仁安醫院
UNION HOSPITAL

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Operation Information

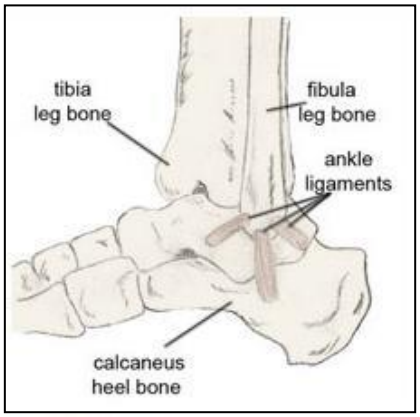
Ankle Fracture Fixation Surgeries

Introduction

The ankle joint is the largest, heavily loaded articulation in the foot. Most ankle fractures are as a result of indirect injury, from either an internal or external force of twist, turning or rotation. When serious it can lead to dislocation or even open fractures.

If the fracture is not serious and causes no displacement, it can be treated non-surgically by immobilization with a cast.

When the fracture is displaced or even dislocated, operative reduction and fixation will be considered. Internal implants such as pins, screws, wires and plates are used for internal fixation to hold the bone in place while it heals.



Source: http://www.flickr.com/photos/northcoastfootcare/3350701852

In complicated situations such as severe open fractures, comminuted fractures or when there is a soft tissue defect, extra procedures such as bone grafting, external fixation frame or microvascular reconstruction may be necessary in stages.

Outcomes

It is expected that the fracture will be reduced and fixed, in order to prevent further damage and complication, and allow restoration of joint function.

Procedures

1. The operation is performed under general or spinal anaesthesia.
2. Reduction and fixation under intraoperative radiography
   - Open Reduction and Internal Fixation
     i. If autograft is to be used, a bone graft may be harvested from another part of the body.
     ii. Incision(s) is made on one or both sides of the ankle.
     iii. The broken bones are put into alignment.
     iv. Internal implants are used to fix the bone pieces and stabilize the joint.
     v. A bone graft may be placed to fill any defects.
     vi. Soft tissue, e.g. ligament and tendon is repaired as necessary.
     vii. The wound(s) is closed with stitches or staples, and covered with sterile waterproof dressing.
   - Close Reduction and External Fixation
     i. The broken bones are aligned by pushing, pulling and turning your foot or ankle.
     ii. Several small incisions are made around the fracture.
     iii. Screws and long metal pins are inserted through the incisions and fix the bone pieces and stabilize the joint.
     iv. The pins sticking out through the skin are attached to a stabilizing device outside (external fixation frame).
     v. The entry sites of the pins are wrapped with sterile dressing.

Possible Risks and Complications

The 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. Depending on the nature of the fracture, surgery may be performed soon after an injury with an open fracture. Or, it may be done within 3 weeks after an injury while swelling has reduced and premature healing has not yet occurred. Physiotherapy may be arranged during this period.
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 the 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. We strongly recommend you quit smoking.
5. Routine tests such as blood tests, ECG, X-ray and MRI scan may be performed.
6. Nursing staff will assist you in cleaning the skin and performing shaving if necessary.
7. No food or drink six hours before the operation.
8. Please change into a surgical gown after removing all belongings including undergarments, dentures, jewellery and contact lenses.
9. 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. Cryotherapy and elevation can reduce pain and swelling of the affected leg.

Wound Care

1. The wound is covered with a sterile dressing with cast or without cast.
2. Keep the wound dry and clean. Follow the doctor's and nurse's advice on wound care.
3. Stitches or staples will be removed or dissolved in 3 weeks.
4. If there is an external fixation frame, nurse will help you clean the entry sites of the pins regularly, and you have to learn how to do it upon discharge.

Diet

Diet is allowed gradually after recovery from anaesthesia. (Please follow doctor's instruction)

Activities

1. Early mobilization is encouraged as it enhances recovery after surgery. Please follow the 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 joint needs 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 participating 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 regime as prescribed by your doctor.
2. Your wound may be still covered with waterproof dressing when discharged. Do not remove it until you are told to do so. Please keep the dressing clean and dry.
3. If there is an external fixation frame, make sure you know how to clean the entry sites of the pins before discharge.
4. Prolonged bed rest can slow down blood circulation and increase the likelihood of developing deep vein thrombosis. Gentle physical exercise is strongly advised.
5. 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 exercise.
6. It takes about 6 weeks for the bone to heal. During this period, you are in a cast boot and remain non-weight bearing. Please use the crutches or wheelchair as directed.
7. Heavy lifting and vigorous exercises should be avoided for 3-12 months until the joint is completely healed.
8. A diet rich in calcium and vitamin D will promote bone strength.
9. 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 paleness of the toes, cough, shortness of breath, chest pain, fast heartbeat, shivering, high fever over 38℃ or 100.4℉, etc.
10. 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.

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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
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