GURDIP CHAHAL

FOOT AND ANKLE SURGEON

NHS Foundation Trust

Triple Fusion

Following your consultation with a member of the Foot and Ankle team you are considering a triple fusion (or variation of this procedure). This leaflet aims to give you additional information about your condition and the treatment. It is designed to give you some general details about the recovery from surgery if necessary and the common risks and complications. This leaflet is not for self diagnosis. Please ask your surgeon if you have any further questions. If anything changes before the operation please let your surgeon or their secretary know (e.g. skin problems, infections, injuries).

What is it?

This is an operation to "fuse" or stiffen the three main joints of the back part of the foot (hence "triple fusion").

Why would it be performed?

Triple fusions are performed for two main reasons:

- Arthritis of the joints. Because of a previous injury that has damaged the joints, a generalised condition such as osteoarthritis or rheumatoid arthritis or because the joint is just wearing out for some other reason
- Severe deformity of the foot such as a flat foot, higharched or "cavus" foot, a club foot or other deformity. Sometimes, these can be corrected by breaking and reshaping the bones, but, in other cases, it is best to stiffen the joints in the corrected position, particularly if the joints are already stiff or the foot is weak.

If the damage or deformity is limited to 1 or 2 of the foot joints, it may be possible to treat it by a more limited operation. However, as these joints work together, damage to one is often accompanied by damage to others. We often inject local anaesthetic or steroid into damaged joints before surgery is considered, to see whether this helps ease the pain. For some people, this removes the pain and surgery is unnecessary. For others, pain relief does not last but the results of the injection helps us to decide which joints to fuse.

What does it involve?

Two cuts are made, one along the outer side of the foot and one on the inner side. Usually, these are 5-10 cm long. Each of the three joints is opened up; the joint surfaces removed and, if necessary, reshaped to correct a deformity. The joints are then put in the correct place and fixed together with screws, pins or staples. The heel ("subtalar") joint is usually fixed with a screw passed through a small cut in the back of the heel. The other joints are fixed through the main cuts. It is usually necessary to put some extra bone into a triple fusion to encourage it to heal and to fill any gaps in the fusion left by correcting the deformity. Often, this extra bone can be obtained from the bone that is cut out to prepare the fusion. Sometimes, there is insufficient bone from this and bone has to be taken from the tibia bone just below the knee. Occasionally, if a large amount of bone is required, it must be taken from the pelvis just above the hip or taken from a bone bank. Some people with foot deformities have a tight Achilles tendon ("heel cord") or weak muscles or both. The Achilles tendon may be lengthened during surgery by making small cuts in the calf and stretching the tendon. Other tendons may be re-routed. Some people with deformities of the foot also have deformed toes. Again, these may be corrected at the same time or more often at a later operation. Most people who are reasonably fit can come into hospital on the day of surgery, having had a medical checkup 2-6 weeks before. After surgery, your foot will tend to swell up quite a lot. You will therefore have to rest with your foot raised in bed to help the swelling to go down. This may take anything from 2 days to a week. If you get up too quickly, this may cause problems with the healing of

Triple Fusion

your foot. Once the swelling goes down and the cuts are healing, your plaster may be changed and you can get up with crutches and go home. The physiotherapist will show you how to walk with crutches. We will get you up as soon as possible! Most people are in hospital for 2-4 days.

Will I have to go to sleep (general anaesthetic)?

The operation can be done under general anaesthetic (asleep). Alternatively, an injection in the back, leg or around the ankle can be given to make the foot numb while you remain awake. Local anaesthetic injections do not always work and, in that case, you may have to go to sleep if the operation is to be performed. Your anaesthetist will advise you about the best choice of anaesthetic for you. In addition, local anaesthetic may be injected into your leg or foot while you are asleep to reduce the pain after the operation even if you go to sleep for the surgery. You will also be given painkilling tablets as required.

Will I have a plaster on afterwards?

You will need to wear a plaster from your knee to your toes until the joints have fused usually 10-14 weeks. For the first 2 weeks you should not put any weight on your foot as it may disturb the healing joints. (Occasionally touching your foot to the ground for balance is OK, but no more.)

What will happen after I go home?

By the time you go home you will have mastered walking on crutches without putting weight on your foot. You should go around like this for 2 weeks. 14-17 days after your operation you will be seen again by a nurse in the clinic. Your plaster will be removed and the cuts and swelling on your foot checked and stitches removed. If all is well you will be put back in plaster. You should continue walking with your crutches but only partial weight bearing. This means resting your foot on the floor for balance and to make walking easier but not putting full weight on the foot. Your foot should be elevated for most of the first two weeks. 6 weeks after your surgery, you will have a plaster change, and either a new plaster or an aircast boot. After this, you can put your weight on your foot with crutches. Increase the weight you put through your foot gradually as pain and swelling allow. If you are in a removable boot, take this off when safe at home and move your foot and ankle about gently. You will have further X rays after 3 months. If the X rays show that the joint is fused sufficiently to take your weight, the plaster or boot can be removed and you can start walking without it. Some people need to stay in plaster or a boot longer than 3 months .

How soon can I....

Walk on the foot?

You should not walk on the foot for at least 2 weeks after surgery. Your surgeon or foot and ankle nurse will advise you when you can start taking some weight on the foot. When you start putting weight on your foot we will give you a special shoe that you can wear over your plaster or an aircast boot.

Go back to work?

If your foot is comfortable and you can keep your foot up and work with your foot in a special shoe, you can go back to work within 3-6 weeks of surgery. In a manual job with a lot of dirt or dust around and a lot of pressure on your foot, you may need to take anything up to 6 months off work. How long you are away will depend on where your job fits between these two extremes.

Drive?

If only your left foot is operated on and you have an automatic car, you can drive within a

Triple Fusion

few weeks of the operation, when your foot is comfortable enough and you can bear weight through it. Most people prefer to wait till the plaster is removed and they can wear a shoe. If it is your right foot, you will need to wait for the plaster to come off and you are fully weight bearing. Drive short distances before long ones. If you cannot safely make an emergency stop your insurance will not cover you in the event of an accident. You must be in control of the car at all times.

Play sport?

After your plaster is removed you can start taking increasing exercise. Start with walking or cycling, building up to more vigorous exercise as comfort and flexibility permit. The foot will be stiffer after surgery and you may not be able to do all you could before. Many people find that because the foot is more comfortable than before surgery they can do more than they could before the operation. Most people can walk a reasonable distance on the flat, slopes and stairs, drive and cycle. Walking on rough ground is difficult after a triple fusion because the foot is stiffer. It is unusual to play vigorous sports such as squash or football after a triple fusion.

Risks

- COVID-19 infection increases the risk of complications and we recommend you read the separate leaflet about this. If you are in one of the vulnerable groups you should think very carefully about proceeding with surgery unless it is absolutely necessary
- Chronic regional pain syndrome (CRPS)
- The main problem is the swelling of the foot, which may take many months to go down fully. Some people's feet always remain slightly puffy. You may find that only trainers are comfortable for several months. Keeping your foot up, applying ice or wearing elastic stockings may help to keep the swelling down. Swelling is part of your body's response to surgery rather than the operation "going wrong" but you may be concerned that something has gone wrong. If you are worried about the swelling of your foot, ask one of the foot and ankle team (your physiotherapist, nurse or surgeon) whether the amount of swelling you have is reasonable for your stage of recovery.
- If you need to have a bone graft taken from your pelvis, this is often quite painful for a couple of weeks and some people have a little numb area beneath the scar. This is normal, but can be irritating.
- The most serious possible problem is infection in the bones of the foot. This only happens in about 1 in 100 people, but, if it does, it is serious as further surgery to drain and remove the infected bone and any infected screws or pins will be necessary. You may then need more surgery to encourage the foot to fuse in a satisfactory position. The result is not usually as good after such a major problem as if the foot had healed normally.
- About 5 to 10 in 100 triple fusions do not heal properly and need a further operation for the bones to fuse; basically another triple or partial fusion operation.
- Minor infections in the wounds are slightly more common and normally settle after a short course of antibiotics.
- Sometimes the cuts, especially the one on the outer surface of the foot where the blood supply is not so good, are rather slow to heal. This usually just requires extra dressing changes and careful watching to make sure the wound does not become infected.
- Research shows that 5-10 in 100 triple

Triple Fusion

fusions do not heal in exactly the position intended, either because the position achieved at surgery was not exactly right or because the bones have shifted slightly in plaster. Usually this does not cause any problem, although the foot may not look "quite right". Occasionally the position is a problem and further surgery is required to correct it.

- Sometimes screws or pins, especially the screw through the heel, become loose as the bone heals and cause pain or rub on your shoe. If this happens they can be removed usually a simple operation which it is often possible to do under local anaesthetic.
- Deep vein thrombosis/Pulmonary Embolus (blood clot in your legs or lungs)
- Chronic regional pain syndrome
- Plaster sores/tourniquet issues

What can I do to help?

Most patients find that simple measures can make a big difference to the outcome of surgery. The evidence from studies and our experience supports this: Take simple Vitamin C and vitamin D tablets or multivitamins – needed for healing. STOP smoking – smoking slows down healing and is linked to increased complications. Keep fit and a healthy weight – many foot problems are improved by loosing weight

Further information

The figures for complications given in this leaflet have been taken from information produced by the British Orthopaedic Foot Surgery Society using audits from all areas of the UK.

The British Orthopaedic Foot Surgery Society web site is available at:

www.bofas.org.uk

Mann, Coughlin and Saltzman (2007) Surgery of the Foot and Ankle 8th edition , Elsevier, Philadelphia

Myerson , S (Ed) (2000) Foot and Ankle Disorders, Saunders, Philadelphia

NHS Constitution. Information on your rights and responsibilities. Available at www.nhs.uk/aboutnhs/constitution