



Operation Information

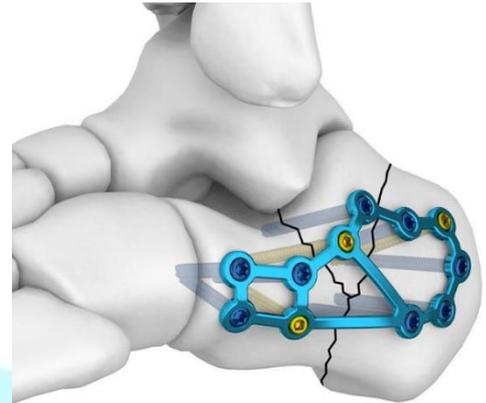
Calcaneal Fracture Fixation

Introduction

Calcaneal fracture is one of the commonest fractures of the foot. The calcaneus also called the heel bone, is a large bone that forms the foundation of the rear part of the foot. It withstands the highest pressure of the body, at the same time it forms a major part of the subtalar joint, which is essential for one's ability to walk on uneven ground.

Multiple surgical approaches are available for treatment of calcaneus fractures, ranging from minimally invasive to extensive open techniques. Open techniques may be performed by using medial, lateral, or combined approaches, depending on the extent of injury and the location of the fracture fragments.

Internal implants such as pins, screws, wires and plates are used for internal fixation to hold the bone in place while it heals. If there is a significant bony defect, bone grafting may be required.



Source:
<https://files.cults3d.com/uploaders/28307665/illustration-file/c00b18fa-fa04-45bd-9da2-6bf898fb3d94/PLACA-CALCANEEO.jpg>

Outcomes

The expected outcomes of this operation are reduced and fixed the fracture with internal implants, in order to prevent further damage and complications, and allow rapid return of joint motion.

Procedures

1. The operation can be performed under general or spinal anaesthesia.
2. Reduction and fixation under intraoperative radiography.
 - Minimally Invasive Internal Fixation:
 - i. Small incisions are made on the foot.
 - ii. Instruments are inserted through the small incisions to put back the bone fragments into alignment.
 - iii. Internal implants are inserted through the small incisions to fix the bone pieces and stabilize the joint.
 - Open Reduction and Internal Fixation:
 - i. If autograft is used, a bone graft may be harvested from the ilium.
 - ii. A larger incision is made on the foot.
 - iii. The bone fragments are put into alignment.
 - iv. Internal implants are used to fix the bone pieces and stabilize the joint.
3. A drain may be placed to drain out any collections of blood or fluid.
4. The wound(s) is/are closed with sutures or staples.

Possible Risks and Complications

Incidence of complications varies according to the extent of the fracture, type and approach of the operation and patient's factors.

1. General Risk and Complications
 - Pneumonia, stroke, heart attack, infection, venous thromboembolism
2. Specific Risks and Complications
 - non-union, mal-union, suboptimal reduction
 - joint stiffness
 - post-traumatic osteoarthritis
 - nerve injuries, vessel injury, muscle/tendon injury
 - complex regional pain syndrome
 - problems with implants including loosening or exposure
 - repeated surgery might be required

** 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 surgical wound infection. Therefore, we advise you to clean up yourself on the day of operation.
2. The surgery is usually performed within 3 weeks after an injury while swelling has reduced and premature healing has not yet occurred. Physiotherapy may be arranged in this period.
3. The procedure and possible complications will be explained by the doctor and a consent form must be signed prior to the operation.
4. Please inform the doctor and nurse all your past medical history, previous surgical operations, current medication and any complication with drug or anaesthesia. Please inform doctor if you are taking medications that affect blood coagulation such as Aspirin, Warfarin, Xarelto or Pradaxa, nonsteroidal anti-inflammatory drug (NSAID) such as Ibuprofen, Naproxen and Chinese medication.
5. Cigarette smoking may reduce your ability to heal. We strongly recommend you to quit smoking.
6. Routine pre-operative investigation such as blood test, ECG, X-ray and MRI scan may be performed.
7. Nurse will supply surgical soap to you for washing the operation site as necessary.
8. Shaving of the incision site may be required.
9. No food or drink six hours before operation.
10. Please change into a surgical gown after removing all belongings including undergarments, dentures, jewellery and contact lenses.
11. 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 feel 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. Cryotherapy and elevation can reduce pain and swelling of the affected leg.
4. The hospital stay is typically within one week which may vary with your health condition.

Wound Care

1. The wound is covered with a sterile waterproof dressing with cast normally.
2. Keep the wound dry and clean. Follow doctor's and nurse's advice on wound care.
3. Stitches or staples will be removed or dissolved in 3 weeks.
4. A wound drain may be present to remove fluid or gas from the area of surgery. It will be removed in 1-3 days after operation.

Diet

A normal diet may be resumed as instructed after recovery from anaesthesia.

Activities

1. Early mobilization is encouraged as it enhances recovery after surgery. Please follow doctor's advice to resume light activities gradually.
2. Elevate the affected limb for a few days to help reduce swelling and/or pain.
3. The affected limb will need to be immobilized for a while. Please use the crutches or wheelchair as directed.
4. Physiotherapist and occupational therapist may be referred for rehabilitation. You are recommended to participate in the tailor-made rehabilitation program in order to improve the chances of a full recovery.

Advice on Discharge

1. Please comply with the medication regimen as prescribed by your doctor.
2. The wound is covered with waterproof dressing when you are discharged. Do not remove it until you are told to do so. Always keep the dressing clean and dry.
3. Prolonged bed rest can slow down blood circulation and increase the likelihood of developing deep vein thrombosis. Gentle physical exercise is strongly advised.
4. During your recovery, you will likely lose muscle strength in the injured area. Specific exercise will restore normal muscle strength, joint motions and flexibility. Therefore, please follow your physiotherapist's advice to continue exercising.
5. It takes about 6 weeks for the bone to heal. During this period, you are in a cast boot and remains non-weight bearing. Please use the crutches or wheelchair as directed.
6. Heavy lifting and vigorous exercises should be avoided for 3-12 months until the broken bone is completely healed.
7. A diet rich in calcium and vitamin D will promote bone strength.
8. Immediately consult your doctor or return to hospital for professional attention in the event of severe wound pain, massive bleeding, drainage pus, loss of feeling and sensation at the surgical site, cold or turn pale of the toes, cough, shortness of breath, chest pain, fast heartbeat, shivering, high fever over 38°C or 100.4°F, etc.
9. Any follow-up consultations should be attended as scheduled.

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.

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

