仁安醫院
UNION HOSPITAL

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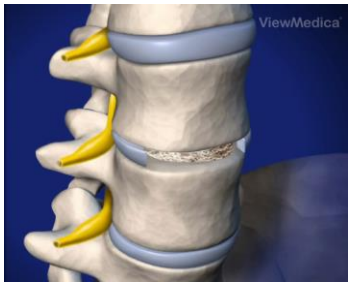
Operation Information

Anterior Spinal Fusion

Introduction



Source: https://www.orthoindy.com/GregPoulter/Video-Procedures

Spinal fusion is a surgical procedure used to correct problems with the vertebrae in the spine. It fuses the vertebrae which causes symptoms, so that they heal into a single solid bone.

In an anterior spinal fusion surgery, the surgeon approaches the spine from the front (anterior). The intervertebral disk may be removed for spinal nerve or cord decompression before the spinal fusion. Spinal fusion is achieved by using bone grafts and internal fixation devices to stabilize the spine. Accessing the spine from the anterior aspect has its advantages: both the back muscles and nerves remain undisturbed, and the bone graft tends to fuse better when it is placed at the front of the spine.

Indications

1. Degenerative conditions causing compression of the spinal cord or spinal nerves
2. Instability of the spine
3. Spine fracture
4. Spinal tumor
5. Spinal deformity
6. Miscellaneous conditions causing spinal cord or spinal nerve damage

Outcomes

The expected outcome of this operation is to relieve the pressure on the spinal cord or nerves, thus relieving pain and preventing further deterioration and nerve damage.

Procedures

1. The operation is performed under general anaesthesia.
2. If autograft is used for the fusion, a bone graft may be harvested from the ilium, a rib or the spine to fill the defect at the spinal column (in special conditions synthetic material or allograft may be used).
3. An incision is made over the involved spinal levels from the front of the patient.
4. The internal organs and large blood vessels are identified, and carefully moved to the side and protected throughout the surgery.
5. The desired spinal level is confirmed with intraoperative radiography.
6. The problem bone, disc, and/or compressive lesion(s) are removed.
7. Bone graft is placed into the intervertebral disc space and internal fixation devices, e.g. screws and rods may be used to enhance stability and fusion.
8. The wound(s) is/are closed with stitches or staples and covered with a sterile waterproof dressing.

Possible Risks and Complications

1. General Risks and Complications:
   i) Excessive bleeding causes shock, stroke, heart attack, etc., which may be fatal if severe
   ii) Deterioration of pre-existing medical problems, e.g. heart disease and stroke
   iii) Delayed wound bleeding, haematoma formation and wound infection
   iv) Problems in wound healing or persistent scar discomfort

2. Risks and Complications Specific to the Surgery:
   i) Neurological deterioration. Depending on the operative site, the most serious neurological complications are tetraplegia (in cervical spine surgery), paraplegia or cauda equine syndrome (in thoracic spine or lumbosacral spine surgery). The patient may lose the ability to breathe with tetraplegia. The motor, sensory, autonomic, urinary, bowel and sexual functions may be altered.
   ii) Injury to the dura causing cerebrospinal fluid leakage or meningitis
   iii) Malposition or breakage of internal fixation device
   iv) Failure of bone union
   v) Problems with bone graft donor sites such as wound infection, haematoma or persistent aches
   vi) Recurrence or deterioration of the original spine condition

** The risks listed above are in general terms and the possibility of complications is not exhaustive. Please understand that even though all operations are carried out with utmost professionalism and care, this does not rule out the possibility of complications arising. In the event of peripheral organ damage or post-operative haemorrhage or leakage, further operations may be required.

Pre-operative Preparations

1. Good hygiene can prevent wound infection. Therefore, we advise you to clean up yourself on the day of the operation.
2. The procedure and possible complications will be explained by the doctor and a consent form must be signed prior to the operation.
3. Please inform your doctor and nurse all your past medical history, previous surgical operations, current medication and any complication with drug or anaesthesia.
4. Cigarette smoking may reduce your ability to heal from spinal fusion. We strongly recommend you quit smoking.
5. Routine tests such as blood tests, ECG, X-ray and MRI scan may be performed.
6. Preparation of the external supportive device for spine immobilization after the surgery, e.g. neck collar, thoracolumbosacral orthosis may be needed.
7. Nursing staff will assist you in cleaning the skin and performing shaving if necessary.
8. No food or drink six hours before the operation.
9. Please change into a surgical gown after removing all belongings including undergarments, dentures, jewellery and contact lenses.
10. Please empty your bladder before the operation.

Post-operative Instructions

General

1. After general anaesthesia, you may:
   - experience discomfort in the throat after tracheal intubation.
   - experience side effects of anaesthesia including feeling tired, drowsy, nausea or vomiting. Inform the nurse if symptoms persist or worsen.
2. Please inform the nurse of wound pain. Proper pain relief treatment by injection or oral medication may be prescribed by the doctor.
3. Intravenous fluid replacement or blood transfusion may be necessary.

4. If there is an indwelling urine catheter inserted, it normally will be removed a few days later.
5. Passing stool and urine are arranged in the bed in the lying position.
6. Difficult swallowing and a hoarse voice are common after anterior cervical spinal surgery. Most people fully recover from the problems within a few days. If the problem persists, your doctor and nurse will teach you how to alleviate the problems.
7. The length of hospital stay is varied from 1-2 weeks, depending on the type and site of the surgery, as well as the patient's factors.

Wound Care

1. Keep the wound dry and clean. Follow the doctor's and nurse's advice on wound care.
2. If wound drain is present, it will be removed in 2-3 days after the operation.
3. Stitches will be removed in 2 weeks.

Diet

Diet is not allowed on the day after surgery. Please follow doctor's instruction to gradually resume diet as allowed.

Activities

1. Early mobilization is encouraged as it enhances recovery after surgery. Please follow the doctor's advice to resume light activities gradually.
2. Lower limb exercise is encouraged to reduce the risk of deep vein thrombosis.
3. Deep breathing and coughing exercises are encouraged to reduce respiratory complications.
4. Turning the body is usually allowed within a few days after the surgery and this will not affect the wound healing.
5. Slowly increase your activity. When the pain is getting less, sit out and then walking exercise will be started (please follow the doctor's instructions). No sports, aerobic or cardio activities until 4-6 weeks post-operative visit with your surgeon.
6. Heavy lifting (greater than 10lb), awkward twisting and leaning should be avoided for 3 months.
7. Swimming can be commenced once the wound is dry and you feel comfortable to do so.
8. Put on the external supportive device as advised.

Advice on Discharge

1. Please comply with the medication regime as prescribed by your doctor.
2. The wound may be still covered with waterproof dressing when you are discharged. Do not remove it unless you are told to do so. Always keep the dressing clean and dry.
3. Immediately consult your doctor or return to hospital for professional attention in the event of excessive bleeding, severe pain or signs of infection at your wound site such as redness, swelling, shivering, high fever over 38^{o}C or 100.4^{o}F, or any symptoms of deterioration of neurological function such as new numbness, tingling or weakness of limbs.
4. Any follow-up consultations should be attended as scheduled.

Possible Additional Procedures / Treatment

1. More extensive instrumentation and fusion than originally planned may be needed.
2. Dural tears may happen intra-operatively. Surgical repair and prolonged bed rest may be required.
3. Additional surgical procedures may be needed to tackle complications, e.g. debridement of wound infection, and evacuation of the haematoma.
4. Future removal of the internal fixation device is not a routine but depends on the factors of the individual patient.
5. Additional surgery may be needed for recurrence or deterioration of the original spine problem.

Alternative Treatment

1. Anti-inflammatory medications
2. Steroid injections into the spinal area
3. Other therapy to treat the underlying causes
4. Physiotherapy
5. Occupational therapy

Should there be any enquiries or concerns, please consult the attending doctor.

Under the professional care of the doctor, you will gradually recover. We wish you all the best during your treatment and recovery.

If you have any questions after reading the entire leaflet, please write them down in the spaces provided in order for the doctor to further follow-up.

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Compiled by Union Hospital Operating Theatre (OT) Governance Committee

The above information is for reference only, please enquire your physician for details
Our Hospital reserves the RIGHT to amend any information in this leaflet without prior notification