HIGH TIBIAL OSTEOTOMY - PATIENT INFORMATION LEAFLET

Why am I being offered this operation?
You have osteoarthritis of the knee joint which is causing pain and disability, despite treatment that may have been prescribed previously. In your case the osteoarthritis only affects the inner half of the knee. Depending on your age and activity levels, a knee replacement may not be the most appropriate treatment for you (more details about this later). The high tibial osteotomy may help you avoid the need for a knee replacement in the future.

What is osteoarthritis?
In a healthy knee joint, there is a smooth lining which covers the ends of the bones that make up the joint. It helps the joint move freely. In osteoarthritis, this smooth lining thins, roughens and is permanently damaged. This causes symptoms of joint pain, swelling and stiffness. Patients experience a reduced quality of life as they struggle with daily activities like walking, standing, sitting and sleeping and often cannot work due to the disability. Osteoarthritis is the leading cause of disability worldwide. Nearly 1 in 5 people over 45 years in the UK will seek treatment for osteoarthritis of the knee joint.

How does this operation work?
During this operation the bone is cut just below the knee joint and a small wedge is opened and held with a plate, to shift your body weight away from the damaged part of the knee to a healthy part of the knee (see Figure 1). By ‘unloading’ the damaged part of the knee, your knee pain and disability is improved.

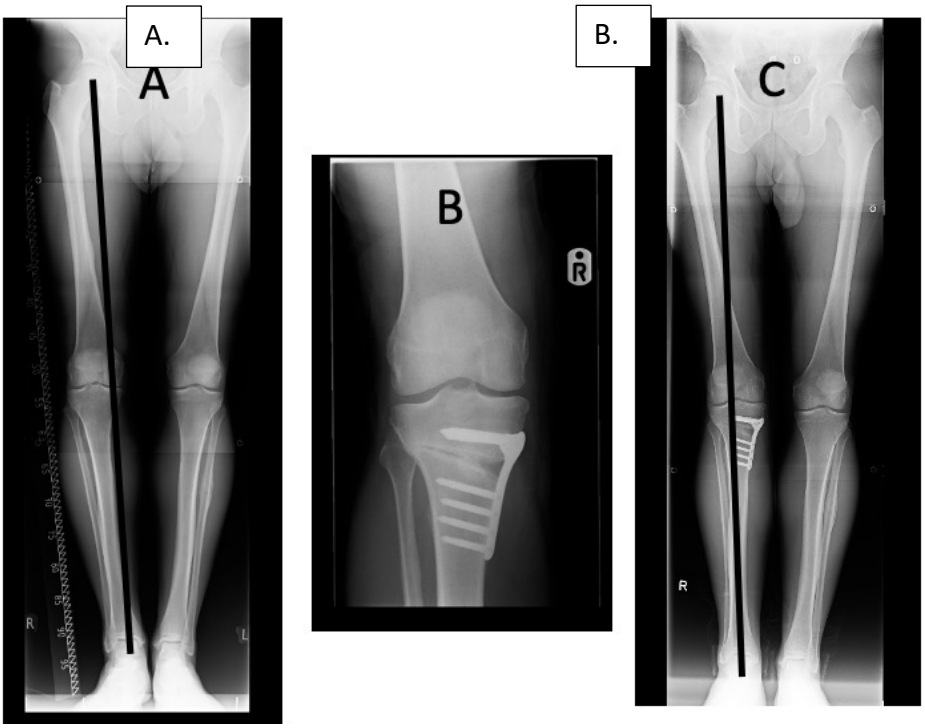

Figure 1: A. The black line is drawn from the centre of the hip to the centre of the ankle and represents the weight-bearing axis (how the body weight passes through the leg). Normally this weight-bearing axis should also pass through the centre of the knee. In this patient suffering from knee OA the weight-bearing axis is abnormal and passes through the inner diseased half of the knee instead of the centre of the knee **B:** A wedge has been opened just below the knee joint and stabilised with plates and screws in the operation called high tibial osteotomy (HTO). By opening this wedge of bone at the proximal end of a long bone, the overall alignment of the lower leg and its weight-bearing axis is altered as shown in **C.** The lower leg has been realigned so that the weight-bearing axis (black line) now passes through the middle of the knee, away from the diseased inner half of the knee. This shifting of the weight-bearing axis away from the arthritic inner part of the knee following HTO relives pain and reduces disability with preservation of the native knee joint.

What are the benefits and risks of high tibial osteotomy?

Surgery with high tibial osteotomy has the advantage of permanently altering the malalignment of the lower leg that is thought to contribute to the pain from osteoarthritis. The surgery will avoid the need for a knee replacement in around 90% of patients for 5 years and in 70% of patients for 10 years after the operation. The downside is that you are exposed to the risks of surgery such as infection, bleeding, blood clots (DVT and pulmonary embolism) and nerve/blood vessel injury. It is always difficult to estimate the risk of complications with any surgery accurately. However, the approximate chance of any such complication with this operation is around 1 in 15.

Why can't I just have a knee replacement?

Recent research suggests that it is advisable to delay knee replacement surgery by 5-10 years in patients under the age of 60 years because it is not as successful in this age group. This is because during knee replacement surgery, the diseased part of the knee is physically removed and replaced with an artificial implant made from metal and plastic. Patients under 60 years tend to also be very active and are still usually working. This higher activity level in younger patients results in the metal/plastic joint of the knee replacement wearing out much more quickly. This means that the artificial joint has to be replaced, sometimes several times, and patients have to go through increasingly complex repeat operations. Most patients also cannot return to physical type work or running sports after knee replacement. In young, active, working age patients, it is therefore best to delay knee replacement surgery as long as possible, and other treatments should be used instead. It is worth bearing in mind that knee replacement surgery may still be unavoidable if the osteoarthritis affects the whole knee joint, regardless of your age. However, in your case the osteoarthritis only affects the inner half of the knee and therefore you have been offered the option of high tibial osteotomy, that may help avoid the need for knee replacement surgery.

What about the recovery from this operation?
Most patients will have their surgery as a day-case or spend an overnight stay in hospital after the operation. You will be discharged home the following day with crutches and a knee brace. Depending on how the surgery is performed, you may or may not be permitted to bear weight through the leg and your surgeon will advise you regarding this. You will need the assistance the crutches initially to walk around. It is normal for your leg to be swollen after the operation and for you to experience some discomfort or pain around the operation site and scar. You will be given some painkillers to take home. You will be seen at the outpatient clinic around 2-3 weeks after the operation to have some x-rays and to remove any stiches or staples. Your mobility will gradually improve over the first 4-6 weeks after your operation. You may also be referred to physiotherapy during the recovery stage to help you with your rehabilitation. It may take you up to 3 months to fully recover from the operation.

Where can I find more information?
You may find the following websites are useful for additional information:

1. **www.orthoinfo.aaos.org (**Search keyword - High tibial osteotomy; your operation will be the 'opening wedge' high tibial osteotomy)

2. **www.ukkor.co.uk (**Look under 'Information for patients')

With your consent, your name and email may be added to this national register for long term follow up if you do have the surgery. You will receive questionnaires (approximately one per year) via email that help us gather long term data about the operation. The register is designed to monitor how long the operation has lasted and collect patient reported outcome scores (PROMS). The knowledge gained from such data will help recognise any potential problems with the operation, and ultimately help others having the operation.

Updated By Anish Amin May 2022