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**Reoperation Rates after Microdiscectomy with and without Anular Repair**

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**Introduction:** Reoperation after lumbar microdiscectomy occurs at a reported rate of 5-20%. Anular defects are thought to be the primary cause of reherniations and, until recently, repair of the anulus was time-consuming and technically difficult. This retrospective study reviews a single surgeon's experience using a commercially-available soft tissue closure system to repair the anulus after lumbar discectomy.

**Methods:** A consecutive series of primary lumbar microdiscectomy cases (n= 106) over a 12-month period (Jan to Dec 2008) was studied. In forty-five patients (n= 45), anular repair (AR) using tissue approximation (Xclose™ Tissue Repair System; Anulex Technologies, Minnetonka MN) was performed at the conclusion of the procedure. In the remaining sixty-one cases (n=61), defects in the anulus were left unrepaired. Clinic follow-up averaged 1.3 +/- 1 months (range: one week to six months) depending on symptom resolution. Chart review was conducted when all patients were a minimum of six months from their primary surgery. Chart review determined whether repeat surgery was required and whether it was performed at the same level and same side. Secondary analysis compared microdiscectomies performed in the first six months of 2008 (i.e., with consideration of AR) to those in the first six months of 2007 (i.e, no consideration of AR).

**Results:** In cases without anular repair, 6.6% (n=4) required a second discectomy at the same level and side; considering one of these patients required a third surgery (arthrodesis), the reoperation rate was 8.2%. When anular repair was performed, one (2.2%) reoperation was performed, although on the contralateral side at the same level. Six month year-over-year analysis showed 11.1% (n=8) of discectomies in 2007 needed a second surgery compared to 6.0% (n=4) of discectomies in the first half of 2008, irrespective of whether anular repair was performed.

**Discussion:** This study demonstrated the effectiveness of repairing the anulus fibrosus by reducing the need for repeat surgery after lumbar microdiscectomy by 45 to 65%. Although not all patients are candidates for this procedure based on intraoperative surgeon judgment, consideration of this technique can be beneficial in potentially reducing the risk of reherniation requiring reoperation after lumbar microdiscectomy.