

Excellent Clinical Outcomes and Continuance of Sports after Hip Arthroscopic Labral Repair in Young Competitive Athletes at Minimum 8.5-Year Follow Up

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INTRODUCTION:

Femoroacetabular impingement (FAI) is a common cause of hip pain in young athletes. FAI is a disorder of the hip joint due to morphological abnormalities in the femoral head (cam type), acetabulum (pincer type), or both. The abnormal contact of the acetabular labrum with cam and/or pincer lesions can lead to labral tears, chondrolabral delamination, and pain. The abnormal contact can then further progress to early osteoarthritis and subsequent joint replacement. Modern hip arthroscopy has demonstrated safety and efficacy at treating these lesions and has been rapidly increasing in use in the United States and globally. Clinical outcomes, particularly rate of return to sports (RTS), are important measures for young athletes undergoing hip arthroscopy for hip pain. However, to date, there is a paucity of published long-term subjective as well as sports-specific outcomes and continuation rates for these patients. Therefore, the purpose of this study was to 1) evaluate long-term patient-reported outcomes and achievement rates of patient acceptable symptomatic state (PASS) in young athletes undergoing hip arthroscopy, and 2) report long-term sports continuance and reoperation.

METHODS: Inclusion criteria consisted of age <24 years at surgery, femoroacetabular impingement undergoing primary hip arthroscopy with labral repair, and participation in sport with intent to return to sport after surgery. Modified Harris Hip Scores (mHHS), Hip Outcome Score (HOS), HOS activities of daily living (HOS-ADL), and HOS sport (HOS-Sport) were collected preoperatively, 2 years postoperatively, and final follow up. Patients were evaluated for PASS achievement, reoperation, and sports participation.

RESULTS:

Forty-two hips in 37 patients (11 males, 26 females, age: 17.7 ± 2.1 years, range 13.6-23.0, BMI: 22.8 ± 2.9 kg/m², range: 17.6-33.7) met inclusion criteria, were followed for 10.0 ± 1.3 years (range: 8.5-13.0) postoperatively, and underwent the procedures listed in Table 1. Mean mHHS, HOS-ADL, and HOS-Sports outcome scores at 10-years were 82.2 ± 12.9, 89.6 ± 10.9, and 81.8 ± 16.4, respectively, with significant (p<0.001) postoperative improvements (Table 2). Thirty survey respondents (83%) met PASS for mHHS, 27 (75%) for HOS-ADL, and 24 (67%) for HOS-Sports. At mean 10-year follow up, only 9/37 (24%) cited their hip as the reason for stopping sport (Table 3). Of the remaining patients, 17/28 (61%), continued playing their initial sport. There was no difference in patient-reported outcomes between patients who endorsed sports continuance and patients who did not report sports continuance and did not cite their hip as a reason (p ≥ 0.229). At final follow up, 4 hips (10%) had undergone subsequent surgical intervention at a mean of 4.8 ± 3.3 years (range: 1.0-8.4) postoperatively.

DISCUSSION AND CONCLUSION:

Durable long-term outcomes and satisfactory PASS achievement rates are observed in young amateur athletes undergoing primary hip arthroscopy. At mean 10-year follow up, only 1 in 4 patients discontinue their sports due to hip related reasons.

Table 1. Operative Characteristics

Procedure	Number (%) hips
Labral repair	42 (100%)
Capsular repair	23 (55%)
Cam resection	40 (95%)
Pincer resection	32 (76%)
Both Cam & Pincer resection	3 (7%)
Psoas Lengthening	14 (33%)

Table 2. T-test of 3-year post-operative outcomes to mean 10-year post-operative outcomes. Values reported as Mean ± SD (range)

Score	Preoperative	Mean 3-year follow-up	P value ¹	Mean 10-year follow-up	P value ²
mHHS	63.6 ± 16.2	84.0 ± 14.9(49.5-100)	<0.001	83.7 ± 11.6(48.4-100)	<0.001
HOS-ADL	78.1 ± 11.5	90.6 ± 11.6(58.8-100)	<0.001	90.4 ± 10.6(52.9-100)	<0.001
HOS-Sports	43.7 ± 19.2	77.9 ± 24.5(8.3-100)	<0.001	83.0 ± 16.1(33.3-100)	<0.001
Tegner score	3.5 ± 1.3	6.8 ± 1.8(2-10)	<0.001	5.3 ± 2.3(2-10)	<0.001

¹Denotes comparison of Preoperative to 3-year follow up. ²Denotes comparison of Preoperative to 10-year follow up.

Table 3 Return to Sport by Category

Sport Played (Competitive)	Number of Subjects	No Sports Continuance due to Hip Related Reasons (%)
Baseball	1	0/1 (0)
Basketball	5	0/5 (0)
Cross-Country/ Track and Field	8	2/8 (25)
Dance	4	2/4 (50)
Fencing	1	0/1 (0)
Football	2	0/2 (0)
Gymnastics	1	0/1 (0)
Ice Hockey	2	1/2 (50)
Lacrosse	1	0/1 (0)
Skiing	1	0/1 (0)
Soccer	5	2/5 (40)
Softball	2	1/2 (50)
Swimming	1	1/1 (100)
Volleyball	3	0/3 (0)
Total	37	9/37 (24)