

# Does the Hip Capsule Remain Closed Following Hip Arthroscopy with Routine Capsular Plication for Femoroacetabular Impingement?

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# DISCLOSURES

**AEW, PL, BDK, GC, GU:** None

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# Background

There are a variety of complications that may present post hip arthroscopy including iatrogenic anterior hip instability.<sup>1</sup>

# Purpose

The goal is to examine the integrity of the hip capsule in a cohort of patients that underwent capsular closure as a routine component of primary hip arthroscopy for FAI.

# Methods

- The cohort included all patients undergoing primary hip arthroscopy for FAI with routine capsular closure between 1/1/2012 and 12/31/2015 whose postoperative MRIs were ordered within 24 months of surgery. N=39 patients (23 female and 16 male) with an average patient age of  $31.7 \pm 11.4$  years, average body mass index (BMI) was  $23.3 \pm 2.9$  kg/m<sup>2</sup>
- The MRIs were reviewed by 4 independent blinded reviewers, each hip capsule was evaluated for thickness and the absence or presence of defects

# Methods

- Operative and nonoperative sides were compared using the student t-test.
- The two-way mixed model for absolute agreement was employed in determining the Inter-observer reliability through the intra-class correlation coefficient (ICC).

# Results

- Postoperative MRIs were performed on an average of  $12.5 \pm 6.8$  months following surgery. The average preoperative alpha angle was  $62.2 \pm 10.1$  degrees, which significantly declined with femoral osteochondroplasty to  $32.2 \pm 4.3$  degrees ( $p < 0.001$ ).
- The average preoperative LCEA was  $39.7 \pm 5.9$  degrees and this also significantly declined with acetabular rim trimming to  $29 \pm 4.8$  degrees ( $p < 0.001$ ). In the 39 patients examined, there were 3 (7.5%) capsular defects, ICC 0.82.

# Results

- In the 39 patients examined, there were 3 (7.5%) capsular defects, ICC 0.82.
- The operative hip capsule was significantly thicker in the zone of capsulotomy and subsequent repair as compared to the unaffected, contralateral hip capsule ( $5.0 \pm 1.2$  mm vs.  $4.6 \pm 1.4$  mm;  $p=0.02$ ), ICC 0.83. Additionally, following capsular repair, males had significantly thicker hip capsules as compared to their female counterparts, on the operative-side ( $5.4 \pm 1.1$  mm vs.  $4.5 \pm 1.2$  mm;  $p=0.02$ ), and the nonoperative-side ( $4.8 \pm 1.6$  mm vs.  $4.1 \pm 0.9$  mm;  $p=0.08$ ).

# Conclusions

- The majority (92.5%) of the repaired hip capsules remained closed at greater than one-year follow-up.
- The hip capsule adjacent to the capsulotomy and subsequent repair is thickened compared to the same location on the contralateral hip, possibly suggesting a healing response.
- Gender correlates with capsular thickness and the propensity to develop a capsular defect while patient-related and FAI-related factors do not.

# References

1. Dierckman BD, Guanche CA. Anterior hip capsuloligamentous reconstruction for recurrent instability after hip arthroscopy. *Am J Orthop (Belle Mead NJ)*. 2014 Dec;43(12):E319-23.