

Overtightening a Periportal Capsulotomy in Borderline and Dysplastic Patients with Femoroacetabular Impingement Syndrome Results in Improved Patient Reported Outcomes: A Minimum Two-Year Follow Up

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INTRODUCTION:

Borderline and dysplastic patients have greater hip instability at baseline compared to those with normal acetabular coverage as shown on an axial traction exam. While capsular repair has been shown to restore resistance to axial traction, it is unknown if the capsule can be tightened beyond native levels in patients who may have lax hip joints. The purpose was to determine if tightening the capsule in borderline and dysplastic patients results in improved outcomes.

METHODS:

Patients with borderline or overt hip dysplasia defined as a lateral center edge angle ≤ 25 degrees between 2021 and 2023 who underwent a primary hip arthroscopy with an axial traction exam at the time of surgery were included. Axial traction exam involved determining the change in fluoroscopic joint space that occurred between 0 and 100 pounds of force (lbf) at 3 capsular states: (1) native (prior to instrumentation or venting), (2) after the capsulotomy had been made (open), and (3) after the capsule had been fully closed. All patients underwent a periportal capsulotomy with closure of both portals using figure-of-eight sutures. Patients were contacted at a minimum of 2 years postoperative to collect patient reported outcomes. Comparisons were made via paired t-tests.

RESULTS:

Forty-two patients were included (80% collection rate): 34 were female (81%), mean age was 34.4 ± 12.5 years, mean LCEA was 22.8 ± 3.3 degrees, and mean alpha angle on frog leg lateral was 58.8 ± 6.3 degrees. Mean distraction distance of the native state was 9.8 ± 1.7 mm, 10.5 ± 2.08 mm ($p=0.005$) after the capsulotomy, and then 6.8 ± 2.2 mm ($p<0.001$) after both portals were repaired. A mean increase in resistance to traction of 35% compared to the open state and 20% compared to the native state was observed. Two patients required revisions (4.8%) and mean improvement in SANE scores was 28.9 ± 23.4 ($p<0.001$) and 13.1 ± 9.5 in PROMIS-PF scores ($p<0.001$).

DISCUSSION AND CONCLUSION:

A complete periportal capsulotomy closure with overtightening results in greater stability of the hip compared to the native capsule state on an intra-operative axial traction exam and corresponds with significant improvements in patient reported outcomes in borderline and dysplastic patients undergoing treatment for FAIS.