failed Hip Arthroscopy

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Conflict of Interest Statement

• Speaker/Educational course honorarium
  – Stryker
  – JRI Orthopaedics
  – Smith & Nephew

Failed Hip Arthroscopy

• Consider:
  – Diagnosis
  – Pre-operative imaging
  – Findings at the time of original surgery
  – Response to injections
  – New imaging

Diagnosis

• History consistent with FAI
• Symptoms consistent with pain coming from the hip
  – Response to pre-op injections
• Pre-op imaging
  – X-rays, MRI, CT
• Working diagnosis
  – Cam, Pincer, Mixed
  – Assessment of Dysplasia, Acetabular/Femoral version abnormalities

Operative findings

• Was the intra-articular injury pattern consistent with the diagnosis?

FAI

Hip morphology influences the pattern of damage to the acetabular cartilage

Operative findings

- Was the intra-articular injury pattern consistent with the diagnosis?
- Extent and nature of the labral and articular cartilage lesions

UCLH system for describing chondral lesions in FAI


UCLH Grading System

- Zones 1-6

UCLH Grading System

- Grade 0
  - Normal articular cartilage
- Grade 1
  - Wave sign/softening
- Grade 2
  - Cleavage tear
- Grade 3
  - Delamination
- Grade 4
  - Exposed bone

- A < 1/3 distance from acetabular rim to cotyloid fossa
- B 1/3 to 2/3 distance from acetabular rim to cotyloid fossa
- C > 2/3 distance from acetabular rim to cotyloid fossa

Operative findings

- Was the intra-articular injury pattern consistent with the diagnosis?
- Extent and nature of the labral and articular cartilage lesions
- Surgical plan/procedure
  - What was carried out?
  - Was the surgical plan achieved?

Patient review

- Time since Hip Arthroscopy
  - When has surgery failed?
- Location of pain
  - Is it the hip?
  - Selective injections
- Physical signs
  - Generally irritable
  - Pain on impingement
  - Stiffness
  - Rotational profile
  - Hypermobility
X-ray

- Evidence of cam
- Retroversion
- Overcoverage
  - Global or focal
- Undercoverage
  - Dysplasia
- Degenerative change

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Importance of joint space width

  - 86% of patients with 2mm or less joint space converted to THR
  - 16% of patients with >2mm converted to THR
  - Mean survival time with decreased joint space 40 months compared to 88 months with preserved joint space

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Factors Associated With the Failure of Surgical Treatment for Femoroacetabular Impingement: Review of the Literature

- Preoperative cartilage damage or osteoarthritis with lack of improvement in pain or function.
- Greater age at the index operation.
- Worse preoperative modified Harris Hip Score
- Longer duration of symptoms preoperatively (>1.5 years)

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MRI

- Do you need an MRI?
  - Helpful in post surgical cases
  - MR arthrography (or 3T) with radial sequence images
  - Standard imaging not appropriate for assessment of FAI
  - Good to rule out other pathology if diagnosis in doubt

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MRI

- Synovitis/Effusion
- AVN
- Chondral changes
  - ? Significance compared with X-ray
- Labral abnormalities
  - Difficult to interpret post surgery
  - Anchors may interfere
- Capsule changes
- Adhesions
CT

- Allows better appreciation of location of cam
- Accurate assessment of joint space width
- Alpha angles measured
- Acetabular version
- Femoral version
- 3-D reconstructions essential

Causes of failed hip arthroscopy

- Residual FAI
- Underlying acetabular dysplasia
- Osteoarthritis
- Labral tears
- Post op adhesions


- Residual deformity is the most common reason for revision hip arthroscopy: a three-dimensional CT study.
- Clin Orthop Relat Res (United States), Apr 2015, 473(4) p1388-95
- Ninety percent (45 of 50) of patients undergoing revision surgery for symptomatic FAI had residual deformities


- Causes and risk factors for revision hip preservation surgery.
- The most common reason for revision was residual intra-articular femoroacetabular impingement (74.8%), followed by extra-articular impingement (9.5%).
- The majority of revision cases (78.9%) could be addressed with arthroscopic surgery, with the exception of extra-articular impingement or residual acetabular dysplasia, which necessitated open approaches


- Why do hip arthroscopy procedures fail?
- Clin Orthop Relat Res (United States), Aug 2013, 471(8) p2523-9
- Residual FAI 68%, Dysplasia 24% - Revision hip preservation
- Advanced OA - THA

Case Examples
BS 34 yrs

- c/o external rotation deformity of R leg post hip arthroscopy

- 32 yr old rugby player
- 2 previous hip scopes
- c/o persistent pain R hip/groin
• 26 yr Female
• Chronic Left hip pain
• 2 previous hip scopes
Three-dimensional CT analysis to determine acetabular retroversion and the implications for the management of femoro-acetabular impingement

This study examined the relationship between the view zone size and the true three-dimensional anatomic version of the acetabulum. We also investigated whether in true representation there is a variant femoral head-axis anatomy. Radiographs of M eyes in patients being investigated for symptoms of femoro-acetabular impingement were analyzed and the presence of acetabular signs was documented. CT scans of the same hips were obtained to confirm the anterior pelvic plane after correcting for pelvic tilt. The concordance and specificity of the true three-dimensional anatomic version was 95% and 95%, respectively, for identifying acetabular retroversion.

There was significant difference in total score between normal and retroverted discs. Anterior and posterior scores were, however, significantly different in a 95% and 95%. The study concluded that acetabular retroversion is underestimated by anterior differences but is overestimated by posterior differences.

29 M previous bilat hip scopes – recurrent pain

Persistent L hip symptoms post correction FAI
Conclusion

- Protocol for failed hip arthroscopy requires detailed review of patient, imaging, previous treatment
- Selective injections may be needed
- XR, MRI and 3-D CT usually needed
- Residual FAI, Dysplasia, OA are common causes