Bare Bones

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Gold Coast Orthopaedic Specialists is committed to deliver superior quality orthopaedic services to the Gold Coast community and beyond.

A Pivotal Advance In Total Knee Replacement

Dr Angus Nicoll

Many knee replacement are based on the philosophy that the knee moves like a hinge...swinging only back and forth. But, of course, the knee does not function as simply as a door hinge, it also rotates and slides in a complex relationship.

A normal knee pivots on its inner (medial) side. When the knee bends, the outer (lateral) side rolls back, while the medial side rotates in one place. Following knee replacement patients may complain that their replaced knee does not feel normal, citing noises or a sensation of the joint slipping, especially as they descend stairs.

Medial Pivot knee implants are designed specifically to replicate normal knee motion by bending, rotating and twisting, while maintaining a high degree of stability. See figure 1 demonstrating the close matching of the medial pivot knee dynamics with that of the normal knee – more so than with other traditional designs.

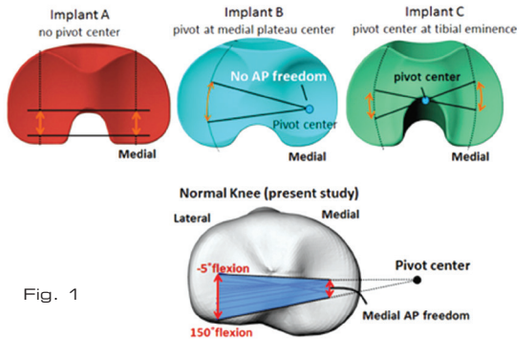


Fig. 1

Patients demand a knee that behaves and feels naturally. The medial pivot replacement incorporates asymmetrical design features to closely resemble the normal knee. Our patients are looking to return to an active lifestyle, relying on a sense of natural knee stability in work, sports and family activities. A unique "ball-in-socket" mechanism is utilized to mimic the anatomy of the normal knee and promote a more normal sense of natural stability and motion (see figure 2).

Fig. 2

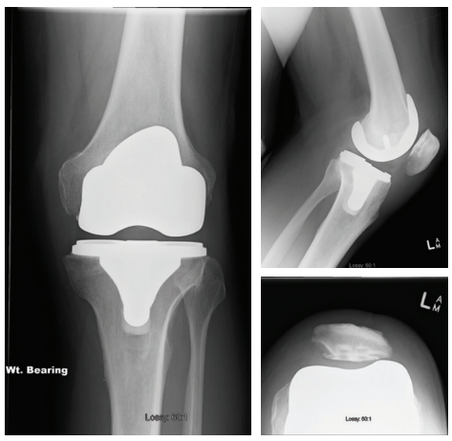
This counters the mid-flexion laxity that may trouble patients with more athletic manoeuvres and specific stresses such as negotiating stairs.

Additional design measured to maximize performance in a modern Medial Pivot Total Knee Replacement include;

- A constant radius of curvature on the femoral side to maintain contact area
- Indentation of the medial flange to ensure full extension
- Lateral flare of the trochlea groove to optimize patella tracking.
- Bone conservation avoiding a central box "cut-out" to compensate for instability.

Studies show that medial-pivot technology knee replacements are preferred over traditional designs by patients who have received bilateral replacements with one of each type.

Normal feeling and greater overall stability were the drivers for this preference and greater satisfaction.



If you would like to discuss the advantages, or any other aspect of Medial Pivot Design total Knee replacement for your patients please contact Dr Angus Nicoll 07 55973927.

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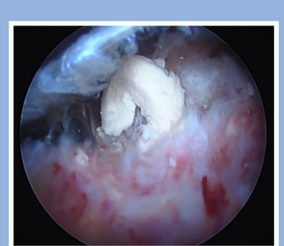

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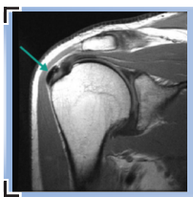

Shoulder Calcific Tendonitis

Dr David Christie

Calcific tendonitis happens when calcium deposits form in the rotator cuff. The bursal tissue and tendon around the deposit can become significantly inflamed causing severe pain and functional impairment. This condition is fairly common although the cause is unknown and not related to injury or diet. As well as the pressure caused by the calcium build up within the tendon, the deposits can reduce the subacromial space leading to tendon impingement. Calcific tendonitis most commonly affects people over 40 years of age.

There are two different types of calcific tendonitis - degenerative calcification and reactive calcification.

Degenerative Calcification

As part of the aging process, blood flow to the rotator cuff tendons decreases which can weaken the tendon. Due to the wear and tear as shoulder is used, the tendon fibres begin to fray / tear and calcium deposits form in the damaged tendons as a part of the healing process.

Reactive Calcification

Why it occurs is not clear. It does not seem to be related to degeneration, though it is more likely to cause acute shoulder pain than degenerative calcification. Reactive calcification has in three stages.

- Pre-calcific stage: – tendon changes occur in ways that allows calcium deposits to form.
- Calcific stage: – calcium crystals are deposited into the tendon and the deposits then begin to be absorbed by the body and disappear. This is usually when the acute pain will occur.
- Post-calcific stage: – the tendon heals and is emodeled with new tissue.

Clinical Presentation

While the calcium is being deposited, a person may feel only mild to moderate pain or possibly no pain at all (5%). For an unknown reason, calcific tendonitis becomes very painful when the deposits are being reabsorbed causing an extremely acute inflammatory response. The calcium irritates the bursa causing severe bursitis with severe shoulder pain radiating down the arm and subacromial impingement upon limb abduction. The severe pain and stiffness of calcific tendonitis can cause loss of shoulder motion and severe nocturnal symptoms interrupting sleep.

Radiological Investigations

An x-ray series (AP and internal / external rotation views) will usually confirm the presence and location of calcium deposits within the Rotator cuff tendons. In chronic calcific tendinopathy, calcium appears a well-defined white mass. In acute tendinopathy, the resorbed calcium often appears ill-defined and fuzzy. Several x-rays may be required over time to view the calcium changes and determining whether surgical treatment is required.

Treatment Options

- Anti-inflammatory Medication – reduces tendon swelling or inflammation to ease pain.
- Cortisone Injections – is a powerful therapy and can be very effective at easing inflammation. The effects are temporary, but can provide relief for several months.
- Needle lavage – During the time when the calcium deposits are being reabsorbed, the pain can be quite significant. Radiologist perform ultrasound scan to remove the calcium by inserting a large needle and rinsing the area with sterile saline solution. This procedure can loosen and break down the calcium particles which can then be aspirated. Even if the calcium cannot be removed, the lavage may reduce the pressure in the tendon, which can lessen the pain.
- Physiotherapy – will also focus on reducing the pain and inflammation, which may include the use of ice or heat. The use of multiple ultrasound treatments to reduce the size of the calcium deposit can be beneficial and may offer better arm function. Strengthening the rotator cuff muscles can actually decrease the pressure on the calcium deposits in the tendon.
- Shock Wave Therapy – generate wave pulses directed to break up the tendon calcium deposits so they may be more easily absorbed by the body. This treatment may also reduce the pain and size of the deposits.

When is surgery indicated?

Chronic calcific tendinopathy – after three months of failed non-operative treatment causing the loss of shoulder movement and severe pain continue to cause significant functional impairment to perform daily activities is the principle indication for surgery

Acute calcific tendinopathy – occasionally require surgery if corticosteroid injection failed to relieve the severe acute pain causing loss of function.

An arthroscopic subacromial decompression and the calcium is removed from the cuff tendon. Care is taken to ensure the calcium has been completely removed by performing an x-ray at the end of the procedure. In occasional circumstances, open surgery may be necessary if the calcium deposit is very large (>2cm diameter).