Clinical: Lumbar Fusion (i.e. MIS, TLIF, XLIF, Axial LIF, ALIF)

Mini-open Lateral Approach for Anterior Lumbar Interbody Fusion

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Introduction: Recently, minimally invasive lateral approach is revived and gaining popularity under the name of XLIF or DLIF by modification of miniopen method using sequential tubular dilator and special expandable retractor system.

Purposes: The purposes of this study were to introduce the mini-open lateral approach for the anterior lumbar interbody fusion (ALIF), and to investigate the advantages, technical pitfalls and complications & to provide basic knowledge on XLIF or DLIF.

Materials and methods: Seventy-four patients who underwent surgery by the mini-open lateral approach from September 2000 to April 2008 with various disease entities were included. Blood loss, operation time, incision size, postoperative time to mobilization, length of hospital stay, technical problems and complications were analyzed.

Results: With this approach, we can reach from T12 to L5 subdiaphragmatically. The blood loss and operation time of patients who underwent simple ALIF were 61.2 ml and 86 minutes for one level, 107 ml and 106 minutes for two levels, 250 ml and 142.8 minutes for three levels, and 400 ml and 190 minutes for four levels of fusion, respectively. The incision sizes were on average 4.5 cm for one level, 6.3 cm for two levels, 8.5 cm for three levels and 10.0 cm for four levels of fusion. The complications were retroperitoneal hematoma in two cases, pneumonia in one case and transient lumbosacral plexus palsy in three cases.

Conclusion: The mini-open lateral approach is simpler & safer than XLIF or DLIF with very short learning curve. However, in long level fusion, XLIF or DLIF would be more advantageous. Trial of miniopen lateral approach would be helpful before trial of XLIF or DLIF.

Keywords: Lumbar spine, Mini-open lateral approach, Interbody fusion