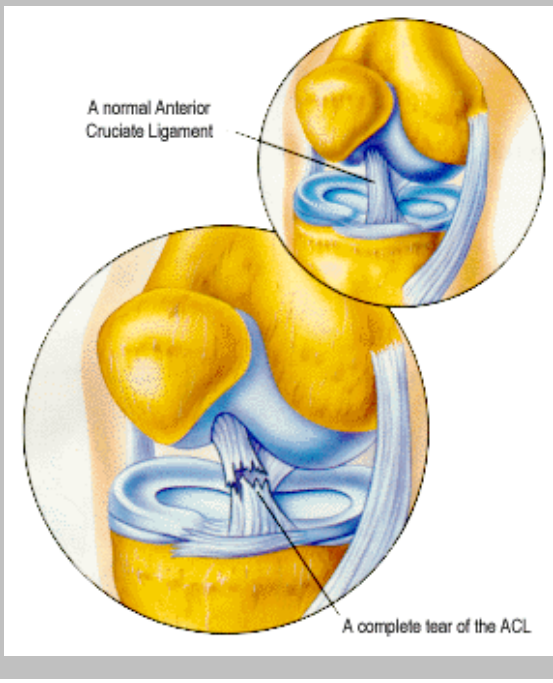
ACL Injury and Reconstruction

A/Prof Leo Pinczewski AM

North Sydney Orthopaedic and Sports Medicine Centre



The anterior cruciate ligament (ACL) is a 38mm long band of fibrous tissue that connects the femur (thigh bone) to the tibia (shin bone). Its function is to control stability when performing twisting actions. The cruciate ligament is usually not required for normal daily living activities, however, it is essential in controlling the rotation forces developed during side stepping, pivoting and landing from a jump.

THE CLASSIC HISTORY OF INJURY

The ACL is commonly injured whilst playing ball sports or skiing. Whilst playing ball sports upon attempting a pivot, side step or land from a jump, the knee gives way. When skiing, the ACL is injured when the binding fails to release as the ski twists the leg. Patients frequently hear or feel a snap, or crack accompanied by pain. Swelling commonly occurs within the hour. Frequently pain is felt on the outer aspect of the knee. The medial ligament of the knee joint may also be disrupted resulting in severe pain and swelling about the inner side of the joint

RATIONALE FOR TREATMENT

The goal of treatment of an injured knee is to return the patient to their desired level of activity without risk of further injury to the joint. Treatment may be without surgery (conservative treatment) or with surgery (surgical treatment). Those patients who have a ruptured ACL and are content with activities that require little in the way of side stepping (running in straight lines, cycling and swimming) may opt for conservative treatment.

Conservative Treatment

Conservative treatment is by physical therapy aimed at reducing swelling, restoring the range of motion of the knee joint and rehabilitating the full muscle power. Proprioceptive training to develop the necessary protective reflexes are required to protect the joint for normal daily living activities. As the cruciate ligament controls the joint during changes of direction, it is important to alter your sports to the ones involving straight line activity only. Social (non-competitive) sport may still be possible without instability as long as one does not change direction suddenly.

Surgical Treatment

Those patients who wish to pursue competitive ball sports, or who are involved in an occupation that demands a stable knee are at risk of repeated injury resulting in tears to the menisci, damage to the articular surface leading to degenerative arthritis and further disability. In these patients, surgical reconstruction is recommended. Studies have shown that this is best carried out on a pain free, healthy joint with a full range of motion.

All reconstructive procedures for the ACL require a graft. Our reconstructive technique involves grafting the torn ACL with collagen graft. This may involve use of your own hamstring tendon, or a donor graft. The choice of graft is made between you and your surgeon at the time of consultation. The graft is secured using specially designed screws allowing secure immediate fixation of the tendon within the joint allowing for a rapid rehabilitation. Our long term results suggest that stabilising the joint protects menisci and thus lessening later osteoarthritic degenerative change. Although ACL reconstruction surgery has a high probability of returning the knee joint to near normal stability and function, the end result for the patient depends largely upon a satisfactory rehabilitation and the presence of other damage within the joint. Advice will be given regarding the return to sporting activity, dependant on the amount of joint damage found at the time of reconstructive surgery.

WHAT IS INVOLVED FOR YOU AS THE PATIENT

- Healthy patients are admitted on the morning of their surgery and discharged in the afternoon.
- There must be no cuts, scratches, pimples or ulcers on your lower limb as this increases the risk of infection. You should not to shave or wax your legs for one week prior to surgery.
- Patients should cease smoking and taking the oral contraceptive pill one week prior to surgery
- Sedentary and office workers may return to work approximately 2-5 days following surgery.
- Driving an automatic car is possible as soon as pain allows after left knee surgery. Should the right knee be involved driving is permitted when you are able to walk without crutches.
- You will return for removal of the superficial dressings and a wound check at 7-10 days from surgery.
- Physiotherapy is commenced immediately. Your physiotherapist will supervise strengthening and walking. By 7 days after surgery you should be able to walk without crutches.
- Playing sport non-competitively or training is possible at 4 to 6 months. A return to competitive sport is permitted at 9-12 months following surgery, provided that there has been a complete rehabilitation (including the PEP program).

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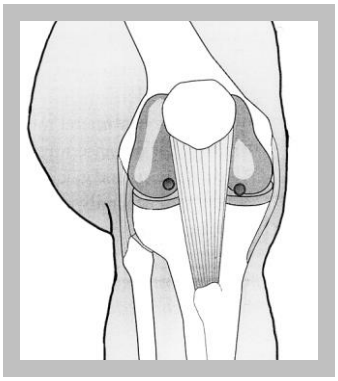
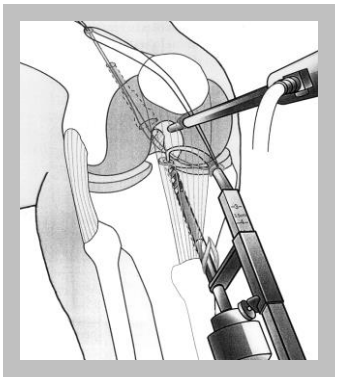
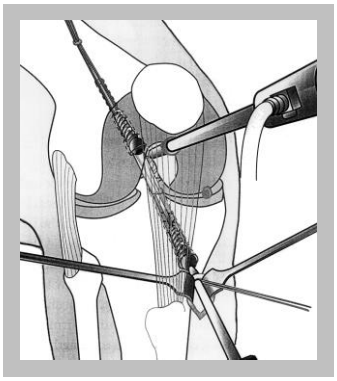
SURGICAL TECHNIQUE



Arthroscopy: Using an arthroscope through the two small incisions the surgeon will remove the torn ACL and perform required meniscal surgery.



Tunnel Drilling: Small tunnels are drilled in the bone.



Graft Fixation: The graft is inserted into the drilled tunnels and fixed in place with screws.

Complications related to surgery

- Pneumonia: Patients with a viral respiratory tract infection (common cold or flu) should inform the surgeon as soon as possible and may have their surgery postponed. Patients with asthma should bring their inhalers to hospital.
- Deep vein thrombosis and pulmonary embolus: Although this complication is rare, a combination of knee injury, prolonged transportation and immobilisation of the limb, smoking and the oral contraceptive pill or hormonal replacement therapy (HRT) all multiply to increase the risk. Any history of thrombosis should be brought to the attention of the surgeon. The oral contraceptive pill, HRT and smoking should cease one week prior to surgery.
- Excessive bleeding resulting in a haematoma is known to occur with patients taking aspirin or nonsteroidal anti-inflammatory drugs - such as Voltaren, Naprosyn or Indocid and should be stopped at least one week prior to surgery.

Complications specifically related to your knee reconstruction surgery.

- Postoperative bleeding & marrow exuding from the bony tunnel may track down the shin causing red inflamed painful areas. When standing up the blood rushes to the inflamed area causing throbbing. This should ease with elevation and ice packs. This is a normal postoperative reaction and only delays short term recovery.
- Due to the skin incision you may notice a numb patch on the outer aspect of your leg past the skin incision. The numb patch tends to shrink with time and does not affect the result of the reconstructed ligament.
- Your hamstring musculature will recover quickly and tendon regrowth may be felt at 14 days following surgery. However, scar tissue forms around the reformed tendons. This may tear and is felt as a pop or tear behind the knee on the inner side. This will usually set your rehab back a few days only and usually occurs before 6 weeks.
- Graft failure due to poorly understood biologic reasons occurs in < 1% of grafts.
- Surgery is carried out under strict germ free conditions in an operating theatre. Antibiotics are administered intravenously at the time of your surgery. Despite these measures, following ACL surgery there is a < 1 in 400 chance of developing an infection within the joint.

As with all operations if at any stage anything seems amiss it is better to call for advice rather than wait and worry. A fever, or redness or swelling around the line of the wound, an unexplained increase in pain should all be brought to the attention of the surgeon. You can contact Dr Pinczewski by telephoning his personal assistant during business hours or the Mater Hospital after hours.

For any questions please do not hesitate in contacting our staff at NSOSMC on (02) 9437 5999
For after hour assistance contact Mater Hospital (02) 9900 7300

Further information is available on our website www.leopinzewski.com.au

Associate Professor Leo Pinczewski, AM, MBBS FRACS
Orthopaedic Surgeon. NSOSMC
P: (02) 9437 5999 www.leopinzewski.com.au e:admin@leopinczewski.com.au