FEMORAL ACETABULAR IMPINGEMENT AND RETURN TO PLAY

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PATIENT HISTORY

• 23 YO PROFESSIONAL LHD PITCHER WITH LEFT GROIN PAIN X 6 MONTHS.
• SYMPTOMS WITH SQUATS/TRAINING, PITCHING AND HITTING
• ABLE TO CONTINUE TO PLAY DESPITE PAIN
• PEX: LIMITED IR TO 0 DEGREES BILATERALLY ER OF 45 DEGREES BILATERALLY. + IMPINGMENT AND SCOUR TESTS ON LEFT
QUESTIONS

• **What do you tell the player?** Operative vs. Non-operative? Injections?
• **Results of surgery?**
• **Time to return to play?**
• **Will he return to same level of play?**
• **Risk of delaying treatment? Timing of surgery?**
Nonoperative Management of Labral Tears of the Hip in Adolescent Athletes: Description of Sports Participation, Interventions, Comorbidity, and Outcomes

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Abstract

**Context:** Hip injury among young athletes is increasing, especially hip labral tears. Some tears may require surgical intervention, especially if they are associated with bony pathology such as femoroacetabular impingement (FAI). A protocol for nonoperative treatment of the hip labral tears is not well established. **Objective:** To identify current nonoperative treatment options, comorbidities, sports participation, and outcomes of adolescent athletes who were diagnosed with hip labral tears. **Study Design:** Retrospective chart review. **Setting:** A regional tertiary level medical and academic institution. **Participants:** Physically active 8- to 20-year-old males and females who were diagnosed with hip labral tears in 2010 to 2013. **Main Outcome Measures:** Nonoperative treatment interventions including physical therapy (PT), intraarticular injection (IAI), the type of sports participation, and comorbidity were extracted. **Statistical Analysis:** Descriptive statistics and $\chi^2$ tests were used with a priori alpha level $\leq 0.05$. **Results:** Among 76 adolescent athletes who were diagnosed with hip labral tear, 52 (68.4%) had PT, 55 (72.4%) received IAI, and 43 (56.6%) experienced both PT and IAI interventions. Top 3 sports participated were dance (18.4%), soccer (14.5%), and gymnastics (7.9%). The most common comorbidity was FAI, which was observed in 46 individuals (60.5%). Although there was no difference in a proportion of FAI cases between sexes, a greater proportion of surgical cases were observed among hip labrum-injured athletes with FAI compared with those without FAI ($P = 0.032$). **Conclusions:** Adolescent athletes with hip labral tears often receive PT, IAI, and a combination of both, as nonoperative treatment options in this study cohort. The adolescent athletes who sustained hip labral tears with comorbidity of FAI had significantly greater proportion of surgical cases after nonoperative treatments.

**Key Words:** treatment, FAI, pediatrics, injections, acetabular labral tear

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**TABLE 3.** Comparison of Necessity of Surgery (Did Not Result in Surgery and Resulted in Surgery) and Presence of FAI (With FAI and Without FAI) Among Patients With Hip Labral Tears

<table>
<thead>
<tr>
<th></th>
<th>Labral Tear Without FAI</th>
<th>Labral Tear With FAI</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Did not result in surgery</td>
<td>11 (14.5%)</td>
<td>7 (9.2%)</td>
<td>18 (23.7%)</td>
</tr>
<tr>
<td>Resulted in surgery</td>
<td>19 (25.0%)</td>
<td>39 (51.3%)</td>
<td>58 (76.3%)</td>
</tr>
<tr>
<td>Total</td>
<td>30 (39.5%)</td>
<td>46 (60.5%)</td>
<td>76 (100.0%)</td>
</tr>
</tbody>
</table>

\[ P = 0.032 \text{ by } \chi^2 \text{ analysis.}\]

- **WE FOLLOWED OUR RESULTS FOR 2 YEARS AND FOUND BETWEEN 15-20% OF PATIENTS PRESENTING WITH FAI HAD LONG STANDING IMPROVEMENT WITH NON-OPERATIVE TREATMENT WITH PT/INJECTIONS**
Symposium: evidence for the use of intra-articular cortisone or hyaluronic acid injection in the hip.

Chandrasekaran S¹, Lodhia P¹, Suarez-Ahedo G¹, Venula SP¹, Martin TJ¹, Domb BG²

Author information

Abstract
The primary purpose of this review article is to discuss the role of diagnostic, corticosteroid, hyaluronic acid (HA) and platelet rich plasma (PRP) in the treatment of osteoarthritis (OA) and femoroacetabular impingement (FAI). These treatments play an important biological role in the non-operative management of these conditions. Two independent reviewers performed an search of PubMed for articles that contained at least one of the following search terms pertaining to intra-articular hip injection-local anaesthetic, diagnostic, ultrasound, fluoroscopic, image guided, corticosteroid, HA, PRP, OA, labral tears and FAI. Seventy-two full text articles were suitable for inclusion. There were 18 articles addressing the efficacy of diagnostic intra-articular hip injections. With respect to efficacy in OA there were 25 articles pertaining to efficacy of corticosteroid, 22 of HA and 4 of PRP. There were three articles addressing the efficacy of biologics in FAI. Diagnostic intra-articular hip injections are sensitive and specific for differentiating between intra-articular, extra-articular and spinal causes of hip symptoms. Ultrasound and fluoroscopy improves the precision of intra-articular positioning of diagnostic injections. Corticosteroids are more effective than HA and PRP in alleviating pain from hip OA. A higher dose of corticosteroids produces a longer benefit but volume of injection has no significant effect. Intra-articular corticosteroids do not increase infection rates of subsequent arthroplasty. There is currently limited evidence to warrant the routine use of therapeutic injections in the management of labral tears and FAI.
SURGERY
Return-to-play rates following arthroscopic treatment of femoroacetabular impingement in competitive baseball players

Ryan M. Degen, Kara G. Fields, C. Sally Wentzel, Bethanne Bartscherer, Anil S. Ranawat, Struan H. Coleman & ... show all

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• **Results:** The cohort included professional (27.1%), college (57.1%), high-school (8.6%) and club-team athletes (7.1%). Infielder (37.5%), pitcher (22.9%) and catcher (16.7%) were the most common positions. Average follow-up was 16.8 months (range 12.1–34.2). There was no relationship between playing position and impingement pattern ($p \geq 0.459$), or between symptom laterality and handedness, batting position or playing position ($p \geq 0.179$). One patient required revision surgery (infection). **Return to sport rate was 88%, at a mean of 8.6 ± 4.2 months, with 97.7% returning at/above their pre-injury level of play.** There was significant improvement in all outcome measures: MHHS (60.1 ± 11.9 to 93 ± 9.5), HOS-ADL (71.3 ± 16.7 to 96.3 ± 3.6), HOS-SSS (51.3 ± 24.8 to 92.3 ± 8.2) and iHOT-33 (40.7 ± 19.9 to 85.9 ± 14) ($p < 0.001$).
WHAT ABOUT SPORTS OTHER THAN BASEBALL?

Return to sport after hip surgery for femoroacetabular impingement: a systematic review

Nicola C Casartelli,1 Michael Leunig,2 Nicola A Mattiucci,1 Mario Bizzini1
CONCLUSION

On average, from 18 studies analysed, **87% of the athletes with symptomatic FAI returned to sport after hip surgery** and **82% could return to the same level of sport** as before the occurrence of symptoms. The level of competition, the time of evaluation after hip surgery and the amount of articular cartilage lesions at the time of hip surgery may all influence the return to sport. In addition, the rate of return to sport is not always positively associated with the actual satisfaction and sport ability of athletes.
How might it impact on clinical practice in the near future?

- High rates of return to sport after hip surgery for femoroacetabular impingement (FAI) are not generalisable to all hip surgeons and facilities.
- Diffuse hip osteoarthritis at the time of hip surgery may not allow athletes to return to sport.
- Return to sport should not be used as a single outcome for evaluating the success of hip surgery for FAI.
- Studies with higher levels of evidence (prospective, randomised) are needed to evaluate return to sport by comparing hip surgery approaches and rehabilitation protocols, and using self-reported and performance-based outcomes.
Femoroacetabular Impingement in Professional Football Players: Return to Play and Predictors of Career Length After Hip Arthroscopy.

Menge TJ\(^1\), Bhatia S\(^1\), McNamara SC\(^1\), Briggs KK\(^1\), Philippon MJ\(^4\).

**Abstract**

**BACKGROUND:** Previous studies have shown hip arthroscopy to be a highly effective treatment for symptomatic femoroacetabular impingement (FAI) in a wide range of athletes, however, the rate of return to play and length of career after hip arthroscopy in professional football players are unknown.

**PURPOSE:** To determine how many athletes returned to professional football and the number of seasons they played after surgery.

**STUDY DESIGN:** Case series; Level of evidence, 4.

**METHODS:** Fifty-one professional football players (60 hips) underwent hip arthroscopy for FAI between 2000 and 2014 by a single surgeon. Return to play was defined as competing in a preseason or regular season professional football game after surgery. Data were retrospectively obtained for each player from NFL.com, ESPN.com, individual team websites, and/or CFL.ca.

**RESULTS:** We found that 87% (52/60) of the arthroscopic procedures allowed professional football players to return to play in a preseason or regular season game. Athletes who returned played an average of 38 games during 3.2 seasons after arthroscopy, with an average total career length of 7.4 seasons. Ninety-two percent (48/52) of players who returned had a minimum total career length of 3 years. When participants were analyzed by position, linemen were less likely to return after hip arthroscopy compared with other players (odds ratio 5.6; 95% CI, 1.1-35; P = .04). All quarterbacks and tight ends returned to play after surgery. No significant difference in return to play rate was found between athletes who underwent microfracture and those who did not (25% vs 38%, P = .698).

**CONCLUSION:** Hip arthroscopy for treatment of FAI and associated pathologic abnormalities in professional football players resulted in a high rate of return to play. The study's findings demonstrate that 87% of the arthroscopic procedures allowed professional football players to return to play, linemen were less likely to return compared with other positions, and the presence of microfracture did not significantly affect the return to play rate. These findings support hip arthroscopy as an effective procedure to treat FAI and related pathologic abnormalities in the professional football player, and this information is important for proper counseling of athletes with FAI.
Timing in hip arthroscopy: does surgical timing change clinical results?

Aprato A¹, Jayasekera N, Villar R

Abstract

PURPOSE: To our knowledge, there is no report in the orthopaedic literature that correlates the duration of hip pain with the results of hip arthroscopic surgery. The aim of this study was to compare the modified Harris Hip Score (mHHS) with patient satisfaction in a prospective study over a two year period.

METHODS: We present a prospective single-surgeon series of 525 consecutive patients undergoing hip arthroscopy for a labral tear, femoroacetabular impingement (FAI), or a chondral lesion. Modified HHS was recorded for all patients at the time of surgery and at six weeks, six months and one, two and three years after hip arthroscopy. At the time of surgery, patients were divided into three groups based on duration of preoperative symptoms: group A, under 6 months; group B, six months to three years; group C, over three years.

RESULTS: Mean age was 39 years. There were significantly better outcomes for patients who underwent surgery within six months of symptom onset compared with those who waited longer. Patients who had symptoms for over 3 years by the time of surgery had a significantly poorer result than those with a shorter symptom duration and a higher chance of requiring revision surgery.

CONCLUSIONS: We recommend that patients with a diagnosis of labral tear, FAI or a chondral lesion should undergo hip arthroscopic surgery within six months of symptom onset. Patients with persistent symptoms for over three years should be made aware of the poorer outcome after hip arthroscopy.
Predictors of Length of Career After Hip Arthroscopy for Femoroacetabular Impingement in Professional Hockey Players.

Menge TJ, Briggs KK, Phillipon MJ.

Abstract

BACKGROUND: Previous studies have shown that professional hockey players return to sport at a high rate after hip arthroscopy, although it is unknown how long players continue to compete at a professional level after surgery.

PURPOSE: To determine the prevalence of athletes who continued playing in the National Hockey League (NHL) for a minimum of 5 years after hip arthroscopy for treatment of symptomatic femoroacetabular impingement (FAI) and to determine predictors associated with length of career.

STUDY DESIGN: Case series; Level of evidence, 4

METHODS: A total of 60 professional hockey players (69 hips) underwent hip arthroscopy for FAI by a single surgeon between 2005 and 2010. Data were retrieved from NHL.com and Hockey-reference.com regarding information on each player's professional career. Position played, age, surgical procedure, and intraoperative findings were also used in data analysis.

RESULTS: There were 12 centers, 15 defensemen, 16 goalies, and 17 wings studied. Of the 60 athletes, 40 (67%) continued to play professionally a minimum of 5 years after hip arthroscopy. As of the 2015 season, the mean length of a player's NHL career was 13.7 years (range, 2-27 years), with an average of 5.9 years played after hip arthroscopy. There was no difference in length of career or years played when goalies were compared with other positions ($P = .760$). Length of career and years played after arthroscopy correlated with age at surgery ($r = 0.798$ and $-0.408$, respectively). Players who played ≥5 years after arthroscopy were significantly younger than those who did not (25 vs 30 years; $P = .001$). Athletes who played <5 years after arthroscopy had a longer average duration of symptoms before surgery when compared with those who played ≥5 years (20.2 vs 9.3 months; $P = .049$). There were no differences in length of career or years played after arthroscopy based on type of labral treatment.

CONCLUSION: Professional NHL players who underwent hip arthroscopy for FAI were able to continue playing for an average of 5.9 years after surgery, with 67% playing a minimum of 5 years postoperatively. Younger age and shorter duration of symptoms at time of surgery correlated with greater length of career and years played after hip arthroscopy. Players who did not play a minimum of 5 years postoperatively had significantly longer duration of symptoms before surgery. The study data support early arthroscopic treatment of professional hockey players with symptomatic FAI.
MY ALGORITHM

- **IN SEASON ATHLETE**
  - **ABLE TO PLAY**
    - PT
    - Avoidance of HF activities
    - Possible injections: CS first then HA
  - **UNABLE TO PLAY**
    - Player with symptomatic FAI, + Xrays, MRI with LT but minimal chondral changes

- **OUT OF SEASON ATHLETE**
  - **CONSIDER SURGERY**
    - High level RTP
    - 6-12 months
CONCLUSION

• FAI treatment in athletes can vary based on symptom duration and severity
• Non-operative treatment has low long term success rates at return to play
• Operative treatment has high rates of RTP at or above the same level of play
• The longer the delay in surgery typically portends higher revision rates and lower RTP
THANK YOU

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