

WHAT'S NEW

Minimally Invasive Spine Surgery

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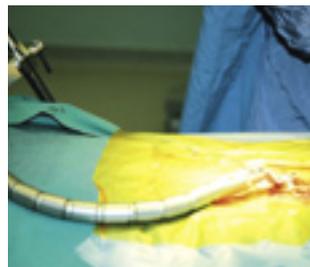
Surgery on the spine that once required large incisions, hours in the operating room and extensive blood loss, can, in some cases, be done through an incision less than an inch long.

After the common cold, back and neck pain are the second most frequent reason that Americans visit the doctor, according to the North American Spine Society. Treatment of low-back pain alone costs Americans at least \$50 billion each year and is the most common cause of job-related disability and a leading contributor to missed work.

Minimally invasive spine surgery, for the right patient, can make the sometimes difficult decision of whether to undergo surgery a little easier. In traditional spine surgery, a surgeon has to make a large incision and dissect several layers of muscle to access the area of the spinal column he or she is trying to correct. The injury caused by cutting through this muscle and tissue significantly adds to a patient's recovery time after surgery. In some cases, it can leave long-lasting weakness in the back muscles. Minimally invasive techniques limit injury to surrounding muscle and tissue without compromising results.

A vivid example is a procedure called endoscopic lumbar microdiscectomy, which is used to treat a ruptured or herniated disc in the lower back. The bulging disc compresses nerves in the spine, causing disabling leg pain. Traditional discectomy requires lengthy incisions and the stripping of several levels of muscle to give the surgeon a good view of the area where the disc material compressing the nerve needs to be removed. Now, microdiscectomy can be done through a two-cm incision. A tube is inserted through the incision, creating a tunnel for the surgeon to reach the affected disc with a microscope and surgical

instruments with minimal blood loss (Huang 2004, J Orthop Res 23: 406-11). Patients typically can go home the same day or next. This is achieved as post-operative pain is significantly reduced and these often young working adult patients can return to work early. In fact, the average number of disability days was reduced from 49 to 27 days (Hermantin 1999, JBJS 81: 958-65).



Tube during surgery



Removal of tube



Healed wounds after posterior fusion

Cement is injected into the weakened vertebrae, creating almost immediate pain relief.

Dr Fong Shee Yan is a Consultant Surgeon with the Orthopaedic Department of Tan Tock Seng Hospital. He was trained in Calgary Spine Center, Canada.

Other spine procedures that now may benefit from minimally invasive approaches include: lumbar fusion to correct back and radiating leg pain caused by spondylolysis, a defect or fracture of the wing-shaped parts of a vertebrae in the lumbar region or lower back. The fusion procedure, which traditionally required an incision that exposed the vertebrae, can now be done through an incision an inch long. Similarly, the rods and screws that hold the spine in place while the fusion heals can be inserted via multiple small incisions even less than an inch. Thoracoscopic instruments — tools that aid in visualization and operation through portal holes in the chest — allow a surgeon to address part and, in some cases, the whole correction of a patient with scoliosis. During kyphoplasty to treat painful vertebrae fractures caused by osteoporosis, the surgeon makes two small incisions and inserts a tube in the centre of the vertebrae.

Dr Fong is a member of the North American Spine Society, American Academy of Orthopaedic Surgeons, American Association of Neurological Surgeons, and AO Spine North America. His special interest is in minimally invasive spine surgery (including endoscopic surgery and kyphoplasty).

For enquiries and appointments, please call our specialist appointments hotline at 9666 6698 (24 hours) or email: gp@ttsh.com.sg

The Orthopaedic Surgery Clinic is located at Clinic B1A (Basement 1) of Tan Tock Seng Hospital.