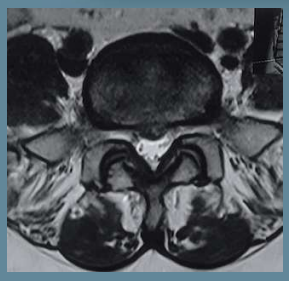
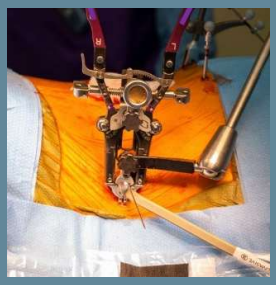
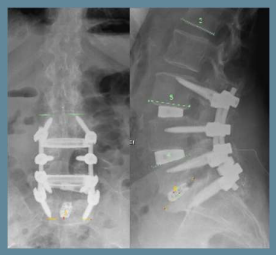
# Patient Information and Consent for Surgical procedure

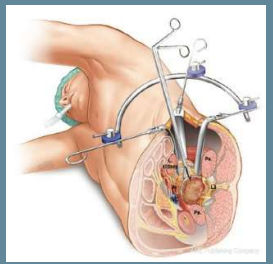
## 2 stage

## Lateral (ATP) and Posterior Decompression & Fusion surgery with bone graft









### ➢ Objectives of Surgery

The main reason for this surgery is to decompress nerves and nerve roots that have been compressed by the process of disc protrusion. This stops the nerves being irritated and relieves the symptoms of pain in the legs. If there are any symptoms of numbness, pins and needles or weakness, this can also stop the worsening of these symptoms and often allows the nerves to recover in time to normal feeling and movement in the legs.

This procedure also restores the pre-existing alignment of the vertebral bodies. This opens the spaces for the nerves that exit the spinal canal. It also facilitates correction of deformity, either scoliosis or vertebral slip. If the lower-most level (L5/S1) is included, access is performed by a vascular surgeon. This makes the surgery safer and more successful.

### ➢ Details of Surgery

The surgery is performed in two stages, 2 days apart. The first stage is performed lying on the side via small incision on the side of the torso, the second with the patient lying on the stomach via incision on the middle of the back. No muscles are cut during the first stage, thus making the recovery very fast (2 days), also allowing the second stage to be significantly shorter while achieving the same surgical goals.

This combined two surgery approach, even though utilising two separate anaesthetics, achieves the final objective with shorter recovery overall.

### ➢ Decompression

The decompression of the spinal canal and nerve roots is achieved both indirectly (stage 1) and directly (stage2). The levels that are included in either stage is decided based on the symptoms and the preoperative imaging. In some instances, some levels need not to be operated on from both directions, however most of the time they are.

### ➢ Instrumentation

The vertebral bodies are distracted and held apart by a large cage spacer that is mechanically superior to one used in single posterior stage. A plate is used to reinforce the construct from the side of the vertebral bodies and screws are placed either via integrated space through the cage, via the plate or both.

The posterior implants, traditional screws and rods, are made of titanium, which under strain behaves similarly to native bone, thus allowing the bone graft to fuse in higher rates.

If the cages cannot be placed via the anterior approach due to vascular anatomy in the abdomen, the select levels can still be very soundly instrumented from behind, as a traditional posterior only surgery.

All the implants stay in the spine indefinitely, as they are not possible to be felt by the patients and remain inert. They could be removed, but this would require another surgery and that is most often not necessary.

## ➢ Bone graft fusion

Highly effective bone substitute (synthetic) is placed inside the cages (stage1) and combined with native bone obtained from the decompression, then placed around back screws (stage 2). The fusion takes place over several weeks after the surgery.

The success of the fusion is dependent on several factors; surgical techniques that have been refined over decades and the patient following a healthy lifestyle with adequate nutrition. In over 95% cases, the bone graft is fused withing 6 months after surgery. At that point the metalware becomes superfluous, and the patient could engage in most strenuous activities.

## ➢ Complications of Surgery

Much like with any surgery, there are possible risks and complications associated with this procedure. The three categories of complications are relatively common risks, rare risks and those that are still uncommon, but very relevant to this particular procedure.

More common risks and complications (> 5%) include:

- Infection, requiring antibiotics and further treatment.
- Minor pain, bleeding or bruising at the wound site
- bladder infection, pressure sores or blisters

These usually settle in short amount of time and if so, requiring only minor interventions.

Rare complications include:

- Heart complications (heart attack, irregular beat)
- Stroke or stroke like complications
- Pulmonary embolism
- Death

Uncommon risks and complications (1-5%), that are specific to this type of surgery include:

- Deep wound bleeding (more common if on prior blood thinners)
- Nerve root injury causing a weakness or numbness
- Bladder or bowel problems due to nerve root injury
- fluid leak from spinal nerves coverings (CSF)
- Ongoing persistent leg numbness due to nerve damage from compressed nerve roots.
- Ongoing persistent back Pain
- Deterioration of other discs. This may require further surgery.
- Sympathetic nerves irritation with hot and cold sensation to the legs/ pain and weakness of hip flexion
- The titanium screws may break or disconnect whilst the bone is fusing.

- The bone may not fuse. This may cause pain and loosening of screws or failure of implants.
- Bowel issues caused by retraction during surgery.
- Small areas of the lung may collapse, increasing the risk of chest infection. This may need antibiotics and physiotherapy.
- In patients with high body-mass index, Increase risk of wound infection, chest infection, heart and lung complications, and thrombosis.
- Blood clot in the leg (DVT) causing leg pain and swelling.

Rare risks and complications (< 1%) that are specific to this procedure include:

- Paraplegia from a blood clot. This may require further surgery and though usually temporary, may be permanent (extremely uncommon).
- Injury to major blood vessels and nerves.
- Injury to autonomic nerves causing retrograde ejaculation (male patients who intend to have children in the future are encouraged to consult fertility specialist and freeze their sperm)
- Injury/ irritation of the Genito-femoral nerve

**Majority of the above complications are usually temporary and resolve in time, some may require further surgery to be adequately treated. They can have lasting effects or permanent in nature.**

## ➢ Recovery after surgery

The length and ease of recovery is dependent on the patient's age and the complexity of the surgery. However, the 2-stage approach to the spine has overall less of an impact compared to single stage surgery.

The hospital stay is usually 5-7 days. During this time the patients re-establish their independence. the discharge destination is decided after surgery by the allied health team in the hospital. the subsequent 2 weeks is spent exercising, walking, and engaging in increasingly more vigorous activity. By 6 weeks after surgery, the patient is usually able to do most activities they wish, but with difficulties. By 3 months after surgery, patients are able to do most activities without difficulties.

In general, if the patient is less than 40 years old, the above time estimates can be halved and if they are over 80, they may be doubled.

## ➢ Pain after surgery

The pain directly after the first stage is only confined to the surgical site and the left groin. This occurs as the abdominal and hip muscles recover from surgery and subsequently heal. back pain after the second stage is well managed by combination of upright exercise (walking), rest in flat position and adequate pain relief.

The pain is not dangerous and does not indicate any wrong-doing by the patient or any undue effect to compromise the outcome of the surgery.

This will all be explained during the hospital stay and during post-operative reviews.

# Consent

**Procedure, Side and Levels:**

Patient label:

**It is important for you to understand the nature of your operation, what we are trying to achieve for you and the complications which can occur. Occasionally some of these can be quite significant, including permanent loss of function and you may even need to have a second operation. Most however, are less significant and often temporary. We have mentioned some of these complications (above and below), but it is not a full list and other unforeseen circumstances can arise. We will try and give you as much information as you need and want to have, so that you can make the decision whether to proceed with your operation.**

- ☐ understand the main principles of the operative procedure that my spinal surgeon is to undertake. I have read the information booklet previously given to me about my operation. I feel that I have been given every opportunity to ask any questions about this procedure.
- ☐ understand that the surgery in question is not a "cure", but it is the nature of spinal surgery to expect a good percentage improvement. I also understand that improvements may not be immediate but may be gained in the longer term. I am also aware of the likely outcome if I do not have surgery.
- ☐ understand that complications which may occur with this type of procedure include: nerve root injury, dural leak or spinal cord injury; recurrence of my problem; fibrous tissue formation; infection and skin and nerve pressure problems. General anaesthetic and medical problems may include chest infections, urinary infections, and others.
- ☐ understand that there are also very rare but serious complications which have been recorded from this type of surgery which, in extreme circumstances, might include: death, paralysis, eye complications including blindness, serious vascular injury, stroke and other serious anaesthetic and medical problems.

Signature: Date: