

PATIENT INFORMATION: ANKLE ARTHRITIS

What is ankle arthritis??

The ankle joint is a large, congruent joint formed by the tibia (the lower part of the leg bone) and the talus (the upper part of the foot bone). Normally there is a layer of cartilage protecting the two bones. Cartilage is made up of mostly water, with some protein and fat as support. In some patients, this cartilage layer has worn away resulting in exposed bone in the ankle joint. Pain and stiffness in the ankle are common symptoms for this condition. Some patients have no symptoms at all and are only diagnosed as they have other issues with their lower limb.

What causes ankle arthritis?

Trauma is the cause of most cases of ankle arthritis. Ankle instability or lower limb malalignment from a previous fracture can contribute to ankle arthritis. In some rare cases it can be caused by inflammatory conditions like rheumatoid arthritis or gout, or rarely due to blood disorders like haemochromatosis. In some cases the arthritis has no known cause.

What non-operative treatment options are there?

Education about the cause of ankle arthritis, or even just having a diagnosis, can be helpful for many patients. Understanding that there is a reason for ankle pain and stiffness is often reassuring. Lifestyle modifications such as activity restriction, weight loss and gait modification can help with the pain. Physiotherapy can be very useful for maintaining a range of motion, particularly in the early stages of the disease, as well as ensuring there are not any muscle imbalances that might be contributing to your pain such as a tight calf. Orthotics like an ankle brace or fixed ankle boot can help stabilise the ankle and also help develop a sense of what potential surgical options would feel like. Medication such as paracetamol and anti-inflammatories can also help with symptoms if the side effects are well tolerated. Finally, an injection of local anaesthetic and steroid into the ankle joint make help settle your symptoms. In some cases, patients do not need further intervention after an injection.

When do I need an operation for my arthritis?

Deciding whether to proceed with surgery is a personal decision that can only be made by the individual. The surgical options for ankle arthritis are generally large procedures requiring a period of immobilisation, non-weight bearing and rest. There are also risks associated with any surgical options. If a patient's quality of life is severely affected by pain or deformity then it can be reasonable to consider an operation. Other reasons can include difficulty with footwear or ulcer formation due to ankle deformity or severe instability that is making walking dangerous.

What surgical options are there?

There are two main operations available for ankle arthritis:

- Ankle fusion (arthrodesis)
- Ankle replacement (arthroplasty)

The choice between the two options will be made in conjunction with the patient and surgeon.

What is an ankle fusion?

An ankle fusion, or arthrodesis, aims to stiffen the ankle joint by removing the remainder of the joint surface between the tibia and the talus. It is usually performed by keyhole, or arthroscopic surgery, but in some instances (such as severe deformity) needs to be done as an open procedure. The damaged joint surfaces are removed and bones held together using screws to maintain the position. Over a period of six to twelve weeks the bones fuse to become one bone mass. The surgery takes between one to two hours and x-ray is used during the procedure to confirm the position of the screws.

What happens after an ankle fusion?

When you wake from surgery a half cast from your knee to your toes that supports the ankle. The surgery is commonly done as a day procedure but some patients need to stay overnight for pain relief or nursing support while being non-weight bearing. This will be changed to either a synthetic cast or fixed ankle boot after two weeks. The sutures are removed either by the GP or surgeon two weeks post-operatively. Patients are normally allowed to partially weight bear at this stage in the plaster

cast. At six weeks post operatively it would be expected that patients fully weight bear whilst in the cast or boot. They will see your surgeon ten to twelve weeks following the operation with an x-ray of the ankle. This will determine whether it has fused successfully. If it has, they can commence weight bearing without support and resume normal activities.

What can I expect long-term following an ankle fusion?

Ankle fusions generally provide good pain relief and have a greater than 90% success rate as measured by patient satisfaction in the short to medium term. Interestingly, as much as 50% movement of the foot is maintained as the other joints compensate provided they are not arthritis. Most patients walk with a normal gait and return to low-impact activities like golf and cycling. High impact activity like running, tennis and soccer may be limited due to ankle stiffness. At this stage, there is no evidence to suggest that high impact activity on a fused ankle joint will damage the joint further.

What are the risks associated with an ankle fusion?

There is a small (<5%) risk of non-union. That is, the attempted fusion is unsuccessful and the bones remain separate. The chance of this happening in smokers is five times higher than non-smokers due to the poor blood supply in the smoking population. Sometimes revision surgery can be required.

Because the ankle joint has been stiffened, more stress will be absorbed by the adjacent joints such as the joint underneath the ankle (the subtalar joint) and the joints in the foot (talonavicular and calcaneocuboid joints). Signs of arthritis in the neighbouring joints are common on x-rays ten years after an ankle fusion but many patients have no symptoms.

Occasionally the screws are prominent under the skin and need to be removed once the ankle is fused. This is a minor day procedure.

There is a small risk of infection and blood clots and measures are taken to minimise these risks where possible. Patients are encouraged to mobilise early to limit the risk of blood clots and occasionally blood-thinning medication may be used.



What is an ankle replacement?

A total ankle replacement is an operation to replace the worn-out ankle joint with metal components and a plastic insert to mimic your natural ankle joint and preserve the range of motion. The metal components are fixed with cement and bone pegs and have a special coating to allow the metal to integrate with the bone. In the UK where some surgeons are trained in ankle replacements, most implants have a mobile component made of hard wearing plastic (ultrahigh molecular weight polyethylene) which sits freely between the tibia and the talus. It moves forward and backwards slightly during ankle motion. It is performed through an incision at the front of the ankle and the surgery takes about two hours to perform.



What happens after an ankle replacement?

A cast is applied to support the ankle joint. Generally patients are non-weight bearing for the first two weeks following surgery to allow the wounds to heal. Two weeks post-operatively

you will see their surgeon or GP who will check the wound and consider a fixed ankle boot or walking cast. Patients usually can come out of the boot and move your ankle while non-weight bearing at this stage. They can partially weight bear while wearing the boot. They will see your surgeon again six weeks following the operation. If, at six weeks post-operatively, patients are comfortable, the wound has settled and they are mobilizing comfortably they can come out of the boot and start to walk independently.

When can I return to work?

Patients return to work, provided there are no complications, any time between six and twelve weeks post-operatively.

When can I drive?

Patients can drive when they are mobilizing independently out of plaster or boot.

What are the risks associated with an ankle replacement?

A serious complication is a deep wound infection of the prosthetic ankle joint. This occurs in less than 1 in 100 people but can have disastrous outcomes. Further surgery to debride the wound, and in some cases remove the implant altogether, may be required.

Ankle replacements are still a relatively new operation. They are not as reliable as hip or knee replacements. Around 10-15% of ankle replacements wear out by becoming loose or 'failing' after 10 years. If this occurs, ankle replacements generally require conversion to a fusion. This can be more difficult than a primary fusion due to loss of bone stock and occasionally infection.

Some ankle replacements loosen earlier than 10 years and require revision in as little as one to two years post-operatively.

The incision used from ankle replacements is a long, midline incision which can be complicated by wound infection. In addition, the incision is close to some major nerves and blood vessels in the ankle which can be stretched, or even permanently damaged during the operation. This can lead to some numbness around the scar or in the foot. Occasionally, the pain does not resolved with time.

Ongoing pain can still occur, particularly in the joints around the ankle. Surgery to treat the neighbouring joints may be required.

Following ankle replacement, it is unusual to regain any more movement that what was present before the operation. Movement is determined by muscles, tendons, ligaments and nerves and these are not replaced during an ankle replacement. In the setting of a severely stiff ankle, an ankle arthrodesis (fusion) may be more appropriate.

Ankle replacements are a major operation and have a risk of blood clots in the legs which can travel to the lungs and cause a pulmonary embolus. This is rare but devastating. The management and prevention of blood clots needs to be balanced against the risk of catastrophic bleeding from blood-thinning medication.

Should I have an ankle replacement or ankle fusion?

Deciding between an ankle arthrodesis can be a relatively simple procedure for patients who have a contraindication for one operation. For example, patients with severe deformity are generally not suited for an ankle replacement due to the large bone cuts required to correct the deformity. In this instance, an ankle fusion may be more appropriate. The decision will be made between the patient, occasionally their carers and their surgeon.

If you have any questions please don't hesitate to contact your surgeon:

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