PCL Injury and Reconstruction

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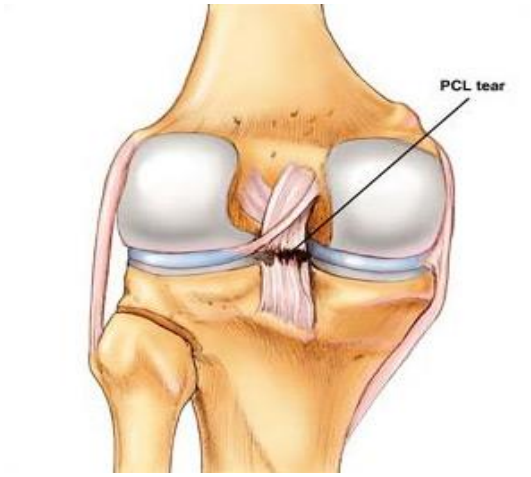
BACK OF KNEE



The posterior cruciate ligament (PCL) is one of the less commonly injured ligaments of the knee. The healthy PCL is one of several ligaments in the knee that joins the upper and lower legs together. The function of the PCL is to provide stability to the knee during rapid acceleration and deceleration activities. It also provides stability when the knee is bent at 90°. The implications of a PCL deficient knee vary from patient to patient. Most individuals are able to function normally with the assistance of physiotherapy following an isolated PCL injury. However in some instances, particularly when a very active lifestyle is desired, PCL rupture may result in a sensation that the knee "just doesn't feel right" with certain activities.

The symptoms following a tear of the PCL are not the same in each person. Some people have more problems than others. At the time of injury you may have noticed marked pain at the back of the knee. This often settles quickly and without much swelling. Frequently athletes are able to continue playing. Once the acute injury settles some patients may have experience pain behind the knee cap or at the back of the knee itself. Activities such as running and going down stairs may be difficult or painful. Occasionally patients describe

THE CLASSIC HISTORY

The most common way for the PCL alone to be injured is from a direct blow to the front of the knee while the knee is bent. The classic PCL tear mechanism is a "dashboard" injury during a car accident in which a blow occurs to the front of the lower leg. This forces the lower leg backwards at the knee, rupturing the ligament. The same force can occur during a fall on the bent knee or during a football tackle. Tears of the PCL can also result from an injury that over extends or over flexes the knee. PCL injuries can also be associated with other ligamentous injuries around the knee. These are usually the result of high-energy trauma.

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. Each patient's functional requirements are different. Treatment may be without surgery (conservative treatment) or with surgery (surgical treatment). The majority of patients with an isolated PCL injury usually can function without surgery. If other structures are damaged at the time of the injury, surgical reconstruction is usually performed.

Patients with multiple ligament injuries in association with a PCL rupture are recommended surgical reconstruction. Those patients who have failed non-operative management may also be recommended to consider surgical reconstruction.

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 is required to protect the joint for normal daily living activities. Some modifications to the running style may be all that is required for successful return to sport.

Surgical Treatment: Studies have shown that surgical reconstruction is best carried out on a pain free, healthy joint with a full range of motion. Patients are referred to their physiotherapists who supervise their knee rehabilitation prior to reconstruction.

All reconstructive procedures for the PCL require a graft. Our reconstructive technique involves grafting the torn PCL with segments of your hamstring tendons or a donor graft. This technique utilises specially designed screws allowing secure immediate fixation of the tendon within the joint allowing for more rapid rehabilitation. A brace may sometimes be used in the postoperative stage. The surgery is carried out usually as a day surgery procedure. Although PCL reconstruction surgery has a good 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 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.
- Physiotherapy is commenced immediately. Your physiotherapist will supervise strengthening and walking.
- 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.

Potential 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 be ceased 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.

Potential complications specifically related to your knee reconstruction surgery.

- Postoperative bleeding and 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.
- If your own hamstring tendon is used, the 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 for 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 PCL 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, redness or swelling around the line of the wound, or an unexplained increase in pain should all be brought to the attention of the surgeon. You can contact Dr Pinczewski by telephoning his staff during business hours or the Mater Hospital after hours.

For any questions please do not hesitate to contact our staff *(02) 9437 5999*
For after hour assistance contact Mater Hospital *(02) 9900 7300*

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

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