

## Thoracolumbar Surgery 胸腰椎手術

**Side and level:** (please tick the appropriate)

Right     Left     Midline Level: \_\_\_\_\_

### **Purpose of Surgery**

Thoracolumbar surgery is indicated when pathologies arising from either the bony spinal column or the neural structures including the spinal cord and the nerve roots. For the spinal column, pathologies may cause instability of the column, or it may cause compression to the neural structures; in these cases, surgery can stabilize the column and decompress the neural structures. Various kinds of tumours may be arising from the spinal cord, the nerve roots, the spinal column or even the surrounding tissues, surgery is indicated in these circumstances for tumour excision and provides histological diagnosis.

### **The Procedure**

The surgery is usually categorized to anterior, lateral or posterior approaches. And the route of entry can be either open or endoscopic. For the posterior approach, it is usually done in open manner, meaning that the wound would be larger. Regardless of the route and the approach, the pathological site is approached, surrounding structures especially the neural and the vascular structures are protected, and the diseased tissue will be resected. Depending on the stability of spine after resection, implants (either metallic construct or bioactive substances) may be inserted for reinforcing structural integrity or promoting bone healing.

### **Risk of the Procedure**

Neural structure damage is one of the most dreadful complications in thoracolumbar surgery. Depending on the anatomical level and the degree of injury, resultant functional deficits will be very different. The lower limbs power might be affected in various extent; ranging from toes weakness or foot drop to complete paraplegia. Modalities of sensory function might also be affected, leading to numbness, paresthesia, neuropathic pain, depends on the operated segment of spine. Bowel and bladder controls require delicate and coordinated neural function, so nerve injury might result in loss of control of these sphincters, urinary and fecal incontinence, urinary retention and constipation. In male patients, erectile dysfunction and/or sterility secondary to retrograde ejaculation may also be resulted. All of these neurological complications may be either transient or permanent.

Injury to the nerve covering (dura) with leakage of cerebrospinal fluid, might result in meningitis and poor wound healing. This may need antibiotics and further surgery.

With respect to the bony spinal column, the bone may not knit, and that might cause pain or instability; or in case of bone knitting, if metallic implant present, the implant might break. Not only the operated level could be affected, adjacent levels might result in accelerated degenerative process. All of these complications might require further surgical management. Bone graft might be harvested from the iliac crest that will need a

separate wound. The donor site might be complicated by severe pain and wound complications.

Surrounding structures may also be damaged. For the thoracic spine, lung and pleura, mediastinal structures including central blood vessels are in danger. Whereas for the lumbar spine, great vessels e.g. the inferior vena cava, the bowel or the ureters are at risk of injury. Sometimes ileus might develop despite there is no direct injury to the bowel, but this is usually transient.

General risk for thoracolumbar surgery includes wound infection and haemorrhage. There is also risk of mortality if severe complication occurs.

### **Preoperative Care**

To achieve best clinical outcome, it is advisable to complete all the physical training as prescribed. Traditional Chinese herbal medication or other alternative medicines are recommended to be withheld.

The patient will usually be admitted to hospital one day before the operation. Before surgery, the anaesthetist will assess patient's physical condition. The indication and risk of the procedure will be explained to the patient by the surgeon and the consent form will be signed. Preoperative blood test and radiological examinations may be performed. X-ray of the operative site will usually be required. Other specific tests might be needed including computerized tomography (CT) or magnetic resonance imaging (MRI).

Patient will be asked to abstain from any food and drink since mid-night before surgery.

### **Postoperative Care**

During the early postoperative period, the main focus is the management of postoperative pain. The neurological function will be monitored closely, along with training by physiotherapist and occupational therapist. For patients with stability problem, external bracing may be required. In case of malignancy, postoperative adjuvant therapy e.g. chemotherapy and radiotherapy might be also indicated according to pathology.

### **Follow Up**

There will be clinical and radiological follow-up. If the procedure aims at decompression or stabilization, clinical follow-up assessing the pain or stability is the most important parameter. Whereas for oncological diseases, radiological follow-up is also required to look for any residual disease or recurrence. Surgical team will arrange follow-up in most of the time, but in some cases, the oncologist will also be involved.

### **Remarks**

This is general information only and the list of complications is not exhaustive. Other unforeseen complications may occasionally occur. In special patient groups, the actual risk may be different. For further information please contact your doctor.