Patient Information: First Metatarsophalangeal Joint Fusion (Stiffening of big toe joint)

Aintree University Hospital NHS
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What is first metatarsophalangeal joint arthritis?

Arthritis is an umbrella term for a number of conditions that damage the cartilage in a normal joint. This can occur in any joint of the body although this is most common in joints that bear weight. Almost half of people in their 60s and 70s have arthritis of the foot and/or ankle. The level of symptoms can vary hugely.

There are many different types of arthritis. They can broadly be divided into mechanical or chemical. The most common type, osteoarthritis ('wear and tear arthritis') comes from damage to joint cartilage that comes with age or after injury. Sometimes a traumatic injury will result in arthritis in the injured joint even though the joint received proper medical care at the time of injury.

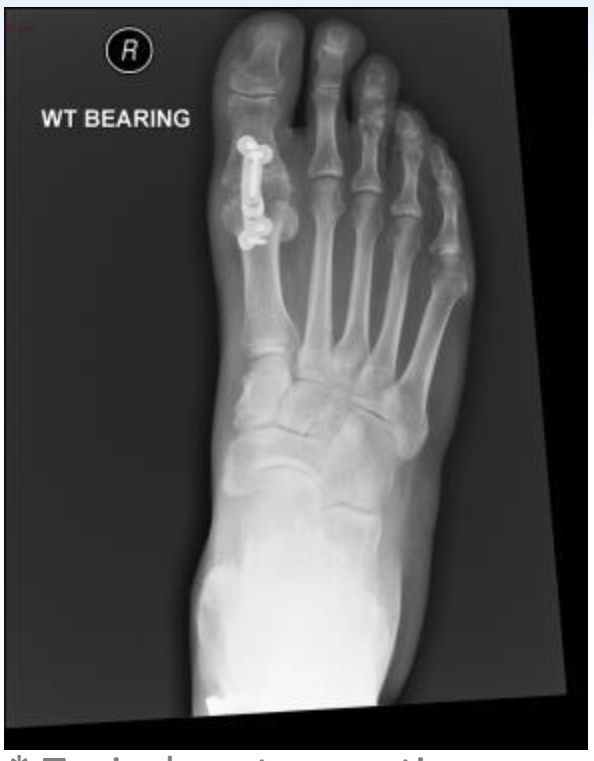
The cartliage can also be damaged by inflammatory arthritis. Types of these include rheumatoid arthritis, gout, lupus, ankylosing spondylitis, psoriatic arthritis and joint infection.

The result of first metatarsophalangeal joint arthritis is inflammation, redness, swelling, stiffness and pain in the main big toe joint.

What is a fusion?

An arthrodesis (another name for fusion or stiffening) is an operation performed to remove a joint and make the two bones either side of that joint into one complete bone.

It may be used to treat a joint that is affected by severe arthritis or to correct deformity.



* Typical post-operative xray

Your body is tricked into treating the joint as it would a broken bone. The joint surface is removed and screws or other metalwork are passed across the joint to maintain the position while bone healing occurs. Bone then grows across the joint, fusing it solid. Because we try and put it in an ideal position, walking and other activities are usually easier afterwards. The aim of this operation is to turn a stiff painful joint into a stiff joint with little symptoms. The operation is carried out only when all appropriate non-surgical measures have failed to control your pain.

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What are the alternatives?

There are many non-surgical treatments of arthritis. For example:

- Anti-inflammatory and pain medication
- Injections, such as steroids are sometimes helpful for symptom control when delaying the need for surgery
- Restricting activity
- Orthoses (braces or insoles)
- Footwear adjustment
- Walking aids, such as crutches or a walking stick

In early arthritis, other surgical techniques may be preferable, such as bone spur removal.

How is the operation performed?

The operation is normally done under general anaesthetic with local anaesthetic put in during the operation. This means that there will be an increase in pain when the local anaesthetic wears off up to 12 hours after the operation. There is an incision over the top of the toe. The cartilage of the joint is removed. The two bones are then fixed using a combination of plates and screws.

What can I expect after the operation?

This surgery is usually performed as a day-case procedure, meaning you return home that night. You will be provided with a surgical sandal that you are required to wear for the first 6 weeks.

You should keep your foot up as much as possible, especially for the first 2 weeks. The stitches will be removed at 2 weeks and X-Rays will be obtained at 6 weeks in clinic.

If everything is ok at this stage, you will be allowed to return to a normal shoe. Because the foot is normally swollen, loose soft shoes may be needed to start off with. Our usual follow up clinic appointments are at 2 weeks, 6 weeks, 3 months and 6 months

The toe can remain swollen for many months following the operation, and this should be expected.

If successful patients can expect a good level of function. The toe should not limit activities of daily living. Patients do not usually have a limp. Many patients can participate in light impact sport (eg running, tennis etc). It should not effect non-impact (eg cycling, swimming etc). Ladies will normally be limited in the height of heels they can wear (around ¾ inch).

What activities can I do?

Foot and ankle exercises can begin immediately (see below). General exercise progression is from when the wound has healed starting with low impact (cycling and swimming) to medium impact (stepper, elliptical/cross trainer, walking) to higher impact activity (jogging, exercise classes and sports).

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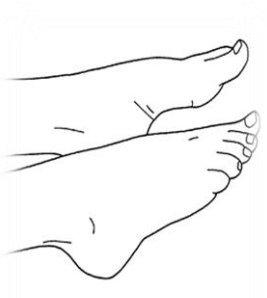
Physiotherapy is not normally needed as the joint has been stiffened. The general rule is to 'listen to your body'. The main reason NOT to progress is increasing pain (during and after activity) and swelling that impedes normal movement and muscle control/strength.

Exercises:



Alternately point and flex the operated foot. This helps maintain blood flow and movement at the ankle.

Cross your operated leg over the opposite knee and grasp your foot. Gently bend the foot upwards, downwards, inwards and outwards. Then, using your hands, wiggle all of the smaller toes.

Work, Flying and Driving:

You can sometimes return to office work after 6 weeks. For those patients who cannot get into work /do more standing / do manual work may need 2-4 months off work.

You can drive after 6 weeks if the foot is comfortable enough to drive safely. It is imperative that you are safe making an emergency stop, and therefore practicing before driving is recommended. Return to driving may be possible earlier if the car is automatic and the left foot has been operated on. More information available at www.dvla.gov.uk

According to the Department of Health flying should be avoided for 8 weeks after surgery. For further information see below: www.nhs.uk/chg/Pages/2615.aspx?CategoryID69

What are the risks of surgery?

Infection – The rate of superficial infection within our department is 1%, the majority of which will respond to oral antibiotics. The risk of deep infection is less than 1 in 100.

Metal work problems – Metal work rarely fails, however some screws can become prominent as the swelling resolves and can require removal if they are troublesome.

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Thrombosis – The risk of getting a clot in your leg following ankle ligament surgery is small. Some patients may be at an increased risk. Your surgeon will advise on clot prevention therapy to yourself based on any noted risks. We advise that you drink plenty of water and move around as much as is sensible to reduce the chances of a clot.
Please be aware of symptoms of thrombosis, including:

- Significant swelling – you will have some swelling due to the nature of the surgery.
- Increasing calf tenderness.
- Heat and redness compared to the other leg.
- Shortness of breath or chest pain when breathing in.

If any concerns regarding these, please seek medical attention urgently

Ongoing pain
Some patients will have permanent pain after any operation. Usually this as at a low level, especially compared to before the operation. Sometimes it can be more severe. Usually a cause and treatment can be given for it but this is not always the case

Nonunion (bone does not heal) – This has been reported in 2-12% of big toe fusions. Factors that can increase nonunion include SMOKING, diabetes, rheumatoid arthritis, steroid use and previous surgery. We encourage all smoking to cease prior to surgery as this can increase complications by up to 16 times.

Malunion – approximately 5-10% of fusions may heal in a not ideal position. This usually doesn't cause symptoms, but rarely may require further surgery.

Nerve injury – Altered or lack of feeling over the top of the toe can happen in up to 45% of cases. This isusually because the nerve was stretched by bony lumps before the operation or pressure on the nerve in the operation. In the majority of cases this is temporary but can occasionally be permanent.

Complex regional pain syndrome - Some patients develop nerve pain due to the nerves working in a not normal way after the operation. This can happen after any injury /operation. Usually this settles with simple treatment but can occasionally be long-term (probably less than 1 in 100). Some research has shown this can be reduced by taking normal over the counter Vitamin C a few days before the operation.

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Further Information

The figures for complications given in this leaflet have been taken from the most up to date publications on this subject (as of October 2014).

Other reading:

The British Orthopaedic Foot Surgery Society web site is available at: http://www.bofas.org.uk/PatientInformation.aspx (accessed May 2014).

The foot and ankle hyperbook: www.foothyperbook.com (accessed May 2014).

What if I need to contact someone?

Fracture Clinic –

Tel: 0151 529 2554 (Monday – Friday)

Please leave a message on the answer machine stating your name and contact number and a member of staff will return your call.

Ward 17a – (always open for advice)

Tel: 0151 529 3511

If you require a special edition of this leaflet

This leaflet is available in large print, Braille, on audio tape or disk and in other languages on request. Please contact:

Tel No: 0151 529 2906

Email: interpretationandtranslation @aintree.nhs.uk

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