GREG MALHAM
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TRANSFORAMINAL LUMBAR INTERBODY FUSION (TLIF)

Transforaminal - Through the foramen. In fact, the approach is through the facet joint i.e. "trans facet".
Lumbar - Lower back
Interbody - Between two or more vertebral bodies by removing the damaged disc *(total discectomy).*
Fusion - Joining two vertebrae together by using bone graft alone or a "cage" filled with bone.

INDICATIONS FOR SURGERY:

- 1 or 2 level symptomatic degenerative disc disease or discogenic pain
- Unilateral *(one sided)* disc prolapse causing severe back pain and leg pain *(sciatic)*
- Recurrent disc prolapses with severe associated low back pain
- Grade 1 spondylolisthesis

SUCCESS OF THE OPERATION:

Of ten patients, 7 - 8/10 (70 - 80%) will if asked to agree to have the operation again. They report significantly improved pain, function and reduced analgesic requirements. Two patients (20%) will be the same after the operation and 5% will be worse with increased pain and reduced function.

RISKS OF THE OPERATION:

The total risk of something going wrong (complication) is 3 - 5% or 1:20. The medical risks of any operation are infection, bleeding drug allergy, heart attack, DVT, pulmonary embolus, pneumonia, urinary tract infection, general anesthesia and death.

The specific risks of this operation are again infection, (needing wound washout or removal of metal ware), metal ware failure with fracturing of screws (if no fusion or non-union occurs), cage dislocation, nerve damage (especially nerve roots L3 - weakness of thigh, L4 - weakness of leg, L5 - foot drop and S1 - weakness pushing foot down) and CSF leak (leakage of spine fluid from tearing of the lining of the nerves).

Blood transfusion is uncommon and the need for this is reduced by the use of the "Cell Saver", which is a machine used during the operation. Any blood loss from the patient is filtered and returned to the patient, thus minimising the risk of blood transfusion.

BEFORE SURGERY:

Tell Mr Malham about any medical conditions or previous operations. If you have a medical condition such as diabetes, heart problems, high blood pressure or asthma, Mr Malham may arrange for a specialist physician to see you for a pre-operative assessment and medical care following the neurosurgery.

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BEFORE SURGERY:

Inform Mr Malham of medication that you are taking and/or have allergies to medications.
Patient must stop using the following, 10 days pre-operatively:
- Aspirin
- Plavix
- Isocover
- Asasantin

Patient must stop using blood thinning medication *(such as Warfarin)*, 3-5 days pre-operatively.

THE OPERATION:

Positioned lying prone (face down) on operating table. Performed either by:
• "Open" via standard midline incision;

• "Mini open" via small incision on either side of midline (Wiltse Approach);

• "Percutaneous" via very small skin incisions to allow expandable tubular retractors

Image intensifier (x-ray) or 3D stereotactic image guidance is used to mark the skin level of the target disc and pedicles above and below.

Under the microscope the facet joint on the symptomatic side and level is removed. This enables the exiting and descending nerve roots to be decompressed. Total discectomy (disc removal) is performed.

The endplates of the vertebra above and below are cleared of soft tissue.

Harvested bone graft (from the facet joint removal) and bone morphogenic protein (BMP-2) is placed anteriorly into the disc space. A PEEK interbody cage packed with bone graft and BMP-2 is then impacted into the disc space under image intensifier guidance.

Pedicle screws are inserted above and below the disc level bilaterally, either by the tubular retractors or percutaneously. Curved rods are then connected to the screws and locked to restore the lordosis (curve) of the low back.

Bone graft and BMP-2 are sometimes also placed into the intact opposite facet joint for additional posterior lateral fusion.

A wound drain is inserted to reduce the risk of haematoma *(blood collection or bruising).*

The lumbar fascia and skin incisions are closed with dissolvable sutures.

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AFTER SURGERY:

You will be carefully observed in the recovery room by the nursing staff for one hour. Your blood pressure, pulse, breathing and leg strengths will be carefully monitored.

During the first night after the operation, you will be woken regularly to have your observations performed. You will have pain relief medication given to you by the nursing staff or via an intravenous drip, which you control by pushing a button, called "patient controlled analgesia" *(PCA)*. The PCA has a safety lock out so you cannot overdose on the painkillers no matter how many times you press the button.

"Nil by Mouth" until return of bowel sounds and passing of flatus. *(The bowel goes to sleep after lumbar surgery and if you eat too soon, you risk vomiting of food).*

The day after the operation you will be gently mobilised with the physiotherapist and walked around your room and then around the ward. Over the next 2 - 3 days, your walking will improve, and you will be encouraged to take 3 - 4 small walks per day.

The wound drain is removed 48 hours after the operation.

When you are able to get out of bed unassisted, your bladder catheter will be removed, usually after 2 - 3 days.

Once your pain is comfortable, you will be given regular oral analgesia and the drip will be removed from your arm. You will be given small injections under the skin of your abdomen to prevent clots forming in your calves, called deep venous thrombosis *(DVT).*

If you have skin staples the District Nurse or your GP will remove these 10 days after the operation.

Usually you will be able to return home 4 - 7 days following the operation. This will be when you are independent with walking and performing tasks of daily living such as showering, toileting and dressing.

If you require intensive inpatient post-operative rehabilitation, this will be organised by Mr Malham and discussed with you.

For the next four weeks after the operation, you should take 3 - 4 small equal walks per day, initially 5 minutes, aiming for 20 minutes each walk. You should avoid bending/twisting and lifting objects greater than 5 kilograms and only sit for meals 20 - 30 minutes in duration.

Mr Malham will review you approximately 4 - 6 weeks after you leave hospital or the rehabilitation centre. At your

Post-operative review, your progress, any further treatment needed and return to work timing will be discussed.

Do not drive until you have been reviewed post-operatively by Mr Malham.

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