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## **Hip Arthroscopy**

Hip arthroscopy, a new and exciting operative technique performed in a small number of specialist orthopaedic units worldwide, is now available at the Orthopaedic and Sports Surgery Centre, in the Whitfield Clinic. Many open traditional surgical procedures, in and around the hip joint, can now be performed endoscopically. This major advance means many patients who previously required hospital admission and longer recovery can have their surgery performed mainly as a daycase with rapid return to activity and sport, while minimising the risks from surgery.

### ***Indications and symptoms:***

The majority of patients who may benefit from arthroscopic surgery to the hip are active and have no evidence of severe osteoarthritis. The two areas, for which hip arthroscopy has proven most beneficial, are *Femoral Acetabular Impingement* (FAI) and pathology of the acetabular labrum.

#### **The Acetabular Labrum:**

This fibrocartilage structure is attached to the rim of the acetabulum and acts as a seal around the hip joint, helping with maintaining stability and lubrication of the hip. It can be torn acutely following injury, can undergo age related degenerative change or can be detached and torn as a result of Femoral Acetabular Impingement. The loss of the integrity of the labrum is thought to represent the first major step towards developing osteoarthritis.

#### **Femoral Acetabular Impingement (FAI):**

Many patients participate in regular sports and may have sustained an acute injury to the hip resulting in a labral tear or detachment; others may have more progressive symptoms of groin or thigh pain initially on exercise but later with walking, prolonged sitting and eventually waking from sleep at night. These patients most commonly have a condition known as Femoro-Acetabular Impingement (FAI); often there is a predisposition to developing FAI due to variations in the shape of the femoral head and acetabulum. On clinical examination these patients have decreased internal rotation, adduction and flexion of the hip, often limited due to discomfort (Impingement sign). Excessive rubbing of the anterolateral femoral neck under the acetabular rim in flexion leads to bony remodelling and loss of head sphericity which in turn increases the impingement; a bony prominence

begins to form anterolaterally known as a CAM lesion which causes tearing and detachment of the labrum (the seal of the hip). The CAM lesion increases the abutment against the acetabular rim resulting in rim osteophyte formation which causes a 'pincer' lesion to form, again exacerbating the impingement and resulting damage to the labrum and chondral surface; with the loss of the articular surface integrity, paralabral cyst formation occurs and early osteoarthritic changes develop.

There are a wide range of conditions in addition to labral tears and FAI which may benefit from arthroscopic hip surgery and include:

- Labral detachment (reattachment)
- Chondral flap/defect (microfracture/drilling/ hemi-resurfacing)
- Ligamentum Teres disruption (shrinkage/reconstruction)
- Early osteoarthritis (debridement and lavage)
- Capsular detachment/laxity (reattachment/capsular plication)
- Psoas tendonopathy (decompression/release)
- Loose bodies (removal)
- Post THR/Resurfacing (diagnostic- loosening/sepsis)
- Sepsis (washout)
- Unexplained hip pain (diagnostic arthroscopy)

### ***Surgical Technique:***

Two standard stab incisions are routinely used: anterior and anterolateral to the hip joint. The hip is distracted using a table distraction device to create operating space and portals are developed, under image intensifier guidance, into the joint space through which a telescope and operating instruments are passed. Good visualisation of the entire hip joint is possible using both a 30 and 70 degree telescope.

*Anaesthetic and set up time:* 15 mins

*Portal placement/examination of Central Compartment:* 10 mins

The acetabular labrum is initially viewed for tearing or detachment, often a common cause of groin pain. If an isolated, simple tear or detachment is found, then debridement or repair is undertaken; more commonly, however, labral pathology is associated with a pincer deformity of the acetabular rim; the labrum is formally taken down, the pincer lesion resected using a mechanical burr and the labrum is debrided or reconstructed. The chondral surface of the femoral head and acetabulum is then examined for defects, injury or wear for which excision and microfracture may be required; the integrity of the ligamentum teres is then assessed and if thickened/stretched may require RF shrinkage, if torn may need reconstructed.

*Labral debridement:* 05 - 10mins

*Labral repair:* 15 – 20mins

*Pincer recession:* 15 – 20 mins

*Chondral debridement/microfracture:* 05 – 10mins

*Ligamentum Teres shrinkage/reconstruction:* 05 – 40mins

This concludes the hip arthroscopy (central compartment).

Traction is released and portals are moved into the peripheral compartment anterior to the femoral neck to examine this region for CAM osteophyte observed in 'Femoral Acetabular Impingement' which is removed using a mechanical burr (femoral osteoplasty). The psoas tendon is also examined and decompressed/released if required. Redundant or detached capsule is treated with RF shrinkage or plication.

<i>Femoral Osteoplasty (excision of osteophyte femoral neck):</i>	<i>10 – 15mins</i>
<i>Psoas release/decompression:</i>	<i>05 – 10mins</i>
<i>Capsular plication/shrinkage:</i>	<i>10 – 15mins</i>

The portals are removed, incision sites sutured and dressed.

Patients are discharged the same day or may require an overnight stay (depending on the extent of the surgery), two stitches need removed at day 10; at this stage the rehabilitation program, based largely in the swimming pool, begins.

### ***Postoperative Care:***

All patients require a full and active physiotherapy review (initially once per week, then according to patient need and type of surgery); physiotherapy would usually remain involved for the first three months following surgery. Clinical (consultant) review takes place at 8 weeks and 6 months post operatively and at 1 year.

### ***Clinical Outcome:***

All patients have pre and post operative functional assessments and pain scores assessed so accurate clinical outcome can be established. It is expected that approximately 75% of patients undergoing hip arthroscopy for labral pathology as a result of FAI will significantly improve and will return to competitive sport at approximately twelve weeks post operation. There is increasing evidence that performing femoral osteoplasty will slow down the development of osteoarthritis often associated with FAI; this may lead to a decrease in younger patients requiring hip replacement or resurfacing and this may indirectly delay or reduce hip arthroplasty revision rate; this would be one of the most important 'prevention' procedures in orthopaedics. 20% of patients will have moderate or short term benefit and 5% may have an associated but often minor complication.

### ***Complications:***

Complications following hip arthroscopy are uncommon and generally temporary; they can be procedure specific such as numbness (groin, foot and ankle), nerve damage, bleeding, wound infection, instrument breakage (requiring open surgery to remove), scuffing of articular cartilage; or can be general such as deep venous thrombosis or pulmonary embolism.

In total, a hip arthroscopy will usually take a minimum of 1 hour; additional time may be required for more complex procedures performed in either compartment; total operative time rarely exceeds two hours. In general this is a very safe procedure with good levels of patient satisfaction.