Rehabilitation after Osteotomy

Dr Keith Holt

Osteotomy is a major procedure that requires about 5 days in hospital. After this time, most people can get around with crutches, and can cope at home. Despite this, a good deal of rest is still required, and it is important that the leg is elevated for a good deal of the day in the first week or two in order to keep the swelling down. The leg will be re-x-rayed at 6 and 12 weeks post surgery to assess bony union, and generally this starts to occur between these two times: full union however may take some months. After solid union has been achieved, the plate can be removed, thereby improving local symptoms. Ultimately, a relatively pain free knee is expected and, because the surgery is outside the knee joint, the range of motion previously experienced, should remain. The bottom line is that: a good osteotomy feels more normal, and is more functional, than a knee replacement.

In hospital

After surgery, the in-hospital physiotherapists will visit you every day, usually twice a day. They will help you to achieve good knee flexion, hopefully to 90º or more, by the time you leave. They will also teach you how to walk: initially with a frame and then with crutches. For those who have stairs to negotiate at home, some additional training and practice will be required. This will all be done prior to discharge.

The ward staff, in association with Dr Holt, will also help you to achieve adequate pain relief. Initially, a local anaesthetic block, administered in the upper thigh (adductor canal) during your anaesthetic, will control a good deal of the pain. In addition, slow release narcotic tablets will be used in the background with faster release versions being used in between times to fill in any gaps in the relief. If this does not adequately control the pain, then intravenous agents, self-administered by a button controlled pump, will be used (PCA - patient controlled analgesia).

Usually by the third day, the pain is reduced to a level whereby it can be totally controlled by tablets. The aim of the last couple of days in hospital is then to fine tune those tablets so that you can manage at home. If you are doing well however, then you are welcome to return home earlier.

After discharge

There are a few rules to follow after leaving the hospital and, if followed, these will improve the speed and quality of your recovery.

1. *Do not use anti-inflammatory tablets as these prevent bone healing. This includes Nurofen, Naproxen, Voltaren etc., as well as the newer Cox 2 inhibitors such as Celebrex and Mobic.*

2. *Rest is very important. The quicker the swelling goes down, the quicker the knee bend returns. The leg needs to be up, waist high or thereabouts, for most of the time in the first 7 - 10 days. More walking is not better.*

3. *Both walking and excessive exercise make the knee swell. This is counterproductive to regaining knee flexion, and therefore should be limited. It is not necessary to get either fit or strong in the early weeks, you just need good knee flexion.*

4. *The initial aim, for an osteotomy without a combined tibial tubercle transfer, should be to regain 90º of flexion in the first 4 - 6 weeks. More than that is not necessary.*

5. *Note however that: if your osteotomy has been combined with a patella re-alignment (tibial tubercle transfer - TTT), then you will be instructed to regain flexion more slowly, and quads exercises will be limited for about 6 weeks. This is to protect the tubercle osteotomy which can be damaged by excessive and repetitive knee flexion, and by repetitive quads contraction.*

6. *The knee can be flexed up both by easy means and by difficult ones. It is only knee bending, so there is no point in doing anything the hard way if it can be done an easier way: and for most people, the easiest way to bend the knee is by sitting on a hard chair or table, allowing the knee hang down to the floor. The leg can then be swung back and forth, either freely, or on a skate board. Similarly, it can be pushed back with the other leg, holding it for about 10 seconds at the point of full flexion. This should be done as 5 repetitions, 3 times per day.*

7. *Physiotherapy is rarely needed early on. If it looks like you will be able to achieve the knee range of motion described above, and you can maintain that movement yourself, you definitely do not need physiotherapy.*

8. *Once the bone has shown good signs of healing (usually at 6 - 9 weeks post surgery), most people will benefit from some therapy. It is just a matter of judging when the best time to begin that is.*

9. *The plate that holds the bone together is quite strong. You may thus put full weight on this for short periods of time. Despite this however, it is advisable not to actually walk on this leg without using crutches to take most of the weight off the plate.*

10. *The plate has so called 'locking screws' in it, such that*

the head of each screw actually binds tightly into the slot of the plate. This means that the screws are permanently fixed at 90º to the plate. This is done so that the screws cannot bend down under load, hence preventing the osteotomy from collapsing down. However, the fixation can still fail if subjected to excessive loads repeatedly. Excessive walking with full weight bearing, for instance, can ultimately lead to failure, either by having the screws cut into the bone or, eventually, by stress fatigue and breakage of one or more screws.

11. *Remember that you are only putting weight through the leg via the plate, and that this transfers that weight via the width of 4 screws. It is not a big area, so pressures are high. Hence, until the bone actually starts to unite, full weight bearing is expected to be a bit sore.*

12. *Most people will go home with some moderately strong analgesics supplied by the hospital on discharge. If these are narcotics (oxycodone or hydromorphone for example), then there is a limited supply which is permissible by law. Repeat prescriptions can be obtained by ringing Dr Holt's office during working hours. Please supply the fax number, and the name and address of your pharmacy. We will then fax the prescription to them and post out the original.*

13. *The plan for most people is to take a slow release analgesic twice a day, and then to fill in the gaps with a quick release analgesic. The ward will help you work out a plan that suits you and your analgesic requirements.*

14. *Some form of anti-coagulation to decrease the risk of DVT (deep venous thrombosis) is usually provided. Initially this may be an injectable drug such as clexane but, by the time of discharge, low dose aspirin (100mg - e.g. Cartia) taken once a day is usually enough. This is generally taken for 2 - 6 weeks depending on circumstances.*

Return to work

The average time to return to work is about 2 months. The soonest however is probably about 2 weeks, but the job needs to be very sedentary, preferably not full time; and the leg needs to be doing well. If the job requires you to be on your feet all day, then 6 - 10 weeks is more realistic. If there is lots of walking or lifting involved, then the time taken will be longer. This is therefore, a very individual process, and one that will require on-going assessment of your recovery to have a realistic idea about.

Driving

You can drive when you feel safe to do so. In the first few weeks however, your reaction times will be very much slower than normal. This therefore means that common sense, combined with some caution, will be required.

Travelling

If you are travelling soon after your operation, try and keep the journey short, try and keep the leg up, and keep taking your anti-coagulant. Do not wear a splint or bandage on the knee whilst travelling, as this slows the circulation down, thereby increasing the risk of blood clotting in the veins. You are at increased risk of DVT (deep vein thrombosis) and PE (pulmonary embolus) for at least 6 weeks following surgery, and perhaps longer. Therefore, if you travel any distance in this time frame, be it by car, train or plane, you should consider thinning your blood out for the trip. Dr Holt can organise an appropriate oral anti-coagulant, be that just low dose aspirin or something like rivaroxaban (for bigger trips) if you wish. IF you need this organising just let Dr Holt, or his staff, know.

Review

Unless otherwise advised by Dr Holt, you should make an appointment to see him at the 6 week mark. That is, some 5 weeks after discharge. All going well, a further appointment will then be made for the 3 month mark. The leg will be re-X-rayed at both of those visits, and good evidence of bony union is expected by the 3 month review.

Further follow up will then depend on where you live, progress of the recovery, etc. Where necessary, X-rays can be obtained in the country and, in most cases, can either be seen on line by Dr Holt or, if the radiology department cannot be accessed on line, then a CD can be asked for which can be posted up to Dr Holt's West Perth office.

Problems

***Infection** is not uncommon with this procedure. It is almost always superficial and rarely does it affect the deeper tissues or bone. It is thought that this is because of the poor blood supply of the skin in this area. This poor blood supply also has consequences for the delivery of any antibiotics used to treat this, hence, if the wound gets red, it is important to contact Dr Holt early so that antibiotics can be started before the problem is bad enough to require admission for intravenous antibiotics. If you end up having to use antibiotics, do not use ice on the affected area as this prevents delivery of the antibiotic to the tissues.*

***Swelling** can be a problem, and this is often around the wound area due to bleeding. Elevation to above waist height is then the treatment of choice. However, it is also important to keep walking, and hanging the leg down, to a minimum.*

Sometimes, the swelling is more around the ankle and perhaps associated with calf pain. This can be due to a DVT blocking some of the venous drainage of the leg. If this is suspected, even a week or more post surgery, then a duplex scan (ultrasound) of the vein may be required to work out the cause.

***Pain** is not generally an issue after the first 7 - 10 days providing adequate rest and elevation is undertaken. If you are having problems with pain control however, or if the drugs are causing excessive nausea, then you can ring Hollywood (The Orthopaedic Ward or the After Hours Manager - 08 93466000), Dr Holt's office (08 92124200) or Dr Holt directly (the Hollywood Hospital switch board can connect you straight through to his phone). Further information on pain management and the drugs you may be taking can be found on Dr Holt's website on the info sheet page.*

https://www.keithholt.com.au/patient-information.html
Look for - Pain management after Knee Replacement.

Or you can go to this directly using the following link:
https://www.keithholt.com.au/resources/Pain-management-after-TKR.pdf

For other problems, concerns or information:
Phone: +61 8 92124200
Fax: +61 8 94815724
*Email: **keith.holt@perthortho.com.au***
*URL: <**https://www.keithholt.com.au**>*