing to open TLIF group (317 cc vs. 645.83 cc: p-value = 0.04). No significant difference was observed in clinical outcomes (VAS or ODI at 2 years), radiographic outcome (91.67% fusion rate in both groups), operative time (340 minutes vs. 324 minutes: p-value = 0.96) length of hospital stay (8.42 days vs. 8.33 days: p-value = 0.09) and major complication (8.33% in both groups) between the two groups.

**Conclusion:** Minimally invasive TLIF has similar clinical outcomes and fusion rate compared to open TLIF with additional benefit of less intra-operative blood loss. However, the operative field of this technique is limited so thorough knowledge of anatomy in this region is required.

**Keywords:** Lumbar spondylolisthesis, Minimally invasive, TLIF, Transforaminal lumbar interbody fusion

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