

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).

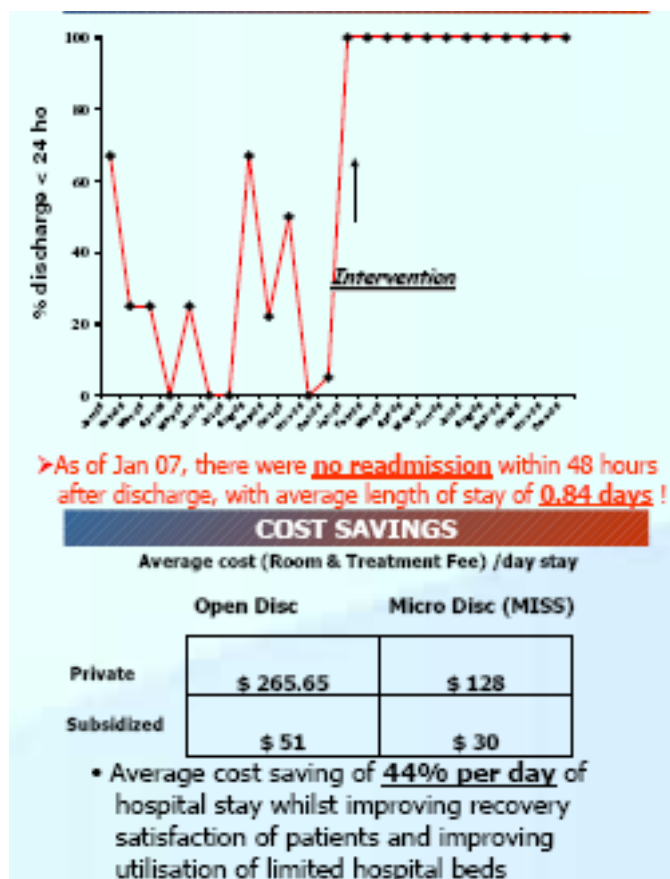


Figure 1

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>)

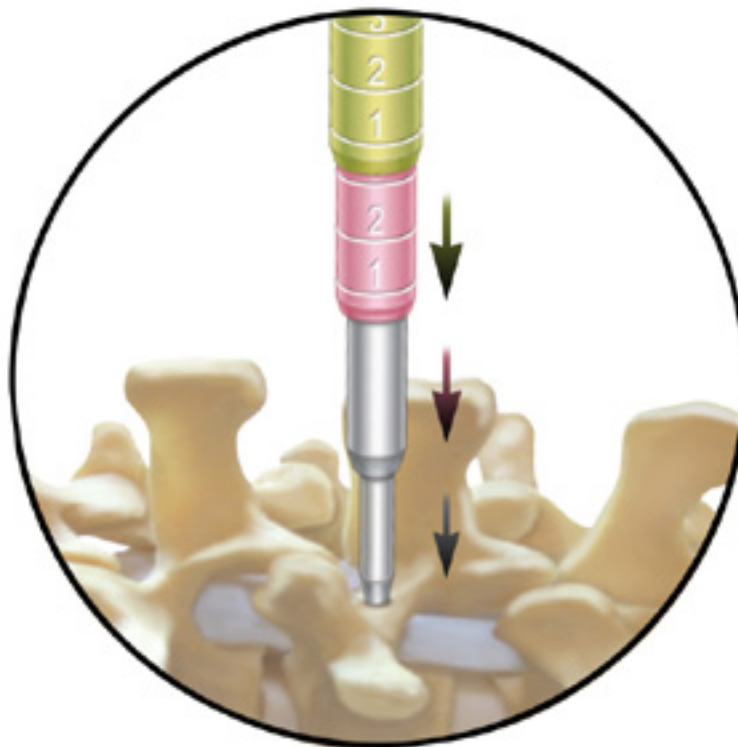


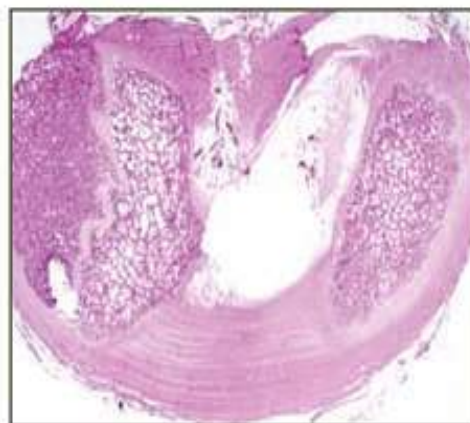
Figure 2
Dilators and Tubular Retractor used in Minimal Access Surgery to the Lumbar Spine.

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 contained and non-contained disc herniations





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.

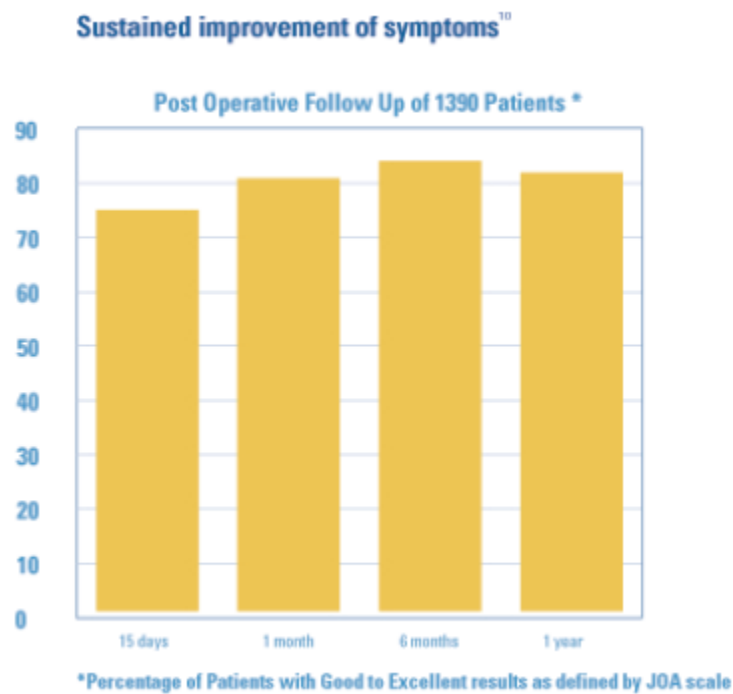


Figure 5
An abstract from study “Percutaneous Nucleoplasty for Discoradicular Conflict.” A. Alexandre, L. Coro, A. Azuelos and M. Pellone. *Acta Neurochir* (2005) [Suppl] 92: 83-86.

Dr Fong Shee Yan, Consultant, Orthopaedic Surgery and his patient interviewed

Ouch, my back!

Back to biking after surgery

By June Cheong

Nearly a year after his surgery, Mr Hong is mountain biking, running regularly and training for the Standard Chartered Singapore Marathon in December. -- ST PHOTO: WONG KWAI CHOW

Shooting pain in the right leg and debilitating back pain do not afflict Mr Hong Khai Hwa anymore - thanks to spinal surgery he underwent.

Mr Hong, 38, a service manager in the semi-conductor industry, said: 'It has given me a new lease of life.'

Last November at **Tan Tock Seng Hospital**, he had percutaneous nucleoplasty, a minimally invasive spinal surgery which removes tissue from a damaged disc to decompress the disc and relieve the pressure it exerted on nearby nerves.

Within a month of the \$11,000 operation, he was walking normally again. The biking enthusiast was soon back on his mountain bicycle.

Mr Hong, who is married without children, said: **'My doctor, Dr Fong Shee Yan, said I can do whatever I want but I must be careful.'**

To that end, Mr Hong makes sure he does 15 minutes of core strengthening exercises at least four times a week to build up his back muscles. He learnt those exercises while on a three-month post-surgery programme which teaches patients how to take care of and strengthen their backs.

Ironically, it was mountain biking - as well as a host of other sporting activities - that landed Mr Hong with a bad back.

He developed lower back pain in 1999 because of the accumulated stress in his back from 'national service and doing a lot of sports'.

He said: 'When it began, I felt the pain every morning when I woke up. I needed to sit up in bed for a bit and let my back muscles relax before I could get up to brush my teeth.'

He had to stop running, mountain biking and playing tennis.

In 2000, he sought medical help and underwent conservative treatments like physiotherapy and heat treatment.

However, he still suffered relapses and episodes of acute back pain almost every year and would be bedridden for at least a week each time.

He said: 'The episodes were usually triggered after I did a vigorous sport or carried heavy stuff. Once, I sneezed and that tore my back muscle.'

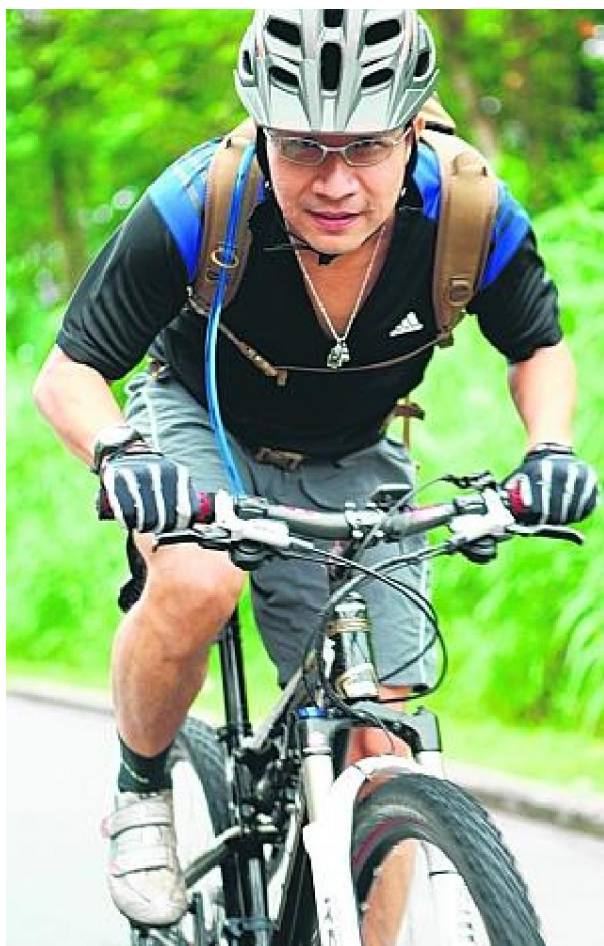
That incident landed Mr Hong in hospital for a week and he had to work from home for two months after his discharge.

Besides back pain, he had also been suffering shooting pain in his right leg for more than six years.

Last year, an aunt, who works in Mount Elizabeth Hospital, came across an article on minimally invasive back surgery. Mr Hong jumped at the chance to regain a pain-free back.

Nearly a year after his surgery, he is mountain biking, running regularly and training for the Standard Chartered Singapore Marathon in December.

He said: 'I'm almost back to normal. I'm back to mountain biking every weekend.'



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1. Medtronic Sofamor Danek, Memphis, TN
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