

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

## GET YOUR BEARINGS ON HIP REPLACEMENT Dr Angus Nicoll

In the hip replacement procedure, the acetabular cup, usually comprising a metal shell, replaces the acetabulum or socket. The metal stem is inserted into the cavity of the proximal femur. The "bearing surface" comprises the femoral head (ball) and the liner that inserts into the metal shell – together they allow the hip joint to rotate.

One important decision is which bearing surface will be used. The three commonly used bearing materials are polyethylene (plastic), metal, or ceramic. Each of the materials has distinct advantages and disadvantages.

### Metal Head and Plastic Liner

This was the original combination in the development of successful total hip replacement. This bearing has a long, successful clinical history.

The plastic may wear down over time which can lead to inflammation, bone loss, and a revision procedure. However, durability has proved adequate for older patients.

A chemical manufacturing process which increases the cross links between the plastic molecules holds promise for reducing the rate of wear in hip replacements with this bearing.

In "hard" bearing there is a small incidence of squeaking of the hip joint during the running in phase – this does not occur with a plastic liner.

### Metal Head and Metal Liner

Strength of material allows for the largest of the bearing surfaces which theoretically allows the greatest range of motion and lowest possibility of dislocation.

There is a small incidence of a biological reaction to the metal which is incompletely understood – it may be a delayed type hypersensitivity reaction to the particles of worn metal. The particles are

very low in concentration but in some cases may be immunogenic.

### Ceramic Head and Ceramic Liner

Wear rates are the lowest of any bearing surface. The larger bearing surface increases stability. Surgical technique can be more demanding as with poor orientation of the components there is a slight risk of fracture. This is extremely rare in Australia occurring less than 1 in 10000 cases. Complete biocompatibility is expected.

### In My Practice

The most commonly used bearing surface is a ceramic head and liner. It provides an ideal combination of exceptional clinical performance, stability (such that dislocation is very rare), extremely low wear rates and complete biocompatibility.

In hip resurfacing – where the head of the femur is resurfaced with metal lining (rather than resected and removed) – a metal on metal articulation is mandatory due to the enormous stress absorbed by the thin resurfacing bearing.

Please do not hesitate to contact me at any time to discuss your patients' hip problems.



Dr Angus Nicoll  
(07) 5597 3927  
Hip & Knee Surgery



Dr David Christie  
(07) 5597 3127  
Knee & Shoulder Surgery

Suite 6, Ground Floor  
14 Carrara Street  
Benowa QLD 4217

f: (07) 5597 5019

e: gcos@ozdoc.com.au

www.gcos.biz

Our business hours are  
Monday - Thursday 9 - 5  
Friday 9 - 4

## ACUTE KNEE INJURY SERVICE

Treating your patients within 2 working days for:

- Acute sporting / recreational knee injuries
- Your patient will be assessed and treated by our specialist Orthopaedic Surgeons
- For urgent management, MRI scans are available within two working days by special arrangement

Bare Bones  
 Autumn Edition  
 2010  
 Volume 6

Suite 6, Ground Floor  
 14 Carrara Street  
 Benowa QLD 4217

f: (07) 5597 5019

e: gcos@ozdoc.com.au

www.gcos.biz

For booking  
 please contact:

Dr David Christie  
 (07) 5597 3127

Dr Angus Nicoll  
 (07) 5597 3927

Our business hours are  
 Monday - Thursday 9 - 5  
 Friday 9 - 4



PAST AND  
 PRESENT  
 NEWSLETTERS

AVAILABLE ON  
 OUR WEBSITE

www.gcos.biz

## Patellar Instability - Management of Acute and Recurrent Dislocations

Dr David Christie

Although medial, superior and intra-articular dislocations have been described, most patellar dislocations are laterally directed. Two mechanisms of acute lateral patellar dislocation have been described: an indirect injury and a direct blow to the medial patella. The indirect mechanism is more common and involves the combination of a strong Quadriceps contraction, flexed (60-70°) and valgus knee position, and an internally rotated femur on an externally rotated tibia.

The patella may spontaneously reduce or the patient may require a closed reduction by extending the knee while a gentle medial force is applied to the patella. Osteochondral fractures of the lateral femoral condyle or the medial patellar facet can occur in 40-50% of dislocations thus emphasizing the importance of performing plain radiographs.

The medial patellofemoral ligament (MPFL) is the major medial soft tissue stabilizer acting as a static checkrein to resist lateral patellar translation while the Quadriceps functions as a dynamic stabilizer of the patella. The MPFL is located superficial to the joint capsule and deep to the vastus medialis muscle. It extends from the medial femoral epicondyle to the superomedial patellar margin. The MPFL provides 53% of the total restraining force on the patella. Tenderness over the medial femoral epicondyle (Bassett's sign) may represent an injury to the MPFL in acute or recurrent patellar dislocations.

MRI scans are able to visualize the essential tear of the MPFL off the femoral insertion. Avulsion from the patellar margin is less common and usually over interpreted on MR imaging of patients with an associated osteochondral lesion involving the medial patellar facet. Bone bruising is commonly seen in the anterior superior lateral femoral condyle (87%) and in the medial patella (30%).

There is currently a debate in the orthopaedic literature regarding non-operative versus operative treatment of acute patellar dislocations. Patellofemoral instability symptoms may be reduced in many patients with a patellar cut-out brace or patellar taping. These measures should be considered as adjuvants to Quadriceps strengthening which is the mainstay of patellofemoral rehabilitation.

Non-operative therapy should include early reduction of inflammation and swelling. This can be accompanied by joint aspiration to

reduce the haemarthrosis and immobilization close to full extension with a lateral patellar pad to reapproximate the torn medial soft tissue structures (MPFL). After a short period of immobilization (10-12 days), protected range of motion exercises in a patellar stabilising brace is emphasized. This is followed by Quadriceps strengthening exercises, specifically the Vastus Medialis Obliquus, and hydrotherapy. The last phase of rehabilitation involves enhancing patient's proprioceptive feedback as well as developing sport specific skills. Recurrent dislocation ranges from 20-44% in patients treated non-operatively after the initial dislocation episode.

Advances in the understanding of the pathoanatomy of acute patellar dislocation combined with the high incidence of recurrent instability have led to a renewed interest in acute surgical repair. Candidates for a MPFL surgical repair include the young athletic patient who sustained an indirect mechanism of dislocation. MPFL avulsions from the femur maybe repaired directly onto the bone with suture anchors. Results of surgical repair include less than 10% redislocation rates. Therefore the incidence of instability is markedly reduced with operative repair. If patients continue to experience pain and swelling, these persistent symptoms are due to articular cartilage damage from the original injury.

Surgery is accepted as the treatment of choice for recurrent patellar instability. Arthroscopy combined with a repair of the essential medial restraint (MPFL) may provide the best functional outcome.

