

# New Territories West Cluster



## Is Minimally Invasive Spine Surgery safe and reduce hospital stay compare with Traditional Spine Surgery?

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### INTRODUCTION

In general patients have negative impression with spine surgery. The general public relates spine surgery with paralysis, high risk with massive blood loss, long rehabilitation. The introduction of Minimally Invasive Spine Surgery (MISS) is good news to many potential spine surgery candidates. It was widely publicized in media with minimal pain, safer and shorter rehabilitation. Our study aim is compare the MISS technique with traditional technique on treatment of lumbar spinal stenosis patient in public hospital setting.

### METHOD

This is a retrospective cohort study of lumbar spinal stenosis with posterior decompression surgery done in Tuen Mun Hospital from 1999 to 2009. Patients with significant back pain/ spinal instability requiring fusion surgery are excluded. Before the introduction of MISS technique in early 2008 all patients were operated in standard bilateral laminotomy technique ( Fig 1). In the MISS group the more symptomatic side is approached leaving muscle/ facet joints of the contralateral side intact. Operative view is magnified using surgical microscope or loupe. From 2009 we employed the tubular retractor ( MeTrx®, Medtronic, USA ) further minimize the size of surgical wound (Fig 2 &3). Peri-operative parameters, length of hospital stay and complication rate are compared.

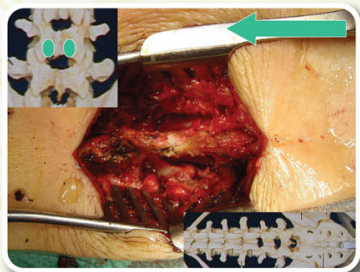


Fig 1  
• Traditional laminotomy involve dissection of bilateral paraspinal muscle

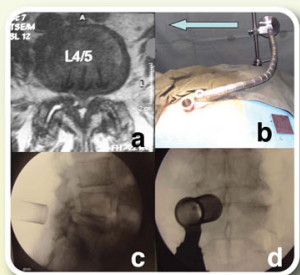


Fig 2  
• a: Pre-operative MRI showed spinal stenosis at L4/5  
• b: Intra-operative view using tubular retractor  
• c&d: Intra-operative X-ray screening

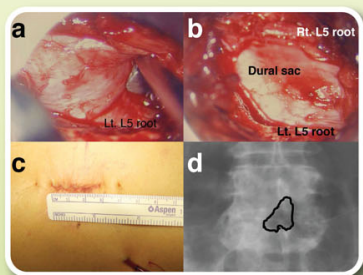


Fig 3  
• a&b: intra-op picture showing decompressed dural sac and nerve roots  
• c: small wound  
• d: amount of bone removed in postoperative X ray

### RESULTS

From 1999, 204 patients were operated in traditional technique. From 2008, 48 patients were operated MISS technique. The mean follow up in MISS group is 12.8 months. The age, pre operatively scoring are statistically insignificant between the 2 groups. The mean hospital stay for traditional technique is 10 days statistical significantly reduced to 5.4 days with MISS technique (fig 4). We assess the clinical outcome with Japanese Orthopaedic Association (JOA) lumbar score, Oswestry Disability Index and Visual Analog Score (VAS) at 6 months post-operation (Table 1). The outcomes between 2 groups are statistically insignificant. The overall complication rate for traditional group is 15.7% and for MISS group is 10.4% respectively. There were 4 cases of accidental durotomy in MISS group mostly occur in early cases. There was one case of transient weakness in early post-operative period which recovery completely during subsequent follow up. There was no infection in the MISS group. There was no permanent neurological deterioration in either group.

Fig 4 LOS trad vs MIS

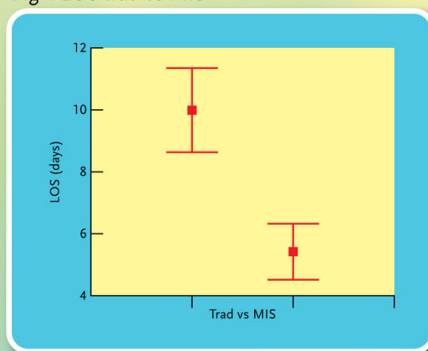


Table 1

	JOA lumbar score	ODI	VAS
Traditional group	25.1	19.8	3.67
MISS group	23.3	20.4	2.98

### CONCLUSION

The MISS is a safe technique significantly reduces hospital stay in posterior decompression of lumbar spinal stenosis patients. The MISS technique has comparable clinical improvement and complication rate compared with traditional technique.