

1. Arthroscopy. 2010 Sep 25. [Epub ahead of print]

[Trapezoidal Bony Correction of the Femoral Neck in the Treatment of Severe Acute-on-Chronic Slipped Capital Femoral Epiphysis.](#)

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Abstract

PURPOSE: To present the first technical description of a modified surgical technique for trapezoidal bony correction of the femoral neck in the treatment of slipped capital femoral epiphysis (SCFE), performed entirely by arthroscopy.

METHODS: From December 2005 to January 2008, 5 patients with severe SCFE underwent trapezoidal femoral neck bone correction through arthroscopy. Their mean age at the time of surgery was 13.2 years. The time for postoperative follow-up ranged from a minimum of 12 months to a maximum of 39 months (mean, 26 months). The study analyzed data regarding the type of slip, degree of correction obtained, clinical and functional outcomes, and complications.

RESULTS: Analysis with the modified Harris Hip Score criteria showed a mean of 17.2 points preoperatively and 86.6 points at the last assessment. The mean epiphyseal deviation ranged from 82° at the initial presentation to 14° postoperatively. There were no intraoperative complications, and there was 1 case of avascular necrosis.

CONCLUSIONS: Arthroscopic treatment of SCFE resulted in correction of the angles of epiphyseal slip (from a mean epiphyseal-diaphyseal angle of 82° before surgery to 14° after surgery), with no immediate complications and 1 case of a late complication (avascular necrosis) in this 5-patient series. Clinical improvement was shown by a mean 69.4-point increase in the modified Harris Hip Score. Level of Evidence: Level IV, therapeutic case series.

PMID: 20875719 [PubMed - as supplied by publisher]

2. Clin Orthop Relat Res. 2010 Sep 25. [Epub ahead of print]

[What Factors Influence Long-term Survivorship After Hip Arthroscopy?](#)

[McCarthy JC](#), [Jarrett BT](#), [Ojeifo O](#), [Lee JA](#), [Bragdon CR](#).

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Abstract

BACKGROUND: Hip arthroscopy is an evolving procedure. One small study suggested that a low modified Harris hip score and arthritis at the time of surgery were predictors of poor prognosis.

QUESTIONS/PURPOSES: We therefore intended to confirm those findings with a large patient cohort to (1) determine the long-term nonarthritic hip score; (2) determine survivorship; (3) identify risk factors that increase the likelihood of THA; and (4) use those factors to create a usable risk assessment algorithm.

PATIENTS AND METHODS: We retrospectively reviewed 324 patients (340 hips) who underwent arthroscopy for pain and/or catching. Of these, 106 patients (111 hips or 33%) had a minimum followup of 10 years (mean, 13 years; range, 10-20 years). The average age was 39 years (\pm 13) with 47 men and 59 women. We recorded patient age, gender, acetabular and femoral Outerbridge grade at surgery, and the presence of a labral tear. Followup consisted of a nonarthritic hip score or the date of a subsequent THA. We determined survivorship with the end point of THA for the acetabular and femoral Outerbridge grades.

RESULTS: Overall survivorship among the 111 hips was 63% at 10 years. The average nonarthritic hip score for non-THA patients was 87.3 (\pm 12.1). Survivorship was greater for acetabular and femoral Outerbridge grades normal through II. Age at arthroscopy and Outerbridge grades independently predicted eventual THA. Gender and the presence of a labral tear did not influence long-term survivorship.

CONCLUSIONS: The long-term survivorship of labral tears with low-grade cartilage damage indicates hip arthroscopy is reasonable for treating labral tears.

LEVEL OF EVIDENCE: Level IV, therapeutic study. See Guidelines for Authors for a complete description of levels of evidence.

PMID: 20872105 [PubMed - as supplied by publisher]

[Related citations](#)

4. Arthroscopy. 2010 Aug;26(8):1053-7.

Do complications in hip arthroscopy change with experience?

[Souza BG](#), [Dani WS](#), [Honda EK](#), [Ricoli W Jr](#), [Guimarães RP](#), [Ono NK](#), [Polesello GC](#).

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Abstract

PURPOSE: The aim of this study was to evaluate the type and incidence of complications during the development of hip arthroscopic techniques.

METHODS: A retrospective series of 194 files of patients treated with hip arthroscopy in a tertiary hospital from December 1999 to March 2008 was reviewed for complications. The incidence of complications was recorded consecutively for each group of 30 patients and in intervals of 2 years. A comparison between the complication rates was performed within the time frames and the set of cases. The type and

severity of complications were also recorded.

RESULTS: There were 12 complications (6.1%) in this series. Of these, 5 were neurologic (2.6%), 4 were musculoskeletal (2%), and 3 were vascular/ischemic (1.5%). According to severity, 2 were considered major complications (1%), 8 were intermediate (4.1%), and 2 were minor (1%). The incidence of complications did not change with time ($P = .959$) or with the number of cases performed ($P = .771$), but different types of complications occurred along the learning curve.

CONCLUSIONS: The nature of complications changed with experience, but no significant variation in the incidence was observed over the 9-year period of experience with hip arthroscopy.

LEVEL OF EVIDENCE: Level IV, therapeutic case series.

PMID: 20678702 [PubMed - in process]

[Related citations](#)

5. Sports Med Arthrosc Rehabil Ther Technol. 2010 Jul 29;2:18.

The incidence of total hip arthroplasty after hip arthroscopy in osteoarthritic patients.

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Abstract

ABSTRACT:

OBJECTIVE: To assess the incidence of total hip arthroplasty (THA) in osteoarthritic patients who were treated by arthroscopic debridement and to evaluate factors that might influence the time interval from the first hip arthroscopy to THA.

DESIGN: Retrospective clinical series

METHODS: Follow-up data and surgical reports were retrieved from 564 records of osteoarthritic patients that have had hip arthroscopy between the years 2002 to 2009 with a mean follow-up time of 3.2 years (range, 1-6.4 years). The time interval between the first hip arthroscopy to THA was modelled as a function of patient age; level of cartilage damage; procedures performed and repeated arthroscopies with the use of multivariate regression analysis.

RESULTS: Ninety (16%) of all participants eventually required THA. The awaiting time from the first arthroscopy to a hip replacement was found to be longer in patients younger than 55 years and in a milder osteoarthritic stage. Patients that experienced repeated hip scopes had a longer time to THA than those with only a single procedure. Procedures performed concomitant with debridement and lavage did not affect the time interval to THA.

CONCLUSIONS: In our series of arthroscopic treatment of hip osteoarthritis, 16% required THA over a period of 7 years. Factors that influence the time to arthroplasty were age, degree of osteoarthritis and

recurrent procedures.

PMCID: PMC2924275 **Free PMC Article**

PMID: 20670440 [PubMed - in process]

[Related citations](#)

6

7. Arthroscopy. 2010 Sep;26(9 Suppl):S81-9. Epub 2010 Jul 7.

Labral base refixation in the hip: rationale and technique for an anatomic approach to labral repair.

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Abstract

Recent literature has defined the importance of anatomic repair in shoulder and knee arthroscopy. New advances in hip arthroscopy have created opportunities to apply the principle of anatomic repair to the hip. To address the obstacles in the restoration of labral anatomy, we describe an anatomic approach to labral refixation. We reviewed the literature on biomechanics of the labrum to identify the factors that are essential to the function of the labrum. Existing techniques for arthroscopic labral repair and potential challenges in restoration of labral anatomy were reviewed. A list of criteria for anatomic labral repair was created, and a technique for anatomic labral base refixation was developed. The technique incorporates the understanding of the function and biomechanical role of the labrum and builds on existing techniques to fulfill the criteria for restoration of anatomy. Our purpose was to review the anatomy, biomechanics, and existing repair techniques of the labrum, as well as to describe the rationale and surgical steps for anatomic labral base refixation in the hip.

PMID: 20615651 [PubMed - in process]

[Related citations](#)

8. Clin Orthop Relat Res. 2010 Jun 8. [Epub ahead of print]

In Situ Pinning With Arthroscopic Osteoplasty for Mild SCFE: A Preliminary Technical Report.

[Leunig M, Horowitz K, Manner H, Ganz R.](#)

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Abstract

BACKGROUND: There is emerging evidence that even mild slipped capital femoral epiphysis leads to early articular damage. Therefore, we have begun treating patients with mild slips and signs of

impingement with in situ pinning and immediate arthroscopic osteoplasty. DESCRIPTION OF

TECHNIQUES: Surgery was performed using the fracture table. After in situ pinning and diagnostic arthroscopy, peripheral compartment access was obtained and head-neck osteoplasty was completed.

METHODS: Between March 2008 and August 2009, three male patients (age range, 11-15 years; BMI, 22-31 kg/m²) presented with slip angles between 15 masculine and 30 masculine. All were ambulatory without assistance but had 2 to 12 weeks of hip and/or knee pain, limited motion and a positive impingement test. Postoperatively, patients were assessed at 6 weeks; 3 and 6 months; then every 6 months for the first two years. Hip motion, epiphyseal-metaphyseal offsets and alpha angles were determined. Patients completed the UCLA activity scale at latest followup that ranged from 6 to 23 months.

RESULTS: Arthroscopic evaluation revealed labral fraying, acetabular chondromalacia, and a prominent metaphyseal ridge. At last followup, each was pain-free and had returned to unrestricted activities. Hip motion improved in all and none demonstrated clinical impingement. Radiographs showed normalized epiphyseal-metaphyseal offsets and alpha angles.

CONCLUSIONS: In situ pinning with arthroscopic osteoplasty can limit impingement after mild slipped capital femoral epiphysis. Due to limited followup, we are unable to say whether this protocol reduces subsequent articular damage. Although we recommend performing these procedures concomitantly, they can be performed in a staged fashion, especially since hip arthroscopy following an epiphyseal slip can be challenging.

LEVEL OF EVIDENCE: Level IV, therapeutic study. See Guidelines for Authors for a complete description of levels of evidence.

PMID: 20532715 [PubMed - as supplied by publisher]

[Related citations](#)

9. J Bone Joint Surg Br. 2010 Jun;92(6):777-80.

Arthroscopic treatment of the snapping iliopsoas tendon through the central compartment of the hip: a pilot study.

[Contreras ME](#), [Dani WS](#), [Endges WK](#), [De Araujo LC](#), [Berral FJ](#).

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Abstract

We undertook a prospective pilot study to determine whether arthroscopic surgery through the central compartment of the hip was effective in the management of a snapping iliopsoas tendon. Seven patients were assessed pre-operatively and at three, six, 12 and 24 months after operation. This included the assessment of pain on a visual analogue scale (VAS) and function using the modified Harris hip score. All the patients had resolution of snapping post-operatively and this persisted at follow-up at two years. The mean VAS score for pain fell from 7.7 (6 to 10) pre-operatively to 4.3 (0 to 10) by three months ($p = 0.051$), and to 3.6 (1 to 8) ($p = 0.015$), 2.4 (0 to 8) ($p = 0.011$) and 2.4 (0 to 8) ($p = 0.011$) by six, 12 and 24 months, respectively. The mean modified Harris hip score increased from 56.1 (13.2 to 84.7) pre-operatively to 88.4 (57.2 to 100) at one year ($p = 0.018$) and to 87.9 (49.5 to 100) at two years ($p = 0.02$). There were no complications and no weakness occurred in the musculature around the hip. Our findings suggest that this treatment is effective and would support the undertaking of a larger study comparing this procedure with other methods of treatment.

PMID: 20513872 [PubMed - indexed for MEDLINE]

[Related citations](#)

10. Arthroscopy. 2010 Jun;26(6):757-61. Epub 2010 Apr 3.

[Acetabular rim reduction for the treatment of femoroacetabular impingement correlates with preoperative and postoperative center-edge angle.](#)

[Philippon MJ](#), [Wolff AB](#), [Briggs KK](#), [Zehms CT](#), [Kuppersmith DA](#).

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Abstract

PURPOSE: The purpose of this study was to quantify the change in degrees in the center-edge (CE) angle for each millimeter of acetabular rim resected in hips undergoing arthroscopic acetabular rim trimming.

METHODS: Preoperative and postoperative CE angle and millimeters of rim reduction were prospectively collected in 58 hips that underwent arthroscopic rim reduction. There were 35 women and 23 men. The mean age was 32 years. The inclusion criterion was hip arthroscopy for femoroacetabular impingement in patients without dysplastic hips. Two orthopaedic surgeons made independent measurements of the CE angle on preoperative and postoperative anteroposterior pelvis radiographs. To determine the amount of rim reduction intraoperatively, the lunate surface was measured with an arthroscopic ruler at the 12-o'clock position before and after rim trimming. The rim trimming was performed by a single surgeon using a 5.5-mm motorized bur.

RESULTS: For the 58 hips included in this study, the mean rim reduction performed was 3.2 mm (range, 1 to 9 mm). The mean change in CE angle was 3.9 degrees (range, 0 degrees to 17 degrees). All numbers were normally distributed. By use of a regression model, the change in the CE angle could be determined by the following formula: Change in CE angle = 1.8 + (0.64 x rim reduction in millimeters). The interobserver intraclass correlation coefficient for radiographic measurement of the CE angle was 0.92 (95% confidence interval, 0.87 to 0.95), indicating excellent interobserver reliability.

CONCLUSIONS: The amount of change in the CE angle can be estimated by the amount of bony resection performed at the 12-o'clock position on the lunate surface in the arthroscopic treatment of femoroacetabular impingement. We found that 1 mm of bony resection equals 2.4 degrees of change in the CE angle and 5 mm of bony resection equals 5 degrees of change in the CE angle.

LEVEL OF EVIDENCE: Level II, diagnostic study.

PMID: 20511033 [PubMed - in process]

[Related citations](#)

11. Arthroscopy. 2010 Jun;26(6):750-6. Epub 2010 Apr 3.

[Arthroscopic labral reconstruction in the hip using iliotibial band autograft: technique and early outcomes.](#)

[Philippon MJ](#), [Briggs KK](#), [Hay CJ](#), [Kuppersmith DA](#), [Dewing CB](#), [Huang MJ](#).

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Abstract

PURPOSE: The purpose of this study was to investigate the indications for and outcomes of arthroscopic labral reconstruction in the hip by use of iliotibial band (ITB) autograft.

METHODS: Between August 2005 and May 2008, the senior author (M.J.P.) performed 95 arthroscopic labral reconstructions using an ITB autograft in patients with advanced labral degeneration or deficiency. There were 47 patients who had undergone surgery at a minimum of 1 year previously and met the inclusion criteria. The modified Harris Hip Score (MHHS) and patient satisfaction were used to measure outcomes postoperatively. The labral autograft was harvested from the ITB through a separate incision. The graft was sutured to the intact labral remnant in the region of labral deficiency, re-establishing the suction seal of the hip joint.

RESULTS: There were 32 men and 15 women. The mean age at the time of surgery was 37 years (range, 18 to 55 years). The mean time from the onset of symptoms to labral reconstruction was 36 months (range, 1 month to 12 years). Subsequent total hip arthroplasty was performed in 4 patients (9%). Follow-up was obtained in 37 of the remaining 43 patients. The mean time to follow-up was 18 months (range, 12 to 32 months). The mean MHHS improved from 62 (range, 35 to 92) preoperatively to 85 (range, 53 to 100) postoperatively ($P = .001$). Median patient satisfaction was 8 out of 10 (range, 1 to 10). Patients who were treated within 1 year of injury had higher MHHSs than patients who waited longer than 1 year (93 v 81, $P = .03$). The independent predictor of patient satisfaction with outcome after labral reconstruction was age.

CONCLUSIONS: This study showed that patients who have labral deficiency or advanced labral degeneration had good outcomes and high patient satisfaction after arthroscopic intervention with acetabular labral reconstruction. Lower satisfaction was associated with joint space narrowing and increased age. Patients who waited longer than 1 year from the time of injury to surgery had lower function at follow-up than those treated in the first year.

LEVEL OF EVIDENCE: Level IV, therapeutic case series.

PMID: 20511032 [PubMed - in process]

[Related citations](#)

12. Arthroscopy. 2010 Jun;26(6):743-9. Epub 2010 Mar 31.

[The outcome of hip arthroscopy in Australian football league players: a review of 27 hips.](#)

[Singh PJ](#), [O'Donnell JM](#).

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Abstract

PURPOSE: The purpose of this study was to investigate on hip pathology found at hip arthroscopy in Australian Football League (AFL) players and describe our current treatments and outcomes.

METHODS: From 2003 to 2008, 24 consecutive AFL players (27 hips) had arthroscopic hip surgery by use of the lateral position. Patients were assessed preoperatively and postoperatively with the modified Harris Hip Score (MHHS) and Nonarthritic Hip Score (NAHS) and postoperatively with a satisfaction survey.

RESULTS: All hips were available for review. The mean duration of follow up was 22 months (range, 6 to 60 months). The mean age was 22 years (range, 16 to 29 years). The mean body mass index was 24

points (range, 21 to 26 points). The mean traction time was 21 minutes (range, 11 to 60 minutes). The most common pathology was a rim lesion, affecting 93% of cases. Microfracture was performed in 22%. Synovitis was found in 70%, and this was most commonly associated with a rim lesion. Labral pathology was present in 33%, the most common of which was labral separation. On the femoral side, 81% had cam impingement and underwent a femoral neck ostectomy. Rim lesions and labral pathology were the most commonly associated lesions. Also seen were loose os acetabuli in 7% and loose bodies in 7%. The former were associated with labral tears and required repair. The MHHS and NAHS improved in all patients postoperatively, and they maintained their improvement from 1 year up to 4 years. In all but 1 case, the players returned to playing at the AFL level and were satisfied with their outcome.

CONCLUSIONS: Using hip arthroscopy, we have observed high satisfaction levels and return to preinjury levels of play in all but 1 case. Postoperative hip scores (MHHS and NAHS) have improved significantly, and this improvement has been maintained for up to 4 years.

LEVEL OF EVIDENCE: Level IV, therapeutic case series.

PMID: 20511031 [PubMed - in process]
[Related citations](#)

13. Acta Orthop Belg. 2010 Apr;76(2):181-8.

Prevalence of acetabular cartilage lesions and labral tears in femoroacetabular impingement.

[Meermans G](#), [Konan S](#), [Haddad FS](#), [Witt JD](#).

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Abstract

The goal of this study was to determine the prevalence of associated acetabular cartilage lesions and labral tears in patients with cam-type femoro-acetabular impingement (FAI). We evaluated acetabular cartilage lesions and labral tears found during hip arthroscopy in 52 patients with radiological signs of cam-type FAI. We found a high prevalence of associated lesions (86.5%) in patients with cam-type FAI. They were graded according to the morphology, extent, and location of the lesion. Forty-one patients (78.8%) had an acetabular cartilage lesion. Labral tears were found in 31 patients (59.6%). There was a high correlation between age and the presence and extent of acetabular cartilage and labral lesions ($r = 0.70$; $p < 0.0001$ and $r = 0.45$; $p < 0.001$ respectively). There was also a high correlation between the extent of the acetabular cartilage lesion and the presence of labral lesions ($r = 0.62$; $p < 0.0001$). Despite the recognized consequences of associated lesions on treatment and outcome, no classification system includes this aspect of FAI. Based on our findings, we developed a system to grade acetabular cartilage lesions according to their morphology and extent. This information can help to define the natural history of cam-type FAI, and to determine appropriate treatment.

PMID: 20503943 [PubMed - indexed for MEDLINE]
[Related citations](#)

14. J Bone Joint Surg Br. 2010 May;92(5):629-33.

Arthroscopic femoral osteochondroplasty for cam lesions with isolated acetabular chondral damage.

[Haviv B](#), [Singh PJ](#), [Takla A](#), [O'Donnell J](#).

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Abstract

This study evaluates the outcome of arthroscopic femoral osteochondroplasty for cam lesions of the hip in the absence of additional pathology other than acetabular chondral lesions. We retrospectively reviewed 166 patients (170 hips) who were categorised according to three different grades of chondral damage. The outcome was assessed in each grade using the modified Harris Hip Score (MHHS) and the Non-Arthritic Hip Score (NAHS). Overall, at the last follow-up (mean 22 months, 12 to 72), the mean MHHS had improved by 15.3 points (95% confidence interval (CI), 8.9 to 21.7) and the mean NAHS by 15 points (95% CI, 9.4 to 20.5). Significantly better results were observed in hips with less severe chondral damage. Microfracture in limited chondral lesions showed superior results. Arthroscopic femoral osteochondroplasty for cam impingement with microfracture in selected cases is beneficial. The outcome correlates with the severity of acetabular chondral damage.

PMID: 20435997 [PubMed - indexed for MEDLINE]

[Related citations](#)

15. Arthroscopy. 2010 May;26(5):623-9. Epub 2010 Feb 11.

[Arthroscopic treatment of femoral acetabular impingement in patients with preoperative generalized degenerative changes.](#)

[Horisberger M](#), [Brunner A](#), [Herzog RF](#).

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Abstract

PURPOSE: The aim of this study was to evaluate the short-term results after arthroscopic femoroacetabular impingement (FAI) correction combined with additional procedures addressing labral and chondral damages in patients who showed generalized severe cartilage lesions intraoperatively.

METHODS: Between 2004 and 2007, 20 patients (16 men and 4 women) could be included in the study. Clinical parameters, the pain score on a visual analog scale, initial radiologic degenerative changes, the alpha angle, and the Nonarthritic Hip Score were prospectively documented. The study endpoint was the implantation of a total hip arthroscopy or the latest follow-up.

RESULTS: At a mean follow-up of 3.0 years, 10 patients (50%) had undergone, or planned to undergo, total hip replacement. The remaining patients showed a significant improvement in pain, Nonarthritic Hip Score, and hip flexion and internal rotation.

CONCLUSIONS: In patients with already marked generalized chondral lesions, arthroscopy does not have any effect beyond the short-term pain relief resulting from debridement. The study underlines the fact that FAI with advanced osteoarthritis, particularly Tönnis grade III, is not an indication for arthroscopic FAI correction.

LEVEL OF EVIDENCE: Level IV, therapeutic case series.

PMID: 20434659 [PubMed - indexed for MEDLINE]

[Related citations](#)

16. Hip Int. 2010 Jan-Mar;20(1):115-9.

Arthroscopic repair of acetabular chondral delamination with fibrin adhesive.

[Tzaveas AP](#), [Villar RN](#).

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Abstract

Acetabular chondral delamination is a frequent finding at hip arthroscopy. The cartilage is macroscopically normal but disrupted from the subchondral bone. Excision of chondral flaps is the usual procedure for this type of lesion. However, we report 19 consecutive patients in whom the delaminated chondral flap was re-attached to the underlying subchondral bone with fibrin adhesive. We used the modified Harris hip score for assessment of pain and function. Improvement in pain and function was found to be statistically significant six months and one year after surgery. No local or general complications were noted. Three patients underwent further surgery for unrelated reasons. In each, the area of fibrin repair appeared intact and secure. Our results suggest that fibrin is a safe agent to use for acetabular chondral delamination.

PMID: 20235074 [PubMed - indexed for MEDLINE]

[Related citations](#)

17. Arthroscopy. 2010 Mar;26(3):328-34. Epub 2009 Dec 29.

Factors affecting recovery after arthroscopic labral debridement of the hip.

[Lee HH](#), [Klika AK](#), [Bershady B](#), [Krebs VE](#), [Barsoum WK](#).

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Abstract

PURPOSE: The purpose of this study was to develop and validate a model predicting whether patients would have shorter-than-typical or longer-than-typical recoveries after hip arthroscopy for labral tears.

METHODS: We retrospectively reviewed 268 cases of hip arthroscopy implemented between 2000 and 2007 by 2 orthopaedic surgeons at our institution. The development cohort consisted of patients with magnetic resonance angiography-identified labral tears and a history and physical examination consistent with either labral pathology or loose bodies. Univariate analysis targeted preoperative patient characteristics correlated with the risk of longer-than-typical recoveries. Multivariate logistic regression was applied to generate an algorithm predicting risk of longer-than-typical recovery based on baseline characteristics. The algorithm was tested in the validation sample of 52 patients who were treated in 2007 and was found to be valid.

RESULTS: Five predictors for longer-than-typical recovery were identified: Workers' Compensation status, female gender, use of pain medications, presence of a limp, and presence of a lateral labral tear. The multivariate algorithm was developed and successfully validated.

CONCLUSIONS: This study identifies many new predictors of recovery, and it also corroborates those that have already been identified. The 5 predictors for longer-than-typical recovery identified by our validated multivariate algorithm were Workers' Compensation status, female gender, use of pain medications, presence of a limp, and presence of a lateral labral tear.

LEVEL OF EVIDENCE: Level IV, therapeutic case series.

PMID: 20206042 [PubMed - indexed for MEDLINE]

[Related citations](#)

18. AJR Am J Roentgenol. 2010 Mar;194(3):709-14.

[Acetabular labral tears and cartilage lesions of the hip: indirect MR arthrographic correlation with arthroscopy--a preliminary study.](#)

[Zlatkin MB](#), [Pevsner D](#), [Sanders TG](#), [Hancock CR](#), [Ceballos CE](#), [Herrera MF](#).

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Abstract

OBJECTIVE: The purpose of this study was to assess the diagnostic correlation between indirect MR arthrography, conventional MRI, and arthroscopy in acetabular labral and cartilage lesions of the hip.

MATERIALS AND METHODS: Fourteen patients who underwent conventional and indirect MR arthrography with arthroscopic correlation were studied over the course of 18 months. MR studies were performed on a 1.5-T magnet. Sequences consisted of unilateral sagittal turbo spin-echo proton density fat-suppressed, axial turbo spin-echo T2 fat-saturated, and coronal turbo spin-echo proton density fat-saturated images. Whole-pelvis coronal T1 and STIR sequences were also performed. Patients received IV gadolinium contrast material and exercised for 15 minutes. Gadolinium-enhanced fat-saturated T1 sequences were obtained in three planes. Arthroscopy was performed by two orthopedic surgeons who specialize in treating hip disorders. Cases were then retrospectively reviewed by two experienced musculoskeletal radiologists who were blinded to the arthroscopic findings. Cases were examined for acetabular labral tears and chondral lesions. Extraarticular findings of femoral acetabular impingement were recorded. Unenhanced and gadolinium-enhanced images of the labrum were compared for differences and changes in diagnosis. Comparison was made between the arthroscopic and MR findings for analysis of the results.

RESULTS: Of the 13 labral tears found at arthroscopy, 85% were detected by conventional MRI, whereas 100% were identified via indirect MR arthrography. Seventy percent of the labral tears identified on conventional MRI were better delineated by indirect MR arthrography. Identification of chondral abnormalities was not improved via indirect MR arthrography over conventional MRI.

CONCLUSION: IV contrast-enhanced indirect MR arthrography appears to be an effective means of hip evaluation for labral tears. It does not appear to improve detection of cartilage abnormalities when compared with conventional MRI.

PMID: 20173149 [PubMed - indexed for MEDLINE]

[Related citations](#)

19. Arthroscopy. 2010 Feb;26(2):161-72.

[The pattern and technique in the clinical evaluation of the adult hip: the common physical examination](#)

tests of hip specialists.

[Martin HD](#), [Kelly BT](#), [Leunig M](#), [Philippon MJ](#), [Clohisy JC](#), [Martin RL](#), [Sekiya JK](#), [Pietrobon R](#), [Mohtadi NG](#), [Sampson TG](#), [Safran MR](#).
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Abstract

PURPOSE: The purpose of this study was to systematically evaluate the technique and tests used in the physical examination of the adult hip performed by multiple clinicians who regularly treat patients with hip problems and identify common physical examination patterns.

METHODS: The subjects included 5 men and 6 women with a mean age (+/-SD) of 29.8 +/- 9.4 years. They underwent physical examination of the hip by 6 hip specialists with a strong interest in hip-related problems. All examiners were blind to patient radiographs and diagnoses. Patient examinations were video recorded and reviewed.

RESULTS: It was determined that 18 tests were most frequently performed (>or=40%) by the examiners, 3 standing, 11 supine, 3 lateral, and 1 prone. Of the most frequently performed tests, 10 were performed more than 50% of the time. The tests performed in the supine position were as follows: flexion range of motion (ROM) (percentage of use, 98%), flexion internal rotation ROM (98%), flexion external rotation ROM (86%), passive supine rotation test (76%), flexion/adduction/internal rotation test (70%), straight leg raise against resistance test (61%), and flexion/abduction/external rotation test (52%). The tests performed in the standing position were the gait test (86%) and the single-leg stance phase test (77%). The 1 test in the prone position was the femoral anteversion test (58%).

CONCLUSIONS: There are variations in the testing that hip specialists perform to examine and evaluate their patients, but there is enough commonality to form the basis to recommend a battery of physical examination maneuvers that should be considered for use in evaluating the hip.

CLINICAL RELEVANCE: Patients presenting with groin, abdominal, back, and/or hip pain need to have a basic examination to ensure that the hip is not overlooked. A comprehensive physical examination of the hip will benefit the patient and the physician and serve as the foundation for future multicenter clinical studies.

PMID: 20141979 [PubMed - indexed for MEDLINE]

[Related citations](#)

20. J Med Assoc Thai. 2009 Dec;92 Suppl 6:S161-4.

Arthroscopic loose body removal after hip fracture dislocation: experiences in 7 cases.

[Chernchujit B](#), [Sanguanjit P](#), [Arunakul M](#), [Jitapankul C](#), [Waitayawinyu T](#).

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Abstract

OBJECTIVE: The aims of the present study were to describe the technique of hip arthroscopy for osteochondral loose body removal after posterior hip dislocation and report its preliminary results.

MATERIAL AND METHOD: We reported consecutive patients undergoing hip arthroscopy for osteochondral fragment after sustaining fracture-dislocations. Seven patients who sustained traumatic hip

dislocation with incarcerated osteochondral were included in this study. All patients had standard AP pelvis x-rays and 3D-CT scans. After closed reduction, all patients underwent hip arthroscopy in which loose bodies were removed and labral pathology debrided.

RESULTS: The mean follow-up was 15.7 months. The average Harris Hip Score was 89.8. No patient developed any of the complications commonly associated with arthrotomy including avascular necrosis, heterotopic ossification, and nerve injury.

CONCLUSION: Arthroscopic treatment of intra-articular loose bodies after hip fracture-dislocations allows excellent visualization of the joint and facilitated straightforward removal of the fragment.

PMID: 20120680 [PubMed - indexed for MEDLINE]

[Related citations](#)

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Arthroscopic mobilization of the hip joint in children with aseptic necrosis of the femur head.

[Majewski M](#), [Hasler CC](#), [Kohler G](#).

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Abstract

The purpose of the study was to evaluate the ability of arthroscopic mobilization of the hip to improve restricted range of motion after failed conservative therapy (level IV) of patient with aseptic necrosis of the femoral head. We examined 11 patients (eight male, three female). The average age at follow-up was 13 years (8-17 years). All 11 patients suffered from idiopathic femur head necrosis (M. Perthes). A minimum 1-year follow-up revealed an average increase of hip motion of 20 degrees of flexion, 15 degrees of abduction (P=0.007), 30 degrees of adduction (P=0.03), 15 degrees of external rotation, and 20 degrees of internal rotation. Arthroscopic hydraulic hip distension with postoperative physiotherapy in a brace under epidural anesthesia of the hip joint leads to an increased range of motion of the affected hip and allows additional intraarticular assessment of the joint. Whether the arthroscopic findings will alter the treatment and prognosis of future patients has to be established with further studies.

PMID: 20087218 [PubMed - indexed for MEDLINE]

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Arthroscopic labral repair and treatment of femoroacetabular impingement in professional hockey players.

[Philippon MJ](#), [Weiss DR](#), [Kuppersmith DA](#), [Briggs KK](#), [Hay CJ](#).

Steadman Philippon Research Institute, 181 W. Meadow Drive, Suite 1000, Vail, CO 81657, USA.

Comment in:

- [Z Orthop Unfall. 2010 Jun;148\(3\):263.](#)

Abstract

BACKGROUND: Hip injuries are common among professional hockey players in the National Hockey League (NHL).

HYPOTHESIS: Professional hockey players will return to a high level of function and ice hockey after arthroscopic labral repair and treatment of femoroacetabular impingement.

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

METHODS: Twenty-eight professional hockey players (NHL) were unable to perform at the professional level due to unremitting and debilitating hip pain. Players underwent arthroscopic labral repair and were treated for femoroacetabular impingement from March 2005 to December 2007. Players who had bilateral hip symptoms were excluded. Athletes completed the Modified Harris Hip Score preoperatively and postoperatively and also completed a patient satisfaction questionnaire postoperatively. Return to sport was defined as the player resuming skating for training or participation in the sport of ice hockey.

RESULTS: The average age at the time of surgery was 27 years (range, 18-37). There were 11 left hips and 17 right hips. Player positions included 9 defensemen, 12 offensive players, and 7 goaltenders. All players had labral lesions that required repair. In addition, all patients had evidence of femoroacetabular impingement at the time of surgery. The average time to return to skating/hockey drills was 3.4 months. The average time to follow-up was 24 months (range, 12-42). The Modified Harris Hip Score improved from 70 (range, 57-100) preoperatively to an average of 95 (range, 74-100) at follow-up. The median patient satisfaction was 10 (range, 5-10). Two players had reinjury and required additional hip arthroscopy.

CONCLUSION: Treatment of femoroacetabular impingement and labral lesions in professional hockey players resulted in successful outcomes, with high patient satisfaction and prompt return to sport.

PMID: 19966097 [PubMed - in process]

[Related citations](#)

23. Clin Orthop Relat Res. 2010 Feb;468(2):511-8. Epub 2009 Sep 18.

[Osseous remodeling after femoral head-neck junction osteochondroplasty.](#)

[Nassif NA](#), [Pekmezci M](#), [Pashos G](#), [Schoenecker PL](#), [Clohisy JC](#).

Department of Orthopaedic Surgery, Washington University School of Medicine, One Barnes-Jewish Hospital Plaza, Suite 11300 West Pavilion, St Louis, MO 63110, USA.

Abstract

Femoral head-neck junction osteochondroplasty is commonly used to treat femoroacetabular impingement, yet remodeling of the osteochondroplasty site is not well described. We therefore describe bony remodeling at the osteochondroplasty site and analyze clinical outcomes and complications associated with femoral osteochondroplasty. We retrospectively reviewed 135 patients (150 hips) who underwent femoral head-neck osteochondroplasty combined with hip arthroscopy, surgical hip dislocation, periacetabular osteotomy, or proximal femoral osteotomy. The minimum clinical followup was 10 months (mean, 22.3 months; range, 10-65 months). We assessed the femoral-head neck offset, head-neck offset ratio, alpha angle, and cortical remodeling. We used the Harris hip score to determine hip function. We observed an increase in the head-neck offset, offset ratio, and decrease in the alpha angle postoperatively and at latest followup. Ninety-eight of 113 (87%) hips had partial or complete recorticalization at the osteochondroplasty site. The mean Harris hip score improved from 64 to 85. We excised heterotopic bone in one hip. There were no femoral neck fractures. The deformity correction achieved with femoral head-neck osteochondroplasty is maintained and recorticalization occurs in the majority of cases during the first two years. Level of Evidence: Level IV, therapeutic study. See Guidelines for Authors for a complete description of levels of evidence.

PMCID: PMC2807010 [Available on 2011/2/1]

PMID: 19763719 [PubMed - indexed for MEDLINE]

[Related citations](#)

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Hip arthroscopy in athletes: 10-year follow-up.

[Byrd JW](#), [Jones KS](#).

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Abstract

BACKGROUND: Arthroscopy is a well-accepted technique in the management of many athletic-related hip disorders, yet little quantitative outcomes data have been reported.

PURPOSE: To report the results of hip arthroscopy in a consecutive series of athletes with 10-year follow-up.

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

METHODS: Since 1993, all patients undergoing hip arthroscopy at our institution have been prospectively assessed with a modified Harris hip score preoperatively and then postoperatively at 1, 3, 6, 12, 24, 60, and 120 months or until a subsequent procedure was performed. The variables studied included age, sex, type of sport, level of sport, diagnosis, duration of symptoms, onset of symptoms, and center edge angle. Fifty-two procedures were performed on 50 patients who had achieved 10-year follow-up. Fifteen patients developed symptoms in the course of athletic activities and their cases represent the substance of this study.

RESULTS: Follow-up information was available for all 15 patients (11 men and 4 women). The average age was 31.7 years (range, 14-70 years). Type of sport involved included football (3), tennis (3), basketball (2), golf (2), and others (5); with 9 recreational, 4 high school, and 2 intercollegiate athletes. Diagnoses included chondral damage (8), labral tear (7), arthritis (5), avascular necrosis (1), loose body (1), and synovitis (1). The median improvement in the modified Harris hip score was 45 points (from 51 preoperatively to 96, on the 100-point scale), with 13 patients (87%) returning to their sport. All 5 athletes with arthritis eventually underwent total hip arthroplasty at an average of 6 years. There were no complications.

CONCLUSION: Arthroscopy to address hip injuries in athletes can result in substantial improvement with durable results. However, arthritis is a prognostic indicator of poor long-term outcomes.

PMID: 19684291 [PubMed - indexed for MEDLINE]

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25. Br J Sports Med. 2010 Aug 10. [Epub ahead of print]

Validity, reliability and responsiveness of patient-reported outcome questionnaires when assessing hip and groin disability: a systematic review.

[Thorborg K](#), [Roos E](#), [Bartels E](#), [Petersen J](#), [Hölmich P](#).

Department of Orthopaedic Surgery, Amager Hospital, Faculty of Health Sciences, University of Copenhagen, Copenhagen, Denmark.

Abstract

Background Novel treatment interventions are advancing rapidly in the management of hip and groin disability in the physically active young to middle-aged population. Objective To recommend the most suitable patient-reported outcome (PRO) questionnaires for the assessment of hip and groin disability based on a systematic review of evidence of validity, reliability and responsiveness of these instruments. Methods MEDLINE, EMBASE, CINAHL, Cochrane Central Register of Controlled Trials, PsycINFO, SportsDiscus and Web of Science were all searched up to January 2009. Two reviewers independently rated measurement properties of the PRO questionnaires in the included studies, according to a standardised criteria list. Results The computerised search identified 2737 publications. Forty-one publications investigating measurement properties of PRO questionnaires assessing hip or groin disability were included in the study. Twelve different questionnaires designed for patients with hip disability and one questionnaire for patients with groin disability were identified. Hip dysfunction and Osteoarthritis Outcome Score (HOOS) contains adequate measurement qualities to evaluate patients with hip osteoarthritis (OA) or total hip replacement (THR). Hip Outcome Score (HOS) is the best available questionnaire for evaluating hip arthroscopy, but the Inguinal Pain Questionnaire, the only identified questionnaire evaluating groin disability, does not contain adequate measurement qualities. Conclusions HOOS is recommended for evaluating patients with hip OA undergoing non-surgical treatment and surgical interventions such as THR. HOS is recommended for evaluating patients undergoing hip arthroscopy. Current and new PRO questionnaires should also be evaluated in younger patients (age <50) with hip and/or groin disability, including surgical and non-surgical patients.

PMID: 19666629 [PubMed - as supplied by publisher]

[Related citations](#)

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[Arthroscopic treatment of femoroacetabular impingement of the hip: a new technique to access the joint.](#)

[Horisberger M](#), [Brunner A](#), [Herzog RF](#).

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Abstract

Femoroacetabular impingement has been established as an important cause of groin pain and limitation of range of motion in young, active patients and a possible cause for early osteoarthritis of the hip. Open surgery is a well-recognized approach for treatment and probably the standard for most surgeons, but recent reports regarding arthroscopic treatment procedures suggest comparable results. We present a technique that provides a way to securely penetrate the joint capsule and evaluate the clinical results of this technique in patients with femoroacetabular impingement. Between 2004 and 2007, we prospectively followed a cohort of 105 hips (88 patients; 60 males, 28 females) who underwent surgery for symptomatic cam or mixed femoroacetabular impingement. All patients were evaluated for the Nonarthritic Hip Score, clinical parameters, visual analog scale pain score, initial radiographic degenerative changes, and alpha angle. At a minimum followup of 1.3 years (average, 2.3 years; range, 1.3-4.1 years), all clinical outcome measures improved. The Nonarthritic Hip Score improved from 56.7 points (range, 15-92.5 points) to 84.6 points (range, 47.5-100 points). Nine patients (8.6%) underwent THA during followup. The outcome measures after arthroscopic therapy for femoroacetabular impingement seem comparable to those reported after open procedures. LEVEL OF EVIDENCE: Level IV, therapeutic study. See Guidelines for Authors for a complete description of levels of evidence.

PMCID: PMC2795806 [Available on 2011/1/1]

PMID: 19641976 [PubMed - indexed for MEDLINE]

[Related citations](#)

27. Am J Sports Med. 2009 Sep;37(9):1721-7. Epub 2009 Jul 22.

[Hip arthroscopy for labral tears: review of clinical outcomes with 4.8-year mean follow-up.](#)

[Kamath AF](#), [Componovo R](#), [Baldwin K](#), [Israelite CL](#), [Nelson CL](#).

Department of Orthopaedic Surgery, Hospital of University of Pennsylvania, Philadelphia, Pennsylvania, USA.

Abstract

BACKGROUND: Arthroscopy of the hip joint is a relatively new diagnostic and therapeutic option for labral tears.

PURPOSE: More data are needed to characterize the utility and effectiveness of hip arthroscopy and identify patient-related factors that might predict functional outcome.

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

METHODS: This retrospective study with prospective follow-up examined the clinical outcomes of 52 consecutive patients undergoing hip arthroscopy for labral tears. Outcomes measures included clinical outcome and the modified Harris hip score. Any complications associated with the procedure were recorded. Exclusion criteria included age younger than 18 years or prior ipsilateral hip surgery.

RESULTS: Mean patient age was 42 years. Mean follow-up was 4.8 years. Twenty-one patients (40.4%) had a traumatic cause of the labral tears. Eight patients (15.4%) had possible secondary gain issues. Four (7.7%) patients suffered transient nerve palsies; in 1 case, the guide wire broke during initial cannulation. Three patients (5.8%) went on to total hip arthroplasty after hip arthroscopy. On multivariate analysis, left-sided surgery, a higher preoperative activity level, and duration of symptoms greater than 18 months were found to be positive predictors of good or excellent outcomes. Smoking and secondary gain issues were significant negative predictors of good or excellent outcomes. Only prior level of activity was a significant positive predictor of return to activity after surgery. A traumatic cause of the labral tear was a significant negative predictor of return to activity. Chondromalacia and osteoarthritis were not significant predictors of negative outcome. Postoperative modified Harris hip score improved 40% from 56.8 preoperatively to 80.4 ($P < .001$). No cases of patients with secondary gain issues achieved good or excellent outcomes. Overall percentage of good or excellent outcomes was 56%, or 66% when those with secondary gain issues were excluded; 84% of patients were able to return to sports or equivalent level of preoperative recreational activity. Neither preoperative radiographic osteoarthritis nor grade of intraoperative chondromalacia predicted postoperative outcome.

CONCLUSION: This series supports the hypothesis that hip arthroscopy provides safe and reliable improvement of labral symptoms in the majority of patients.

PMID: 19625736 [PubMed - indexed for MEDLINE]

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[Arthroscopy for labral tears in patients with developmental dysplasia of the hip: a cautionary note.](#)

[Parvizi J](#), [Bican O](#), [Bender B](#), [Mortazavi SM](#), [Purtill JJ](#), [Erickson J](#), [Peters C](#).

Rothman Institute of Orthopedics at Thomas Jefferson University Hospital, Philadelphia 19107, USA.

Abstract

Patients with developmental dysplasia of the hip may present with acetabular rim overloading, labral hypertrophy, and tear. Our hypothesis was that isolated arthroscopic treatment of labral tear is likely to fail in most patients. We investigated 34 patients who underwent at least one arthroscopy of the hip for labral tear. Developmental hip dysplasia or other morphologic abnormalities of the hip were confirmed in all patients. Arthroscopy failed to relieve pain in 24 patients. We observed accelerated arthritis in 14 patients and migration of the femoral head in 13 patients. Sixteen patients underwent further surgery (further surgeries included periacetabular osteotomy [6 patients], femoroacetabular osteoplasty [7 patients], and total hip arthroplasty [3 patients]). At the latest follow-up, all patients but one were pain-free. Patients with evidence of abnormal hip morphologies may not benefit from hip arthroscopy and isolated treatment of the labrum; in fact, the latter may accelerate the process of arthritis in some patients.

PMID: 19596542 [PubMed - indexed for MEDLINE]

[Related citations](#)

29. Knee Surg Sports Traumatol Arthrosc. 2009 Oct;17(10):1257-63. Epub 2009 Jun 30.

Prognostic value of chondral defects on the outcome after arthroscopic treatment of acetabular labral tears.

[Streich NA](#), [Gotterbarm T](#), [Barié A](#), [Schmitt H](#).

Department of Orthopedic Sports Medicine, University of Heidelberg, Schlierbacher Landstrasse 200a, Heidelberg 69118, Germany. Nikolaus.Streich@ok.uni-heidelberg.de

Abstract

Pathology of the acetabular labrum plays an increasing role in the treatment of hip pain. Hip arthroscopy has proven its clinical value as a useful procedure for successful treatment of labral tears. Until today, only a few studies have investigated the influence of articular cartilage defects on the clinical outcome of partial arthroscopic labrum resection in a larger patient population. We prospectively evaluated patients with an intraoperatively proven labral lesion/tear without any radiological and arthroscopical sign of a concomitant bony femoroacetabular impingement or hip dysplasia for a minimum postoperative follow-up of 2 years. Cartilage defects were classified according to Outerbridge and divided into two subgroups: Outerbridge ≤ 1 and Outerbridge > 2 , respectively. To evaluate combined results, various established scoring systems (visual analogue scale, modified Harris Hip Score, Larson Hip Score) were used. Out of 54 originally enrolled patients, 50 individuals (29 female, 21 male) with a median age of 33 years (range 15-49) were available for follow-up after a mean of 34 (range 24-48) months. At follow-up, the total study population experienced significant improvement in pain and in the combined evaluation scales (Larson Hip Score/MHHS). When patients were categorized into two subgroups, either with intraoperatively present or absent articular cartilage defects, our data indicated that subjects with no degenerative changes of the articular cartilage surface significantly improved in the applied clinically scoring systems. In contrast, in patients with an articular cartilage lesion during hip arthroscopy score values had a tendency to be unimproved or even deteriorated at follow-up. Regression analysis revealed a significant negative correlation between postoperative outcome and the grading of the coexistent articular cartilage defect. On the basis of our investigation, we conclude that partial arthroscopic resection of a torn labrum without attending bone deformity (dysplasia or femoroacetabular impingement) can reveal good and satisfied results. Depending on the extent of a coexisting articular cartilage defect subjective clinical results are compromised.

PMID: 19565221 [PubMed - indexed for MEDLINE]

[Related citations](#)

30. Clin Orthop Relat Res. 2010 Mar;468(3):741-6. Epub 2009 Apr 21.

Prospective analysis of hip arthroscopy with 10-year followup.

[Byrd JW](#), [Jones KS](#).

Nashville Sports Medicine Foundation, 2011 Church Street, Suite 100, Nashville, TN 37203, USA. Publications@NSMFoundation.org

Abstract

Arthroscopic surgery of the hip is a well-established technique with numerous recognized indications. Despite the well-accepted nature of this procedure, there have been no outcomes studies with extended followup. We investigated the response to hip arthroscopy in a consecutive series of patients with 10 years followup. Since 1993, all patients undergoing hip arthroscopy have been assessed prospectively with a modified Harris hip score preoperatively and then postoperatively at 3, 12, 24, 60, and 120 months. A cohort of 50 patients (52 hips) was identified who had achieved 10-year followup and represent the substance of this study. There was 100% followup. The average age of the patients was 38 years (range, 14-84 years), with 27 males and 23 females. The median improvement was 25 points (preoperative, 56 points; postoperative, 81 points). Fourteen patients were converted to THA and two died. Four patients underwent repeat arthroscopy. There were two complications in one patient. The presence of arthritis at the time of the index procedure was an indicator of poor prognosis. This study substantiates the long-term effectiveness of arthroscopy in the hip as treatment for various disorders, including labral pathology, chondral damage, synovitis, and loose bodies. Arthritis is an indicator of poor long-term outcomes with these reported methods. LEVEL OF EVIDENCE: Level IV, therapeutic study. See Guidelines for Authors for a complete description of levels of evidence.

PMCID: PMC2816779 [Available on 2011/3/1]

PMID: 19381742 [PubMed - indexed for MEDLINE]

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31. AJR Am J Roentgenol. 2009 May;192(5):1397-400.

[Comparison of standard hip MR arthrographic imaging planes and sequences for detection of arthroscopically proven labral tear.](#)

[Ziegert AJ](#), [Blankenbaker DG](#), [De Smet AA](#), [Keene JS](#), [Shinki K](#), [Fine JP](#).

Department of Radiology, University of Wisconsin School of Medicine and Public Health, 600 Highland Avenue, Madison, WI 53792, USA.

Abstract

OBJECTIVE: The purpose of this study was to compare multiple imaging planes and two pulse sequences for detection of arthroscopically proven labral tears.

MATERIALS AND METHODS: From March 2004 through June 2007, acetabular labral tear was diagnosed at hip arthroscopy of 189 patients. Preoperative MR arthrography of the affected hip was performed on 144 patients at our institution. These MR arthrograms were retrospectively reviewed by a musculoskeletal fellow and two musculoskeletal radiologists. The sequences used were coronal T1-weighted with fat saturation, coronal T2-weighted with fat saturation, sagittal T1-weighted with fat saturation, axial oblique T1-weighted with fat saturation, sagittal oblique T1-weighted with fat saturation, and axial T1-weighted. Using consensus, the reviewers evaluated images obtained with each sequence for the presence of a tear, number of slices on which a tear was seen, and the signal intensity of the tear.

RESULTS: Among the 144 tears, 97.2% were identified as definitely present on images obtained with at least one of the sequences. The axial oblique sequence had the highest individual detection rate (85.0%). The detection rates for the sagittal T1-weighted (74.6%), coronal T1-weighted (67.4%), and coronal T2-weighted (63.6%) sequences were intermediate. Detection rates with the axial T1-weighted (29.9%) and sagittal oblique (18.2%) sequences were low. With the combination of three sequences (coronal T2-weighted with fat saturation, axial oblique T1-weighted with fat saturation, and sagittal T1-weighted with fat saturation), 95.8% of the 144 tears were identified as definitely present. Twenty-eight percent of tears had a signal intensity less than that of gadolinium or fluid.

CONCLUSION: Imaging in the axial oblique plane has the highest rate of detection of acetabular labral tears. More than 95% of tears were identified with the use of three imaging planes. Signal intensity within a tear does not have to be equal to that of gadolinium or fluid to confirm the diagnosis of labral tear.

Free Article

PMID: 19380568 [PubMed - indexed for MEDLINE]

[Related citations](#)

32. Arthroscopy. 2009 Apr;25(4):416-29. Epub 2008 Nov 22.

The 23-point arthroscopic examination of the hip: basic setup, portal placement, and surgical technique.

[Bond JL](#), [Knutson ZA](#), [Ebert A](#), [Guanche CA](#).

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Abstract

The 23-point arthroscopic examination of the hip has been used for more than 400 arthroscopic hip procedures. It ensures that all components of the hip are carefully inspected and allows for proper documentation. It is vital that a precise knowledge of hip anatomy and common portal placement is coupled with proper patient selection, sound preoperative planning, and a consistent arthroscopic technique in order to maximize clinical outcomes. The 23-point arthroscopic examination of the hip uses 3 standard portals (anterior, anterolateral, and posterolateral) that provide a systematic method of examination of the key structures of the central and peripheral hip joint. The points are divided up into groups based on the portal through which they are viewed. The 23-point arthroscopic examination of the hip is reproducible, and offers some standardization within the evolving field of hip arthroscopy. It provides a consistent routine for hip arthroscopy that has yet to be published. Using this standardized examination can assist with the diagnostic accuracy of hip arthroscopy.

PMID: 19341931 [PubMed - indexed for MEDLINE]

[Related citations](#)

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34. Arthroscopy. 2009 Apr;25(4):382-91. Epub 2009 Feb 11.

Evaluation of a computed tomography-based navigation system prototype for hip arthroscopy in the treatment of femoroacetabular cam impingement.

[Brunner A](#), [Horisberger M](#), [Herzog RF](#).

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Abstract

PURPOSE: The purpose of this study was to investigate the impact of a new computed tomography-based computer navigation system on the accuracy of arthroscopic offset correction in patients with cam

type femoroacetabular impingement (FAI), and to evaluate if the accuracy of offset restoration compromises the early clinical outcome.

METHODS: We prospectively treated 50 patients (25 navigated and 25 non-navigated) by hip arthroscopy and arthroscopic offset restoration for cam FAI. The patients were a mean age 42.9 years, and the average follow-up was 26.7 months, with no patients lost to follow-up. Magnetic resonance imaging scans were performed preoperatively and 6 weeks postoperatively. A postoperative alpha angle of less than 50 degrees or a reduction of the alpha angle of more than 20 degrees was considered to be successful offset restoration. Outcomes were measured with a visual analogue scale for pain, range of motion, and the nonarthritic hip score.

RESULTS: The mean alpha angle improved from 76.5 degrees (range, 57 degrees to 110 degrees) to 54.2 degrees (range, 40 degrees to 84 degrees). In both the navigated and the non-navigated groups, 6 patients (24%) showed insufficient offset correction. Range of motion, visual analogue scale for pain scores, and nonarthritic hip scores significantly improved in all subgroups. Statistical analysis showed no significant difference regarding the clinical outcome between patients with sufficient and insufficient correction of the alpha angle.

CONCLUSIONS: In this series, a significant percentage of patients (24%) showed an insufficient correction of the alpha angle after hip arthroscopy for cam FAI. This study shows that the presented navigation system could not improve this rate and that the insufficient accuracy of reduction of the alpha angle does not appear to compromise the early clinical outcome.

LEVEL OF EVIDENCE: Level II, prospective comparative study.

PMID: 19341925 [PubMed - indexed for MEDLINE]

[Related citations](#)

35. Arthroscopy. 2009 Apr;25(4):369-76. Epub 2009 Mar 5.

Arthroscopic debridement versus refixation of the acetabular labrum associated with femoroacetabular impingement.

[Larson CM](#), [Giveans MR](#).

Minnesota Sports Medicine, Eden Prairie, Minnesota 55344, USA. christopher_larson@med.unc.edu

Abstract

PURPOSE: The purpose of this study was to compare the outcomes of arthroscopic labral debridement with those of labral refixation.

METHODS: We reviewed patients who underwent labral debridement during a period before the development of labral repair techniques. Patients with labral tears deemed repairable with our current arthroscopic technique were compared with patients who underwent labral refixation with a minimum 1 of year of follow-up. To better match the 2 groups, only patients with labral pathology caused by pincer-type or combined pincer- and cam-type femoroacetabular impingement were included. In the first 36 hips the labrum was debrided (group 1); in the next 39 hips the labrum underwent refixation (group 2). Outcomes were measured preoperatively and postoperatively with the modified Harris Hip Score (HHS), Short Form 12, and visual analog scale for pain. Preoperative and postoperative radiographs were obtained to evaluate bony resection (alpha angle) and osteoarthritis (Tönnis grade).

RESULTS: The mean age was 31 years in group 1, with a mean follow-up of 21.4 months, and 27 years in group 2, with a mean follow-up of 16.5 months. Preoperative subjective outcomes scores were not significantly different between groups. At the 1-year follow-up visit, subjective outcomes were significantly improved ($P < .01$) in both groups. HHSs were significantly better for the refixation group (94.3) compared with the debridement group (88.9) at 1 year ($P = .029$). At most recent follow-up, good to excellent results were noted in 66.7% of hips in the debridement group compared with 89.7% of hips in the

refixation group ($P < .01$).

CONCLUSIONS: Although other variables could have influenced these outcomes, these preliminary results indicate that labral refixation resulted in better HHS outcomes and a greater percentage of good to excellent results compared with the results of labral debridement in an earlier cohort.

LEVEL OF EVIDENCE: Level III, retrospective comparative study.

PMID: 19341923 [PubMed - indexed for MEDLINE]

[Related citations](#)

36. Arthroscopy. 2009 Apr;25(4):365-8.

Hip arthroscopy for labral pathology: prospective analysis with 10-year follow-up.

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Nashville Sports Medicine Foundation, Nashville, Tennessee 37203, USA. info@nsmoc.com

Abstract

PURPOSE: The purpose of this study was to investigate the results of arthroscopic treatment of acetabular labral tears (the most common indication for hip arthroscopy) in a consecutive series of patients with 10-year follow-up.

METHODS: Since 1993, all of our patients undergoing hip arthroscopy have been prospectively assessed by use of a modified Harris Hip Score preoperatively and postoperatively at 3, 12, 24, 60, and 120 months. Variables recorded include age, sex, diagnosis, duration of symptoms, onset of symptoms, center-edge angle, Workers' compensation status, and pending litigation. From a cohort of 52 procedures performed on 50 patients who had achieved 10-year follow-up, 29 patients (31 hips) were treated for a tear of the acetabular labrum and represent the substance of this study.

RESULTS: There was 100% follow-up, excluding 3 patients (5 hips) who died before their 10-year assessment. The mean age was 46 years (range, 17 to 84 years); there were 13 male and 13 female patients. The median Harris Hip Score improvement was 29 points (from 52 points preoperatively to 81 points postoperatively). Among 18 patients without arthritis, 15 (83%) continued to show substantial improvement (≥ 18 points) at 10-year follow-up. Among 8 patients with associated arthritis, 7 (88%) were converted to total hip arthroplasty at a mean of 63 months. Two patients underwent repeat arthroscopy, which did not preclude a successful outcome at 10-year follow-up. There were no complications.

CONCLUSIONS: Selective debridement of symptomatic tears can result in favorable long-term results. The presence of clinical findings of arthritis at the time of the index procedure is a poor prognostic indicator, with uniformly poor results at 10 years.

LEVEL OF EVIDENCE: Level IV, therapeutic case series.

PMID: 19341922 [PubMed - indexed for MEDLINE]

[Related citations](#)

37. Am J Sports Med. 2009 May;37(5):917-22. Epub 2009 Feb 26.

Sports and recreation activity of patients with femoroacetabular impingement before and after arthroscopic osteoplasty.

[Brunner A](#), [Horisberger M](#), [Herzog RF](#).

Department of Orthopaedic Surgery, Cantonal Hospital Lucerne, Wolhusen, Switzerland. a-r.brunner@web.de

Abstract

BACKGROUND: Hip arthroscopy represents a new and minimally invasive method of treating patients with femoroacetabular impingement (FAI). However, participation in popular sports after this procedure has not yet been analyzed.

HYPOTHESES: Arthroscopic treatment of FAI increases the level of popular sports activities, and this level of activity correlates with the clinical outcome in terms of pain and function.

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

METHODS: Fifty-three patients (41 male, 12 female) were evaluated preoperatively and after a mean follow-up of 2.4 years (range, 2-3.2 years) after arthroscopic osteoplasty for cam and mixed FAI. Evaluation included the type and level of sports activities (sports frequency score [SFS]) as well as clinical outcome in terms of pain (VAS) and function (nonarthritic hip score [NAHS]).

RESULTS: Forty-five of the 53 patients had regularly participated in popular sports until the first occurrence of FAI symptoms. Preoperatively, only 4 of these 45 patients had maintained their accustomed level of activity. At the final follow-up, 31 patients had returned to their full accustomed level of activity. None of the patients who had not been active in sports before the first occurrence of symptoms of FAI (n = 8) had begun participation in sports after arthroscopic osteoplasty. The SFS significantly increased from 0.78 to 1.84 (P < .001), and the mean VAS pain score significantly improved from 5.7 (range, 1-9) to 1.5 (range, 0-6) points (P < .001). The NAHS improved from 54.4 (range, 28.75-92.5) to 85.7 (range, 47.5-100) (P < .001). There was no significant correlation between SFS and NAHS (r = .051, P = .35), as well as between SFS and VAS pain score (r = .159, P = .140) preoperatively, but a significant correlation was seen at the time of the last postoperative follow-up (SFS/NAHS: r = .392, P = .003; SFS/VAS: r = .242, P = .049). The 3 most frequent sports activities postoperatively were biking, hiking, and fitness.

CONCLUSION: Arthroscopic osteoplasty can significantly improve the rate and level of popular sports activities in patients with FAI. The level of postoperative sports activity directly correlates with the clinical outcome in terms of pain and function.

PMID: 19251673 [PubMed - indexed for MEDLINE]

[Related citations](#)

38. Am J Sports Med. 2009 Apr;37(4):743-7. Epub 2009 Feb 9.

Endoscopic repair of gluteus medius tendon tears of the hip.

[Voos JE](#), [Shindle MK](#), [Pruett A](#), [Asnis PD](#), [Kelly BT](#).

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Abstract

BACKGROUND: Tears of the gluteus medius tendon at the greater trochanter have been termed "rotator cuff tears of the hip." Previous reports have described the open repair of these lesions.

HYPOTHESIS: Endoscopic repair of gluteus medius tears results in successful clinical outcomes in the short term.

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

METHODS: Of 482 consecutive hip arthroscopies performed by the senior author, 10 patients with gluteus medius tears repaired endoscopically were evaluated prospectively. Perioperative data were analyzed on this cohort of patients. There were 8 women and 2 men, with an average age of 50.4 years (range, 33-66 years). Patients had persistent lateral hip pain and abductor weakness despite extensive conservative measures. Diagnosis was made by physical examination and magnetic resonance imaging and was confirmed at the time of endoscopy in all cases. At the most recent follow-up, patients completed the Modified Harris Hip Score and Hip Outcomes Score surveys.

RESULTS: At an average follow-up of 25 months (range, 19-38 months), all 10 patients had complete resolution of pain; 10 of 10 regained 5 of 5 motor strength in the hip abductors. Modified Harris Hip Scores at 1 year averaged 94 points (range, 84-100), and Hip Outcomes Scores averaged 93 points (range, 85-100). There were no adverse complications after abductor repairs. Seven of 10 patients said their hip was normal, and 3 said their hip was nearly normal.

CONCLUSION: With short-term follow-up, endoscopic repair of gluteus medius tendon tears of the hip appears to provide pain relief and return of strength in select patients who have failed conservative measures. Further long-term follow-up is warranted to confirm the clinical effectiveness of this procedure.

PMID: 19204363 [PubMed - indexed for MEDLINE]

[Related citations](#)

39. J Pediatr Orthop. 2009 Jan-Feb;29(1):9-13.

[Intraarticular findings in symptomatic developmental dysplasia of the hip.](#)

[Fujii M](#), [Nakashima Y](#), [Jingushi S](#), [Yamamoto T](#), [Noguchi Y](#), [Suenaga E](#), [Iwamoto Y](#).

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Abstract

BACKGROUND: The purpose of this study was to examine intraarticular pathology in patients younger than 20 years with symptomatic developmental dysplasia of the hip.

METHODS: We performed hip arthroscopy during corrective osteotomy in 23 hips in 22 patients. All patients were female, and the average age at operation was 16.4 years. Eighteen hips were in a prearthritic stage, and 5 hips were in an early stage. The presence and location of cartilage degeneration and labral tears were evaluated. Second-look arthroscopy was performed in 13 hips in 12 patients.

RESULTS: Fourteen hips (77.8%) in the prearthritic stage had cartilage degeneration. Cartilage lesions were more frequent in the acetabulum than in the femoral head (72.2% vs 16.7%). Sixty-one percent of

acetabular lesions were located at the anterosuperior area. Labral tears were observed in 77.8% of hips in prearthritic stages located at the anterosuperior (72.2%) and superior (44.4%) areas. The degree of cartilage and labral lesions in the early stage was more severe than in the prearthritic stage. On second-look arthroscopy, there were no changes in the state of the cartilage and labrum in the majority (84.6%) of hips.

CONCLUSIONS: The incidence of intraarticular lesions in developmental dysplasia of the hip was high, even in the prearthritic stage. These lesions tended to originate in the anterosuperior area of the acetabulum and were generally progressive.

PMID: 19098637 [PubMed - indexed for MEDLINE]

[Related citations](#)

40. Clin Orthop Relat Res. 2009 Mar;467(3):739-46. Epub 2008 Dec 19.

Arthroscopic femoroplasty in the management of cam-type femoroacetabular impingement.

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Abstract

Cam-type femoroacetabular impingement is a recognized cause of intraarticular pathology and secondary osteoarthritis in young adults. Arthroscopy is reportedly useful to treat selected hip abnormalities and has been proposed as a method of correcting underlying impingement. We report the outcomes of arthroscopic management of cam-type femoroacetabular impingement. We prospectively assessed all 200 patients (207 hips) who underwent arthroscopic correction of cam impingement from December 2003 to October 2007, using a modified Harris hip score. The minimum followup was 12 months (mean, 16 months; range, 12-24 months); no patients were lost to followup. The average age was 33 years with 138 men and 62 women. One hundred and fifty-eight patients (163 hips) underwent correction of cam impingement (femoroplasty) alone while 42 patients (44 hips) underwent concomitant correction of pincer impingement. The average increase in Harris hip score was 20 points; 0.5% converted to THA. We had a 1.5% complication rate. The short-term outcomes of arthroscopic treatment of cam-type femoroacetabular impingement are comparable to published reports for open methods with the advantage of a less invasive approach.

PMCID: PMC2635454 **Free PMC Article**

PMID: 19096902 [PubMed - indexed for MEDLINE]

[Related citations](#)

41. J Bone Joint Surg Br. 2009 Jan;91(1):16-23.

Outcomes following hip arthroscopy for femoroacetabular impingement with associated chondrolabral dysfunction: minimum two-year follow-up.

[Philippon MJ](#), [Briggs KK](#), [Yen YM](#), [Kuppersmith DA](#).

Steadman Hawkins Research Foundation, Vail, Colorado 81657, USA.

Abstract

Over an eight-month period we prospectively enrolled 122 patients who underwent arthroscopic surgery of the hip for femoroacetabular impingement and met the inclusion criteria for this study. Patients with bilateral hip arthroscopy, avascular necrosis and previous hip surgery were excluded. Ten patients refused to participate leaving 112 in the study. There were 62 women and 50 men. The mean age of the patients was 40.6 yrs (95% confidence interval (CI) 37.7 to 43.5). At arthroscopy, 23 patients underwent osteoplasty only for cam impingement, three underwent rim trimming only for pincer impingement, and 86 underwent both procedures for mixed-type impingement. The mean follow-up was 2.3 years (2.0 to 2.9). The mean modified Harris hip score (HHS) improved from 58 to 84 (mean difference = 24 (95% CI 19 to 28)) and the median patient satisfaction was 9 (1 to 10). Ten patients underwent total hip replacement at a mean of 16 months (8 to 26) after arthroscopy. The predictors of a better outcome were the pre-operative modified HHS ($p = 0.018$), joint space narrowing ≥ 2 mm ($p = 0.005$), and repair of labral pathology instead of debridement ($p = 0.032$). Hip arthroscopy for femoroacetabular impingement, accompanied by suitable rehabilitation, gives a good short-term outcome and high patient satisfaction.

PMID: 19091999 [PubMed - indexed for MEDLINE]

[Related citations](#)

42. J Bone Joint Surg Br. 2008 Dec;90(12):1570-5.

[Early outcome of hip arthroscopy for femoroacetabular impingement: the role of femoral osteoplasty in symptomatic improvement.](#)

[Bardakos NV](#), [Vasconcelos JC](#), [Villar RN](#).

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Abstract

There is a known association between femoroacetabular impingement and osteoarthritis of the hip. What is not known is whether arthroscopic excision of an impingement lesion can significantly improve a patient's symptoms. This study compares the results of hip arthroscopy for cam-type femoroacetabular impingement in two groups of patients at one year. The study group comprised 24 patients (24 hips) with cam-type femoroacetabular impingement who underwent arthroscopic debridement with excision of their impingement lesion (osteoplasty). The control group comprised 47 patients (47 hips) who had arthroscopic debridement without excision of the impingement lesion. In both groups, the presence of femoroacetabular impingement was confirmed on pre-operative plain radiographs. The modified Harris hip score was used for evaluation pre-operatively and at one-year. Non-parametric tests were used for statistical analysis. A tendency towards a higher median post-operative modified Harris hip score was observed in the study group compared with the control group (83 vs 77, $p = 0.11$). There was a significantly higher proportion of patients in the osteoplasty group with excellent/good results compared with the controls (83% vs 60%, $p = 0.043$). Additional symptomatic improvement may be obtained after hip arthroscopy for femoroacetabular impingement by the inclusion of femoral osteoplasty.

PMID: 19043126 [PubMed - indexed for MEDLINE]

[Related citations](#)

43. Arthroscopy. 2008 Dec;24(12):1390-4. Epub 2008 Oct 10.

[Safe angle for suture anchor insertion during acetabular labral repair.](#)

[Hernandez JD](#), [McGrath BE](#).

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Abstract

PURPOSE: The purpose of this study was to define a safe angle for suture anchor insertion during acetabular labral repair that will facilitate anchor placement within bone and prevent penetration into the hip

joint.

METHODS: Nine acetabuli were harvested. Anatomic measurements were performed at the anterosuperior quadrant. Electronic calipers were used to measure acetabular bone. "Safe angle" measurements were obtained with suture anchor drills and a protractor. Comparisons between groups were calculated with a 1-way analysis of variance. The Tukey post-hoc analysis was completed for all significant analysis of variance results.

RESULTS: Labral insertion point distances and acetabular bone widths at the labral insertion did not statistically differ. Mean "danger angles" ranged from 17.0 degrees to 23.8 degrees. Safe angle measurements ranged from 20.1 degrees to 27.6 degrees.

CONCLUSIONS: The extracapsular labral insertion, located between 2.3 and 2.6 mm from the rim of the anterosuperior acetabulum, is offered as a starting point for insertion of anchors sized less than 3.0 mm. The danger angle and safe angle of anchor insertion serve as guidelines that may improve fixation in bone and lessen intra-articular penetration. A target angle of 10 degrees is recommended.

CLINICAL RELEVANCE: The danger angle and safe angle may be referenced intraoperatively, during imaging and suture anchor insertion, to assure anchor placement within bone and prevent intra-articular penetration. A target angle of 10 degrees is safe and easily remembered.

PMID: 19038710 [PubMed - indexed for MEDLINE]

[Related citations](#)

44. Clin Orthop Relat Res. 2009 Mar;467(3):799-804. Epub 2008 Oct 31.

[Arthroscopic gluteal muscle contracture release with radiofrequency energy.](#)

[Liu YJ](#), [Wang Y](#), [Xue J](#), [Lui PP](#), [Chan KM](#).

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Abstract

Gluteal muscle contracture is common after repeated intramuscular injections and sometimes is sufficiently debilitating to require open surgery. We asked whether arthroscopic release of gluteal muscle contracture using radiofrequency energy would decrease complications with clinically acceptable results. We retrospectively reviewed 108 patients with bilateral gluteal muscle contractures (57 males, 51 females; mean age, 23.7 years). We used inferior, anterosuperior, and posterosuperior portals. With the patient lying laterally, we developed and enlarged a potential space between the gluteal muscle group and the subcutaneous fat using blunt dissection. Under arthroscopic guidance through the inferior portal, we débrided and removed fatty tissue overlying the contractile band of the gluteal muscle group using a motorized shaver introduced through the superior portal. Radiofrequency then was introduced through the superior portal to gradually excise the contracted bands from superior to inferior. Finally, hemostasis was ensured using radiofrequency. Patients were followed a minimum of 7 months (mean, 17.4 months; range, 7-42 months). At last followup, the adduction and flexion ranges of the hip were 45.3 degrees +/- 8.7 degrees and 110.2 degrees +/- 11.9 degrees, compared with 10.4 degrees +/- 7.2 degrees and 44.8 degrees +/- 14.1 degrees before surgery. No hip abductor contracture recurred and no patient had residual hip pain or gluteal muscle wasting. We found gluteal muscle contracture could be released effectively with radiofrequency energy.

PMCID: PMC2635461 **Free PMC Article**

PMID: 18975040 [PubMed - indexed for MEDLINE]

[Related citations](#)

45. Clin Orthop Relat Res. 2009 Jan;467(1):174-80. Epub 2008 Oct 2.

The role of arthroscopy in evaluation of painful hip arthroplasty.

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Abstract

Unexplained pain after hip arthroplasty is frustrating for patients and surgeons. We describe the use of hip arthroscopy in management of the painful hip arthroplasty, critically evaluate the outcomes of these patients, and refine indications for hip arthroscopy in this setting. We retrospectively reviewed 14 patients (16 hips) who underwent hip arthroscopy after joint replacement. One patient had suspected septic arthritis despite negative aspiration and one had known septic arthritis but was not a candidate for open arthrotomy; two had intraarticular migration of hardware. The remaining 10 patients (11 hips) had persistent pain despite negative diagnostic studies. The two patients (two hips) with infection were successfully treated with arthroscopic lavage and débridement plus intravenous antibiotics. Intraarticular metal fragments and a loose acetabular screw were successfully removed in two patients (three hips). Findings in the remaining 11 hips included a loose acetabular component (one); corrosion at the head-neck junction of a metal-on-metal articulation (one); soft tissue-scar impingement at the head/cup interface (four); synovitis with associated scar tissue (four); and capsular scarring with adhesions (one). Arthroscopy represented a successful treatment or directly led to a successful treatment in 12 of 16 hips. We observed no complications as a result of the arthroscopy. Arthroscopy may be of value in selected patients undergoing hip arthroplasty with unexplained pain after an inconclusive standard workup. Level of Evidence: Level IV, therapeutic study. See the Guidelines for Authors for a complete description of levels of evidence.

PMCID: PMC2600968 **Free PMC Article**

PMID: 18830795 [PubMed - indexed for MEDLINE]

[Related citations](#)

46. J Pediatr Orthop. 2008 Oct-Nov;28(7):705-10.

Early outcomes after hip arthroscopy for femoroacetabular impingement in the athletic adolescent patient: a preliminary report.

[Philippon MJ](#), [Yen YM](#), [Briggs KK](#), [Kuppersmith DA](#), [Maxwell RB](#).

Steadman Hawkins Research Foundation, Vail, CO 81657, USA.

Abstract

BACKGROUND: Hip arthroscopy is becoming a more popular method of treatment of pediatric hip disorders. We report on the treatment of femoroacetabular impingement (FAI) in the adolescent population.

METHODS: Between March 2005 and May 2006, 16 patients (aged 16 years or younger) underwent hip arthroscopy for FAI. There were 14 female adolescents and 2 male adolescents, with 1 patient undergoing a bilateral procedure. Five patients had isolated pincer impingement, 2 had isolated cam impingement, and 9 had mixed pathology. All patients had labral pathology. Seven patients were treated with suture anchor repair of the labrum and 9 with partial labral debridement. Subjective data were collected from each patient during their initial visit and at follow-up after surgery. Subjective data included the modified Harris hip score (MHHS), patient satisfaction, and hip outcome score (HOS) activities of daily living (ADL), and sports subscales.

RESULTS: The mean age at the time of arthroscopy was 15 years old (range, 11-16 years). The mean preoperative MHHS was 55 (range, 33-70), HOS ADL was 58 (range, 38-75), and HOS sport was 33 (range, 0-78). The mean time from injury to surgery was 10.6 months (range, 6 weeks-30 months). The mean time to follow-up was 1.36 years (range, 1-2 years). The mean postoperative MHHS improved 35 points to 90 (range, 70-100; P = 0.005), postoperative HOS ADL improved 36 points to 94 (range, 74-100; P = 0.001), and postoperative HOS sport score improved 56 points to 89 (range, 58-100; P = 0.001).

The mean patient satisfaction score was 9 (range, 9-10).

CONCLUSIONS: Hip arthroscopy for FAI in the adolescent population produces excellent improvement in function and a high level of patient satisfaction in the short-term.

PMID: 18812894 [PubMed - indexed for MEDLINE]

[Related citations](#)

47. Am J Sports Med. 2008 Dec;36(12):2363-71. Epub 2008 Aug 12.

Results of arthroscopic iliopsoas tendon release in competitive and recreational athletes.

[Anderson SA](#), [Keene JS](#).

Department of Orthopedic Surgery and Rehabilitation, Division of Sports Medicine, University of Wisconsin-Madison, Madison, WI 53792, USA.

Abstract

BACKGROUND: An arthroscopic iliopsoas tendon release will alleviate painful snapping of the tendon. One question that remains is whether athletes can return to sports after this procedure. This study presents the results of 5 competitive and 10 recreational athletes who had an arthroscopic release of their iliopsoas tendon.

HYPOTHESIS: Athletes can return to full participation in their sport after an arthroscopic iliopsoas tendon release.

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

METHODS: Fifteen athletes (2 college, 3 high school, 10 recreational) with painful snapping hips and no pain relief after anesthetic magnetic resonance arthrography had an ultrasound evaluation of their iliopsoas tendon and an anesthetic injection into the psoas bursa. In all 15 patients, the injection relieved their hip pain, and in 10 patients, real-time imaging demonstrated snapping of the tendon. All hips were assessed with Byrd's 100-point hip scoring system before the release and at 1.5, 3, 6, and 12 months after surgery.

RESULTS: Preoperative hip scores averaged 41 and 44 points for the competitive and recreational athletes, respectively. After surgery, the 2 groups used crutches for 4 weeks, and had 6-week scores that averaged 87 and 63 points. At 6 months, their scores averaged 94 and 98 points, and at 12 months, 96 and 97 points, and none had recurrence of their snapping or pain. All 15 athletes returned to full participation in their sport at an average of 9 months after surgery.

CONCLUSION: A return to college, high school, and recreational sports can be expected after an arthroscopic release of the iliopsoas tendon.

PMID: 18697952 [PubMed - indexed for MEDLINE]

[Related citations](#)