Painful hip arthroplasty: definition

- The "hip region" constitutes the groin, buttock, upper lateral thigh, greater trochanteric area, and the iliac crest.
- Possible causes of hip pain after THA
  - The presence or absence of radiographic signs

The presence or absence of radiographic signs

**Positive X-rays:**
1. Aseptic loosening
2. Septic loosening
3. Osteolysis
4. Micromotion
5. Stress shielding and tip of stem effects

**Negative X-rays:**
1. Reactive synovitis
2. Aseptic lymphocytic vasculitic associated lesion (ALVAL)
3. Prosthesis impingement
4. Iliopsoas tendinitis
5. Abductor muscle damage
6. Trochanteric bursitis
7. Lumbar spine disease
8. Nerve injuries
9. Hernia femoral, inguinal, obturator
10. Referred pain

Mindset of an Arthroplasty Surgeon

1. Infected
2. Unstable
3. Leg Length
4. Mal Position

Just revise it!!

Workup for Painful THR

Hip Arthroscopy ??
Early reports of Hip Arthroscopy for Painful Total Hips: 1979

Entrapped Foreign Body Within the Acetabular Cup in Total Hip Replacement

FREDDY KEILME, D. ,* ECKHARDT, SAUER, D.,** AND RUSSELL W. WARREN, D., F.A.C.S.*

Indications Arthroscopy THR?

- Acute Sepsis
- Loose cement
- Loose wires
- Loose screws
- Assess for loosening
- Iliopsoas Pain
- Repair Gluteus Muscles
- Removal Heterotopic bone
- Synovectomy for Metalosis

Early Publication on Hip Arthroscopy

Early Case Studies

Acute Pyarthrosis Total Hip

- Successfully treated four patients with late hematogenous infections of their total hips arthroscopically.
- No recurrence has been noted, with the longest follow-up being 20 years, when one patient died from natural causes at the age of 93 years.
- Pyarthrosis caused by Staphylococcus aureus in a total hip from a hand infection that occurred 1 year and 9 months after index replacement. Note the exudate between the metal head and acetabulum (arrow). B, Infected total hip. Note the exudate and synovitis (arrow). C, Insertion of drainage tube over slotted cannula (arrow).

Painful Total Hips from Iliopsoas Impingement

Arthroscopic Treatment for Painful Total Hips
The Role of Arthroscopy in Evaluation of Painful Hip Arthroplasty

Joseph C. McCarthy MD, Stefan R. Jibodh MD, Jo-Ann Lee NP


1. Treated for entrapped debris post dislocation
2. Remove migrated hardware using arthroscopic techniques
3. Identified previously unrecognized component related problems in two patients (metal corrosion in one patient and acetabular loosening in another)

Removal of loose screw

- 68 year old woman
- 9 year follow up revision
- Porous ingrowth acetabular component with good ingrowth
- Progressive loosening of one of the peripheral screws within the joint at the posterior margin.

Remove a broken wire

- A 67 year-old woman
- 3 years post revision
- Migration of a trochanteric wire fragment adjacent to the articulation

Fluoroscopic image shows a migrated trochanteric wire noted 3 years after revision left hip arthroplasty. An intraoperative photograph shows the same hip during arthroscopic wire removal.

Metal corrosion

Case 6. corrosion at the femoral head-neck junction with diffuse metal synovitis

Soft tissue

Case 15. Impinging soft tissue is visible during arthroscopic debridement
Painful clicking loose cable THR

Indications for performing surgical hip arthroscopy

TABLE 8-1. Indications for performing surgical hip arthroscopy.

<table>
<thead>
<tr>
<th>Definitive indications</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Undiagnosed hip pain-evaluation</td>
</tr>
<tr>
<td>2. Pyarthrosis-drainage and tube placement</td>
</tr>
<tr>
<td>3. Pigmented villonodular synovial cysts</td>
</tr>
<tr>
<td>4. Foreign bodies removal</td>
</tr>
<tr>
<td>5. Loose bodies removal</td>
</tr>
<tr>
<td>6. Loose cement body in total hip replacements removal</td>
</tr>
<tr>
<td>7. Flexion, abduction, and rotation contractures with limited range of motion</td>
</tr>
<tr>
<td>8. Chondrolysis-debridement</td>
</tr>
<tr>
<td>9. Chondral defects</td>
</tr>
<tr>
<td>10. Osteoarthritis-debridement, chondroplasty</td>
</tr>
<tr>
<td>11. Labral tears-excision</td>
</tr>
<tr>
<td>12. Trochanteric bursitis-bursectomy</td>
</tr>
</tbody>
</table>

CHAPTER 23 – Arthroscopy for Symptomatic Hip Arthroplasty

The sole indication for this procedure is a patient with a painful hip resurfacing in the presence of normal or indeterminate investigations.

BHR Resurfacing

Backside cup very abrasive

Insertion of the acetabular component

Hip Arthroscopy of Painful Resurfacing Total Hips

Results Arthroscopy Resurfacing with Pain

<table>
<thead>
<tr>
<th>Patient No.</th>
<th>Age</th>
<th>Sex</th>
<th>Type of Implant</th>
<th>Time Since Implantation</th>
<th>Arthroscopic Diagnosis</th>
<th>Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>55</td>
<td>F</td>
<td>Cormet</td>
<td>24 months</td>
<td>Bony FAI</td>
<td>Synovectomy and excision of the impingement lesion</td>
</tr>
<tr>
<td>2</td>
<td>57</td>
<td>F</td>
<td>Cormet</td>
<td>36 months</td>
<td>Loosening of the acetabular component</td>
<td>Assessment and biopsy</td>
</tr>
<tr>
<td>3</td>
<td>64</td>
<td>M</td>
<td>Cormet</td>
<td>36 months</td>
<td>Normal</td>
<td>Assessment and aspiration</td>
</tr>
<tr>
<td>4</td>
<td>43</td>
<td>F</td>
<td>Birmingham</td>
<td>24 months</td>
<td>ALVAL</td>
<td>Assessment, synovectomy, and biopsy</td>
</tr>
<tr>
<td>5</td>
<td>63</td>
<td>M</td>
<td>Cormet</td>
<td>24 months</td>
<td>Fibrous adhesions</td>
<td>Synovectomy and capsular release</td>
</tr>
<tr>
<td>6</td>
<td>55</td>
<td>F</td>
<td>Cormet</td>
<td>12 months</td>
<td>Bony FAI with psoas tendonitis</td>
<td>Excision of the impingement lesion and iliopsoas tenotomy</td>
</tr>
<tr>
<td>7</td>
<td>38</td>
<td>F</td>
<td>Cormet</td>
<td>6 months</td>
<td>Psoas tendonitis</td>
<td>Iliopsoas tenotomy</td>
</tr>
<tr>
<td>8</td>
<td>70</td>
<td>F</td>
<td>Birmingham</td>
<td>12 months</td>
<td>Trochanteric bursitis</td>
<td>Excision of the trochanteric bursa</td>
</tr>
<tr>
<td>9</td>
<td>53</td>
<td>F</td>
<td>Cormet</td>
<td>12 months</td>
<td>Psoas tendonitis</td>
<td>Synovectomy and iliopsoas tenotomy</td>
</tr>
<tr>
<td>10</td>
<td>44</td>
<td>M</td>
<td>Birmingham</td>
<td>40 months</td>
<td>Soft-tissue impingement with psoas tendonitis</td>
<td>Excision of the impingement lesion and iliopsoas tenotomy</td>
</tr>
<tr>
<td>11</td>
<td>65</td>
<td>M</td>
<td>Birmingham</td>
<td>48 months</td>
<td>Bony FAI with psoas tendonitis</td>
<td>Excision of the impingement lesion and iliopsoas tenotomy</td>
</tr>
<tr>
<td>12</td>
<td>38</td>
<td>F</td>
<td>Birmingham</td>
<td>26 months</td>
<td>Loose cement particles with synovitis</td>
<td>Removal of loose cement and synovectomy</td>
</tr>
</tbody>
</table>
Iliopsoas Cyst Causing Persistent Pain After Total Hip Arthroplasty
by Markus Wuenschel, MD; Beate Kunze, MD

Cup Position

Psoas cyst

Imaging Painful Iliopsoas THR

Prospective Randomized Study of 2 Different Techniques for Endoscopic Iliopsoas Tendon Release in the Treatment of Internal Snapping Hip Syndrome
Victor M. Ilizaliturri, Jr., et al.

1. Prospective Randomized Study
2. Level 1 evidence
3. NO difference in outcome if release intra-capsular or at the lesser trochanter

Iliopsoas Impingement on THR

Iliopsoas Release THR

Arthroscopic Treatment for Painful Total Hips
Case Report
Arthroscopic Treatment of Unstable Total Hip Replacement
Sampson, Conner, K., M.D., Ph. D., Iñaki, Aguinaga, M.D., Irene Corcuera, M.D., and Jaime Usabiaga, M.D., Ph. D.

2 cases of arthroscopically assisted capsular tightening in unstable total hip replacements. Both cases had significant capsular laxity. Case 1 had impingement of the lower part of the acetabulum with the lesser trochanter that caused hip dislocations.

Case 1 uses a Mitch resurfacing implant. The right hip is visualized through the anterolateral portal, with instrument access through a posterolateral approach. (A) Radiograph showing subluxation. (B) Large lateral and posterior capsular recess. For our method of looping, we used a knotless suture passer through a posterolateral approach. The prosthesis is indicated by an asterisk. (C) End result.

Case 2 uses a Poro-Palcar prosthesis. The right hip is visualized through the anterolateral portal, with instrument access through an anterolateral approach. (A) Radiograph showing last episode of dislocation. (B) Intraoperative subluxation. (C) "Impingement" between lesser trochanter and lower edge of acetabulum (black asterisk). (D) Capsular folding before knotting. The prosthesis is indicated by a white asterisk.

Indications MRI of THR
- Painful THR suspect soft tissue
- Painful Iliopsoas
- Painful Peritrochanteric region
- Pain in Subgluteal region
Correlation between inclination of the acetabular component and metal ion levels in metal-on-metal hip resurfacing replacement R. De Haan et al.

University Hospital Brussels, Laarbeeklaan 101, 1090 Brussels, Belgium.

Abstract

We examined the relationships between the serum levels of chromium and cobalt ions and the inclination angle of the acetabular component in 214 patients with metal-on-metal resurfacing hip replacements. Each patient had a single resurfacing component with no other metal implants. All serum measurements were performed at a minimum of one year after operation. The inclination of the acetabular component was considered to be steep if the abduction angle was greater than 55°.

There were significantly higher levels of metal ions in patients with steeply-inclined components (p = 0.002 for chromium, p = 0.003 for cobalt), but no correlation was found between the level of activity and the concentration of metal ions. A highly significant (p < 0.001) correlation with the arc of coverage was found. Arcs of coverage less than 10 mm were correlated with a greater risk of high concentrations of serum metal ions. The arc of coverage was also related to the design of the component and size as well as to the abduction angle. Components with steep inclination and small arc of coverage were more associated with high serum levels of metal ions. Components with steep inclination and large arc of coverage were associated with lower serum levels of metal ions. This is probably due to a greater risk of edge-loading.

Partial Tear Gluteus Medius

The Problem is Metal Artifact and distortion from the Blooming Effect

Expose and remove Trochanteric Bursa

Bursctomy

Abrate Footprint Lateral Facet

Arthroscopic Repair Gluteus Medius Tear THR

MRI of Total Hip Replacements
Re-attach free edge GM
Large Anchor Placed
Horizontal Mattress sutures for 1st Row

2nd Row Repaired
Internal Rotation View
External Rotation View

Metal on Metal THR Complications
Mass effect adjacent to acetabular component

Pseudo-tumors

Sciatic neuropraxia MoM THR

ASR Debris from Metal Wear

Mark H. Aehl, M.D.
Arthroscopic Treatment for Painful Total Hips

Conversion ASR MoM to CoP

Painful iliopsoas after revision - Psoas release and synovectomy for metalosis

The Incidence of Heterotopic Ossification in Hip Arthroscopy

H.O. (Heterotopic Ossification)
Excision of Heterotopic Bone

50 Y.O. Male ex-Firefighter 4 yrs. post op with painful left hip and severe limited ROM

Expose through partial capsulectomy and excision of H.O.

The conflict is between the massive CAM bump and the excessive rim of the acetabulum (Pincer) caused by Heterotopic Ossification
Left Hip Excision Heterotopic Bone
Acetabuloplasty and Femoroplasty

Post-Op Fluoro

Post Operative Excision
Heterotopic Bone after BHR

Painful THR may be more subtle than:

<table>
<thead>
<tr>
<th>Etiology</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Infection</td>
<td>1. Revision</td>
</tr>
<tr>
<td>2. Instability</td>
<td>2. Revision</td>
</tr>
<tr>
<td>3. Leg Length ≠</td>
<td>3. Revision</td>
</tr>
<tr>
<td>4. Mal Position</td>
<td>4. Revision</td>
</tr>
</tbody>
</table>

Conclusion
Arthroscopy for Painful THR

Is useful in treating painful Total Hips and resurfacing:
1. Acute Sepsis
2. Loose cement
3. Loose wires
4. Loose screws
5. Assess for loosening
6. Iliopsoas Pain
7. Tears Gluteus Muscles
8. Instability??
9. Synovectomy of Metalosis
10. Removal Heterotopic bone
11. Femoroacetabular Impingement in THR

THANK YOU