

Admission and Acute Complication Rate for Outpatient Lumbar Microdiscectomy

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This study, undertaken at a major neurosurgery and spine surgery centre, investigates acute complications and conversion rate to inpatient hospital stay in patients undergoing outpatient lumbar microdiscectomy.¹ It compares these outcomes for a neurosurgeon without subspecialty training in spine surgery (NS) to a group of four spine surgeons (SS). Data were gathered from prospectively kept databases, over 11 years for NS, composed of 269 patients, and 4 years for SS, composed of 137 patients. The patient characteristics were similar, except that 11/269 cases in the NS group were revision surgeries compared to 51/137 revision surgeries in the SS group. The technique of open microdiscectomy was used in the NS group, whereas in the SS group two of the surgeons used a tubular, 'minimally invasive' method.

The acute complication rates were similar, being 6.3% and 7.3% overall for the NS and SS groups respectively. For non-revision surgery, in the NS group there were 7/258 dural tears, 1/258 cases of urinary retention, and 6/258 radiculopathies; in the SS group, there were 1/86 dural tears, 0 cases of urinary retention, and 0/86 radiculopathies. For revision surgeries, there were 3/11 dural tears and 1/11 radiculopathies in the NS group; and 9/51 dural tears and 0/51 radiculopathies in the SS group. There were no statistically significant differences in the complication rates among groups.

The other outcome described in the study was that of conversion to inpatient hospital stay. Of the 19 admitted patients, the causes leading to admission were unknown in five, dural tear in three (17 patients with dural tears were not admitted), airway compromise in three, urinary retention in two, and pain in two. Conversion rates to inpatient stay were similar in the SS and NS groups – approximately 4% for first time surgery and 8% (in the SS group) for revision surgery.

This comparative study is interesting and provides insightful information in two main categories. The first is as it pertains to lumbar microdiscectomy specifically. The study outlines the complication rate (approximately 7%) and conversion to inpatient hospitalization (approximately 4% for first time surgery and 8% for revision surgery) in patients who are to be discharged home after lumbar microdiscectomy. These numbers generally represent what can be expected and can be used for patient counseling and bed planning.

This study is also revealing in the category of outcomes in surgeries performed by subspecialists versus non-subspecialists (in this case the non-subspecialist was a brain tumor specialist). There are data in other surgical fields suggesting that outcomes are better for surgeons with both subspecialty training and higher volumes^{2,3}. On the other hand, this study suggests that, for lumbar microdiscectomy, having subspecialty training in spine surgery is not a predictor of a lower complication rate. This is a very important feature of the study, and it would be interesting to

look into complications rates and longer term outcomes for other types of spine surgery using similar methodology.

Limitations of this study include that, even though prospectively kept, the databases were collected differently and therefore may not be fully comparable. Also, the surgical technique in the SS group included tubular surgery (it is not stated how many of the 137 cases in this group were performed through this 'minimally invasive approach'). The minimally invasive technique of lumbar microdiscectomy may be associated with shorter hospital stays⁴, again implying that the data in the NS and SS groups may not be fully comparable.

It would be helpful to have information regarding any adverse effects, such as delayed hospitalization and infection, in the 17/20 patients with intraoperative dural tears who were not admitted to hospital. This would have implications to the surgeon in deciding whether to send a patient home on the same day when an intraoperative CSF leak has occurred.

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