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Ankle Arthroscopy

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Our understanding and the development of new surgical techniques have resulted in very significant advances in surgery of the knee and shoulder. In a similar way small joint arthroscopy has resulted in significant advances for elbow, wrist and ankle surgery. Smaller arthroscopes and instruments are generally used. The small joints tend to restrict access and free movement within the joint. In the ankle the visualization is improved with distraction of the joint either by a stirrup and weights or by application of a distraction frame. Arthroscopy of these joints are like the knee generally undertaken as a day case procedure with an associated rapid recovery and return to work and sports.

Introduction

Whilst many ankle injuries can be easily diagnosed some remain difficult to assess with examination and X-ray alone. In less than ten years from the time of the publication of the first reports on the experience with ankle arthroscopy, the technique has gained increased acceptance in both diagnostic and therapeutic applications. This trend is not surprising. Ankle injuries are frequently seen in orthopaedic practice and, while many are easily diagnosed by clinical and radiographic examination, a number of ankle disorders are either difficult to diagnose or their clinical significance may be difficult to evaluate by traditional methods.

Ankle injuries can result from excessive loading, either as an isolated event. This occurs most commonly from a soft tissue, inversion or sprain type of injury. This most commonly occurs from a forced inversion or twist of the ankle joint whilst the foot is in plantar flexion. Alternately this may occur as a result of a series of events that produce ankle overuse or fatigue. Cartilage and soft tissue injuries associated with recurrent effusion, nonspecific tenderness, restricted motion, or a feeling of instability can present a

diagnostic challenge. On the other hand, chondral fractures, osteochondral lesions of the talus, and loose bodies are often more easily identified radiographically, but the extent of articular surface damage may not be readily ascertained. Recent studies and clinical experience have shown that these types of ankle pathologies may be diagnosed and, in many cases, effectively treated, arthroscopically.

Patient Selection

Ankle arthroscopy is not presently indicated in as many cases as knee arthroscopy but its value as a relatively non-invasive method of diagnosis and treatment is recognized in a growing number of situations. Diagnostic arthroscopy is indicated in patients whose ankle problems include unexplained pain, swelling, stiffness, instability, haemarthrosis, or locking. Therapeutic ankle arthroscopy is indicated for articular injury, soft tissue and bony impingement, arthrofibrosis, some types of fractures, synovitis, loose bodies and osteophytes,

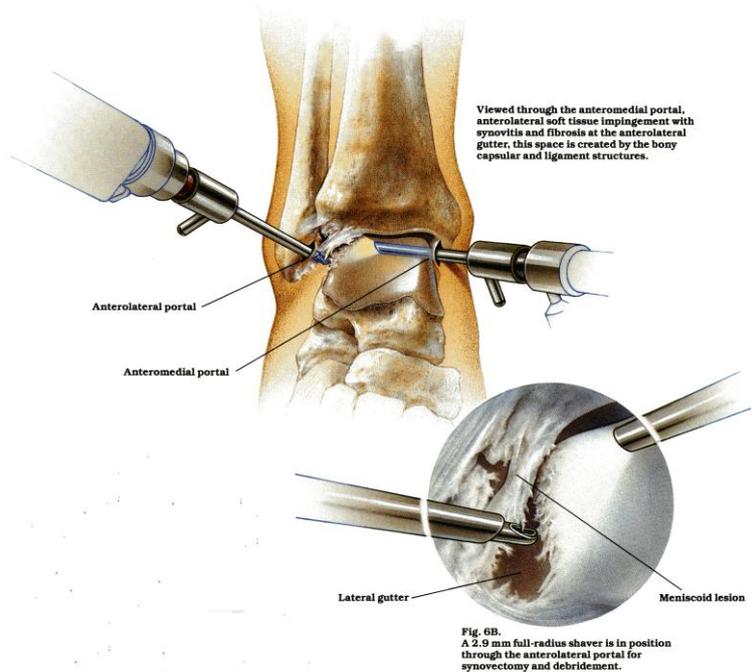


Fig 1. An anterior diagrammatic view of an ankle arthroscopy and excision of inflamed synovium from the anterior-lateral aspect of the ankle joint. This synovitis and impingement is a common problem after ankle sprains.

Patient Selection

Ankle arthroscopy is not presently indicated in as many cases as knee arthroscopy but its value as a relatively non-invasive method of diagnosis and treatment is recognized in a growing number of situations. Diagnostic chondromalacia, and osteochondral lesions of the talus. The arthroscopic approach may also be used on occasion for ankle stabilization and arthrodesis.

The only absolute contraindications to ankle arthroscopy are localized soft tissue infection and severe degenerative joint disease. Intra-articular joint infection is not a contraindication and, in fact, can be treated by arthroscopic debridement and drainage. Moderate degenerative joint disease with restricted range of motion is often associated

with a reduced joint space, which can prove difficult for access. Severe ankle oedema, or a tenuous blood supply may be contraindications to performing arthroscopy in the ankle.

Patient Preparation and Positioning

General, spinal, epidural, or, in some cases, local anesthesia maybe used. Surgeon preference governs patient positioning. Our patients are placed in the supine position with a sandbag supporting the buttock on the operative side. An ankle and a thigh holder, provides several advantages: they facilitate hip, knee, and ankle positioning, permit the surgeon to sit or stand during the procedure, and provide ready access to anterior and posterior portals. A tourniquet is generally used on the thigh.

Anterior landmarks are used to identify important structures around the ankle. These include the dorsalis pedis artery, saphenous vein, anterior tibial, peroneus tertius and extensor digitorum communis tendons. These are marked and avoided. The anterior joint line is located by palpation during dorsiflexion and plantar flexion of the foot. Distraction may be used to increase the space between tibia and talus to allow a better visualization. In order to provide complete access to the joint, as well as flexibility of approach during examination and surgery, three portals are routinely established, the anterolateral, the anteromedial, and the posterolateral

Anatomy and Portals

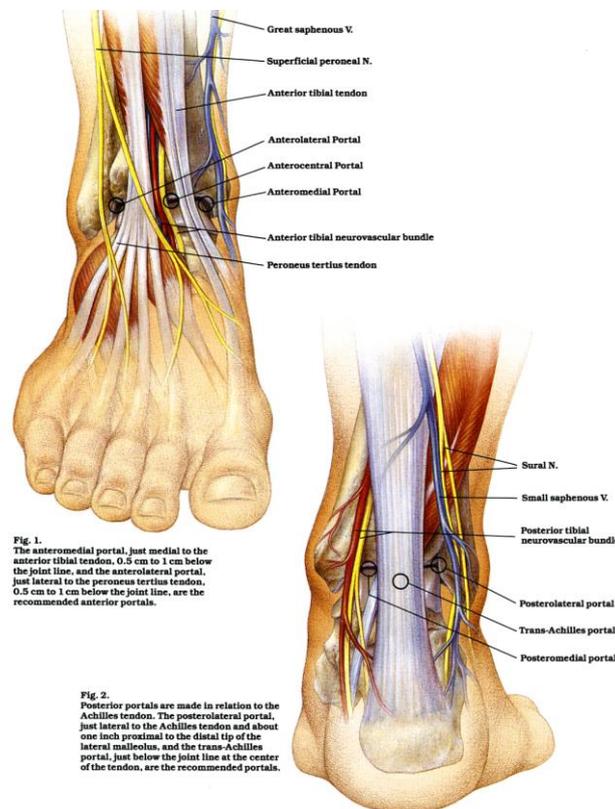


Fig 2: A diagram of the anatomical structures at the anterior and posterior aspect of the ankle joint with the entry sites or portals marked.

Examination of the Joint

Successful arthroscopic examination of the ankle, like that of the knee or shoulder, requires a methodical approach. With such an approach, the surgeon can be confident that all pathology is visualized, that the method is accurate and reproducible from one patient to another.

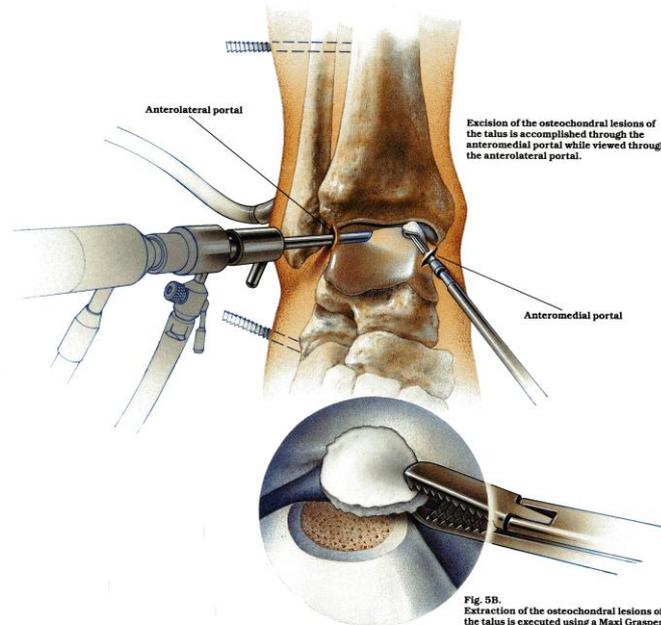


Fig 6:Anterior diagrammatic view of an ankle arthroscopy and removal of a loose fragment of articular cartilage: One of the most common causes of post traumatic ankle pain.

Ankle Pathology

Osteochondral, arthritic, and soft tissue pathologies in the ankle can be visualized during the arthroscopic examination and many can be treated at once, often without the need for additional open exposure or dissection. Biopsy, debridement, synovectomy and loose body removal procedures can also be performed. Defects of the articular surfaces can be identified. In particular defects of the talus occur commonly. These defects can be identified and often treated.

In the past, treatment of such lesions were often associated with delayed diagnosis while significant morbidity and prolonged rehabilitation could be anticipated when arthrotomy was undertaken. Debridement, curettage, and transmalleolar drilling under direct and or

fluoroscopic control, to stimulate a new blood supply and healing, can be performed through the arthroscope. The ability to diagnose osteochondral lesions of the talar dome promptly, treat the condition immediately with a relatively non-invasive procedure, and permit early joint motion and patient rehabilitation, are good examples of the advantages offered by ankle arthroscopy.

Arthritic conditions, including loose bodies and osteophytes, are other ankle disorders that can be visualized and treated arthroscopically. Soft tissue pathologies can also be treated. These include a wide range of synovial disorders, inflammatory conditions, infections, impingement and meniscoid lesions.

Inversion injuries to the ankle can lead to soft tissue impingement that can cause chronic ankle pain. This soft tissue impingement can be present antero-laterally, postero-laterally or can occur simultaneously in both the antero-lateral and postero-lateral gutters. Soft tissue impingement is most commonly seen in the antero-lateral gutter following torn ankle ligaments.

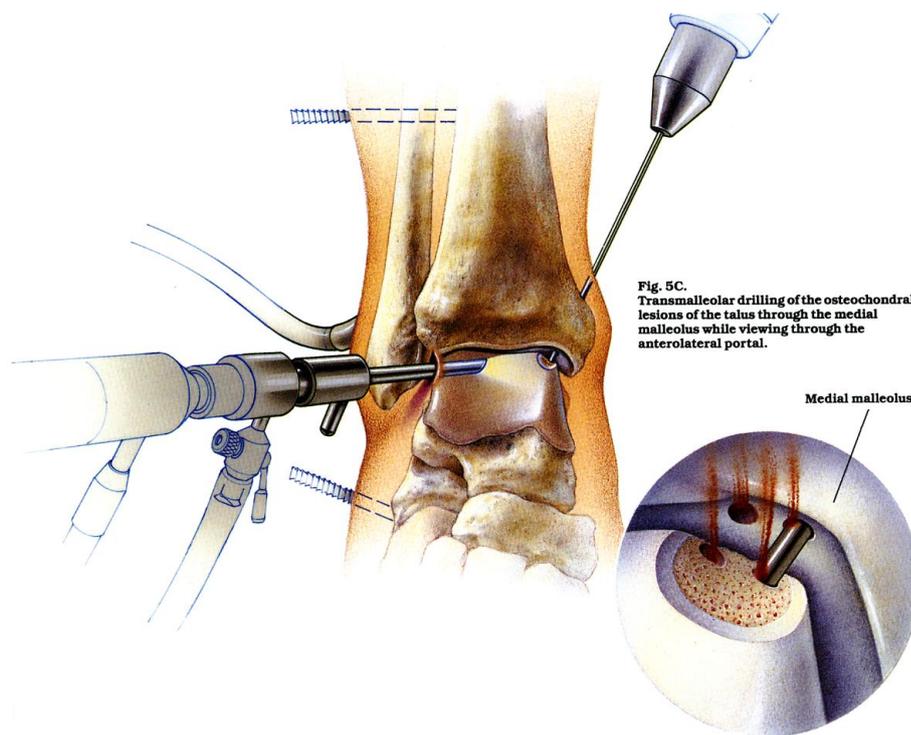


Fig 7: Transmalleolar drilling of an osteochondral lesions of the talus through the medial malleolus while viewing through the antero-lateral portal.

Post-Operative Management

Following diagnostic or therapeutic arthroscopy of the ankle, portal wounds are closed with adhesive tapes or a single suture, and a sterile compression bandage is applied. A short leg compression stocking will hold the dressings in place. Patients are usually allowed to go home on the day of surgery, with weight bearing without crutches, as tolerated. Instructions for simple range of motion and strengthening exercises are given, to be started immediately at home.

Dressings are usually removed on the first or second post-operative day, with the exception of the band-aids and compression stocking which are maintained for one more week. Formal physical therapy is initiated after the first post-operative visit, at the surgeon's discretion. Depending on the surgical procedure and speed of recovery, normal activities, including athletic activities, can usually be resumed within three to six weeks after surgery. Recovery can be longer after arthroscopic drilling of the talus.

What will my ankle be like afterwards?

You should wake up free of pain free with a dressing around the ankle. A plaster cast is not usually used. When you have recovered from your anaesthetic, patients can get up, walking freely on your ankle. The bulky dressing can be removed after 1-2 days after the operation and exercises started. Exercises should include moving your ankle up-and-down and also with side-to-side movements. The physiotherapist will advise you about this before leaving hospital. The ankle will still be fairly swollen, bruised and stiff for 3-14 days so you should keep it up when not walking or exercising. If it gets very swollen, you can put some ice on it for 10-15 minutes. Specialist follow up is usually after 14-21 days and the sutures removed by the GP after 10-14 days. Rehabilitation and intensive physiotherapy is often prescribed at this stage, but many people do not need it and can exercise on their own. If no further treatment is required and your ankle is healing well, you may be discharged.

If patients are comfortable and your work is not too demanding, you could go back to work within a week. However, if you have a heavy manual job, or have had extensive surgery within the ankle, you may not be able to go back for two weeks or more. It is usual for patients to return to driving after 3-21 days but this depends upon what surgery was undertaken. You need to decide when you are safe to drive. A good indication of return of adequate function and safety is the ability to hop without pain on the affected leg. As you recover from your operation, you can gradually increase your activity, determined by comfort and the amount of swelling and flexibility in the ankle. Start with walking and cycling, then light running. Make sure your foot and ankle are fairly flexible before moving to twisting or impact activities, and make sure you can turn and jump comfortably before returning to contact sports.

Complications of Ankle Arthroscopy

The commonest problem after an ankle arthroscopy is persistence of symptoms. This is usually related to ongoing symptoms of arthritis in very degenerative joints. Occasionally some numbness of the skin may occur. Infection may present as excessive or increasing throbbing type pain, redness and fever. If this happens you should attend your General Practitioner or return to your specialist. Other complications which may occasionally occur include damage to the nerves or blood supply to the foot and ankle, bleeding, stiffness persistent degree of swelling or a venous thrombosis.

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