

What's New in Minimally Invasive Spine Surgery (MISS) in Singapore ?

2006-7 was an exciting year for MISS, with the successful completion of a clinical trial on ambulatory lumbar disc surgery, culminating in Merit Award in the Ministry of Health Clinical Quality Improvement Celebration Poster Competition held on 10-12 Oct 07. In the study, not only did we achieve our aim of discharging 90% of patients within 24 hours after elective lumbar disc surgery, our patients also saved an average of 44% hospital stay expenses per day (Figure 1). This rapid postoperative recovery after a major spine surgery is only possible with MISS technique during surgery (Figure 2).

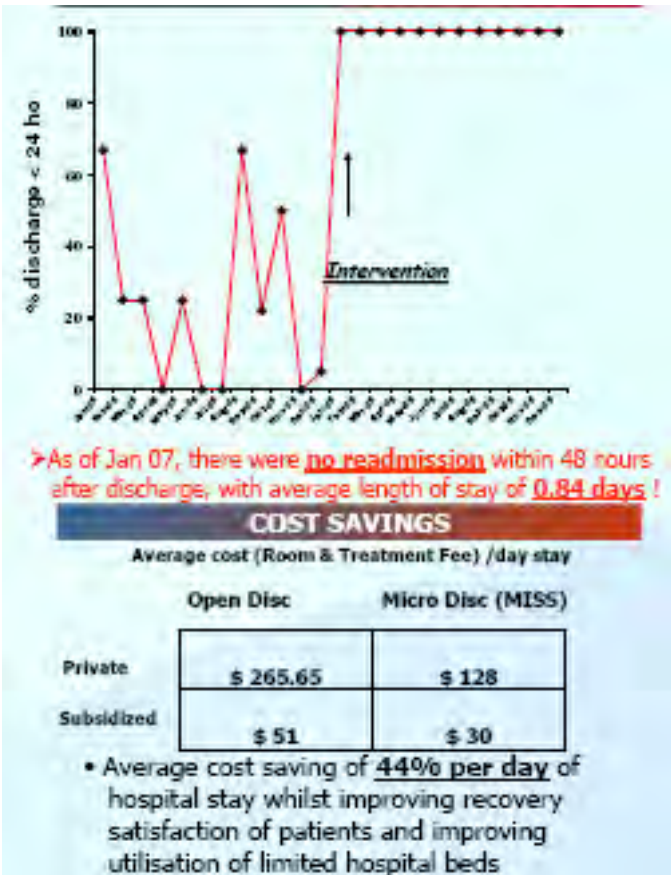


Figure 1
An abstract from poster “Patients Can Be Discharge Within 24 Hours After Lumbar Spinal Disc Surgery” (<http://www.moh.gov.sg/mohcorp/hcssystem.aspx?id=16642>)

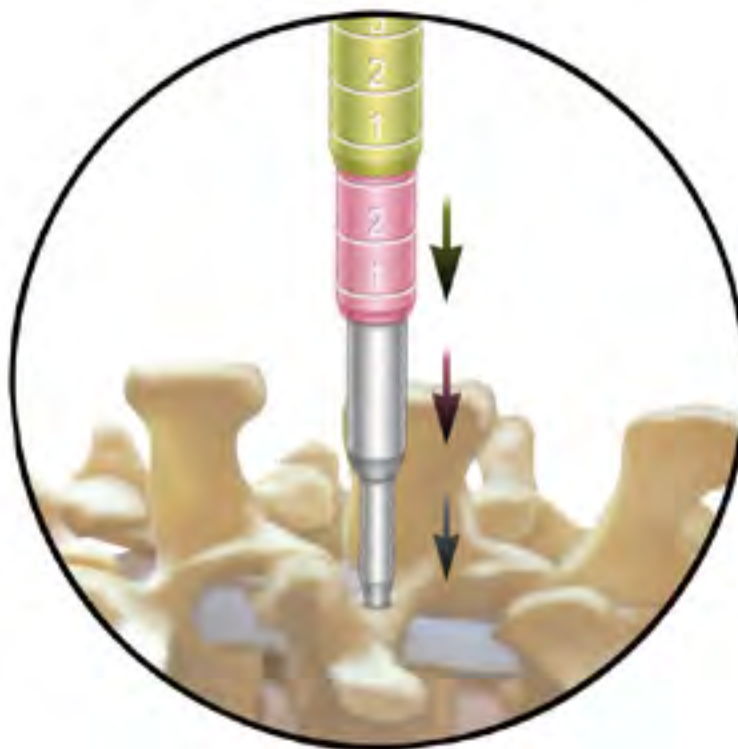


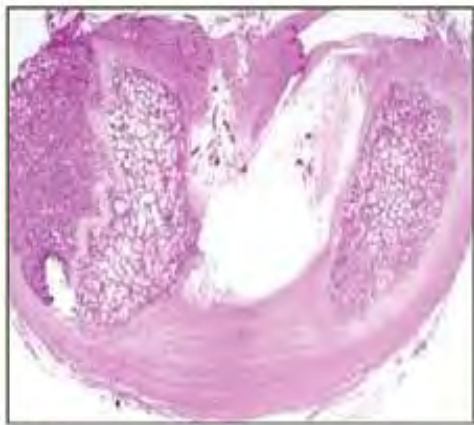
Figure 2

Dilators and Tubular Retractor used in Minimal Access Surgery to the Lumbar Spine.

This technique is exceptionally useful in relieving sciatica from acute non-contained disc “rupture” (Figure 3), with 90% of patients experiencing immediate relief in their predominantly radicular leg pain. But the majority of patients often experience predominantly axial back pain resulting from repetitive strain, leading to a contained disc “bulge”. While some patients will still need surgery, there is now an even less invasive method to reduce painful disc pressure which involves removing a small amount of tissue from the nucleus through a tiny puncture in the skin, like releasing “air” from a bulging tire, by using a radiofrequency-charged plasma field to extract nuclear tissue without damaging the disc (Figure 4). This percutaneous procedure is done with the patient awake, lasting <1 hour, and going home with only a small bandaid. Best of all, at least two-thirds of appropriately selected patients experience instantaneous pain relief, so both surgeon and patient know immediately whether the treatment has worked (Figure 5).



Figure 3
Sagittal MRI showing non-contained disc herniation.



Photomicrograph showing safe volumetric removal of nucleus with no disruption or necrosis to the surrounding vital spinal structures.

Figure 4
Cross-section of a lumbar disc after percutaneous nucleoplasty.

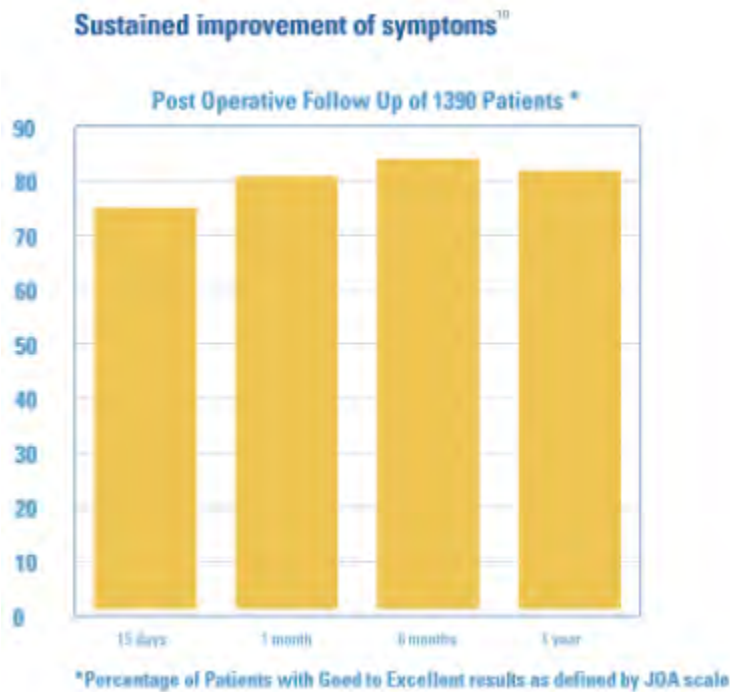


Figure 5
An abstract from study “Percutaneous Nucleoplasty for Discoradicular Conflict.” A. Alexandre, L. Coro, A. Azuelos and M. Pellone. *Acta Neurochir* (2005) [Suppl] 92: 83-86.

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