Hip arthroscopy: a report on a cohort of orthopaedic surgeons

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ABSTRACT

Successful hip arthroscopy depends on proper patient selection and reasonable patient expectations. The purpose of this study is to report the results of hip arthroscopy in orthopaedic surgeons who represent the most informed cohort. This report is based on a retrospective review of prospectively collected data among 24 orthopaedic surgeons (1 bilateral). Follow-up averaged 48 months (range 12–120 months). They were all males with an average age of 45 years (range 30–64 years). All improved with an average of 18 points (preoperative 75; postoperative 93); although one underwent repeat arthroscopy and one was converted to total hip arthroplasty at 54 months. There were numerous diagnoses and procedures performed and one complication (acute coronary artery occlusion). They resumed seeing patients at an average of 1.6 weeks (range 2 days–4 weeks) and operating at an average of 3.1 weeks (range 6 days–8 weeks). This report spans three decades, thus representing a heterogeneous population in terms of diagnoses and treatment. Nonetheless, successful results are noted. As a cohort, orthopaedic surgeons possess the greatest insight into hip arthroscopy, but as patients, often they must modulate their expectations in order to match the understanding of the realities of the procedure.

INTRODUCTION

Like most orthopaedic surgical procedures, successful hip arthroscopy is significantly influenced by two factors: the patient selection process for the procedure, and the postoperative rehabilitation. Objectively patient selection includes evidence of pathology or clinical circumstances potentially amenable to arthroscopic intervention. Subjectively, this also includes an assessment of the patient’s expectations of the procedure [1]. Unreasonable expectations are likely to result in an unsuccessful outcome [2, 3]. Often part of the preoperative assessment may include modulating the patient’s expectations.

Ample evidence supports that the nature of supervised physical therapy following surgery can positively influence the results [4, 5]. It is generally believed that a reasonably performed surgical procedure can result in a successful outcome when guided by a properly structured post-operative rehabilitation programme. Conversely, the best operation may fail in the presence of poorly structured post-operative rehabilitation.

Orthopaedic surgeons represent the cohort most knowledgeable regarding musculoskeletal disorders and treatment; and thus most qualified for developing properly founded expectations of these procedures, and are most understanding of the post-operative rehabilitation. The purpose of this report is to share observations and outcomes among a cohort of orthopaedic surgeons.

METHODS

Since 1993, all patients undergoing hip arthroscopy are prospectively assessed utilizing a modified Harris hip score (mHHS) pre- and then post-operatively at 3, 12, 24, 60 and 120 months [6]. From this prospectively gathered database, 24 orthopaedic surgeons (including one bilateral case) were identified who had undergone arthroscopic surgery and had achieved minimum 1-year follow-up. This cohort represents the substance of this report. The data
obtained and presented in this article have been granted exemption status by the institutional review board.

The indication for arthroscopy was clinical findings of joint pathology amenable to arthroscopic intervention that had failed conservative treatment, which variously included activity modifications, rehabilitation, oral anti-inflammatory medications, and judicious use of intra-articular injections. All procedures were performed using a standard supine method that has been previously reported [7, 8]. Post-operative rehabilitation, begun on the day following surgery, was dictated by the pathology encountered and the procedure performed [9]. Simple debridement was allowed weight bearing as tolerated with crutches for 1 week. Femoroplasties were allowed to weight bear as tolerated with crutches for 4 weeks in order to regain protective muscle tone and strength. Labral repairs and refixations were maintained with 50% weight bearing for 4 weeks, limiting external rotation and maximal flexion; while microfractures were kept on a strict protected weight bearing status for 8 weeks. Structured rehabilitation, focusing on recover from surgery, was typically maintained for 12 weeks, followed by a functional progression to vigorous activities as dictated by the patient’s goals. In general, for orthopaedic surgeons, they were advised to return to a limited clinic schedule at 1 month, and a limited surgical schedule at 2 months.

Statistical analysis comparing the pre and post-operative scores was performed using a paired samples t-test.

**RESULTS**

Follow-up averaged 48 months (range 12–120 months). The average age was 45 years (range 30–64 years). They were all males with 19 right and 6 left hips. The average improvement was 18 points (preoperative 75; post-operative 93) which was statistically significant (P < 0.001); all improved with excellent or good results. Outcomes at various time intervals are detailed in Fig. 1.

There were numerous diagnoses (Table 1) and various procedures performed (Table 2).

One patient declined and was eventually converted to total hip arthroplasty at 54 months. One patient sustained a re-injury and underwent repeat arthroscopy at 11 months, again having a successful outcome (preoperative 85; postoperative 96 at 1 year). There was one complication: an acute myocardial infarction occurred in the recovery room necessitating coronary artery bypass surgery 4 days later. All returned to work. Excluding the patient whose recovery was altered by bypass surgery, they resumed patients at an average of 1.6 weeks (range 2 days–4 weeks); and resumed operating at an average of 3.1 weeks (range 6 days–8 weeks).

**DISCUSSION**

The observations shared here span three decades during which the understanding of hip disorders and technological advances in treatment have evolved substantially, thus representing a very heterogeneous study population in terms of diagnoses and procedures performed. Nonetheless, generally successful results have been recorded in terms of outcome measures and return to vocational activities. A 4% complication rate may be acceptable, but an acute myocardial infarction reflects that unanticipated, potentially
catastrophic problems can occur and thus a responsible approach in the decision on performing any surgical procedure is always paramount.

This report best illustrates two relevant observations. First, if understanding of the procedure is important to a successful outcome, then this is consistent with the data presented here as all surgeons were uniformly improved, even though one required repeat arthroscopy, one was converted to a total hip arthroplasty and one experienced a significant complication with a myocardial infarction. Second regards compliance with the post-operative rehabilitation process. Although the limitations outlined were not strict and were more recommendations to avoid setbacks and flare-ups, this group uniformly exceeded the general guidelines; returning to patient care and surgery in 40% or less of the recommended time frame. The only one who complied with the recommendations was a resident; the rest were practicing orthopaedic surgeons.

It is inherently evident that orthopaedic surgeons should be potentially the most knowledgeable regarding surgical procedures that are recommended to them. However, it is still best to approach them as patients and not colleagues. This is the only way to avoid falling into the trap of making alterations in what is deemed to be the optimal standard of care. Shortcuts, and or exceptions in standards of treatment can be fraught with numerous problems and ultimately expose the surgeon being treated to suboptimal care.

In anterior cruciate ligament reconstructive surgery, we learned that functional progression could exceed the time limits that would be predicted based on biological healing [10]. Understanding the limits and efficacy of these progressive rehabilitation strategies was largely gained through observations of patients who did not exhibit compliance with more cautious rehabilitation strategies [11]. Perhaps the same can be learned among hip arthroscopy patients. For example, rehabilitation following labral repair or refixation mostly revolves around protecting the repair site [9]. However, the labrum has proven to be a hardy structure, as the indications for revision arthroscopy usually include adhesions and incomplete correction of femoroacetabular impingement (FAI) and, less frequently, failure of a labral repair site [12, 13]. Thus, our rehabilitation strategies can probably be more progressive. However, as we strive to be more progressive, we simply do not want to find the point at which the failure rate starts to rise. We do not want to relearn the lessons of the shoulder where lack of post-operative precautions was implicated in failure rates of arthroscopic stabilization [14].

Successful hip arthroscopy necessitates that patient expectations match the realities of what can be accomplished with the procedure. As a cohort, orthopaedic surgeons possess the greatest insight into hip arthroscopy, but, as patients, often they must modulate their expectations to match their understanding of the realities of the procedure. Marginal compliance with the post-operative rehabilitation did not seem to compromise good results, although this population may be best prepared to understand their individual limits. Last, these experiences span three decades during which the understanding of hip disorders and technological advances in treatment have evolved substantially, thus representing a very heterogeneous study population in terms of diagnoses and treatment performed. Nonetheless, generally successful results have been recorded in terms of outcome measures and return to vocational activities.

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CONFLICT OF INTEREST STATEMENT
None declared.

REFERENCES
1. Byrd JWT. Hip arthroscopy. J Am Acad Orthop Surg 2006; 14: 433–44.
2. Noble PC, Conditt MA, Cook KF, et al. Patient expectations affect satisfaction with total knee arthroplasty. Clin Orthop Relat Res 2006; 452: 35–43.
3. Eisler T, Svensson O, Tengstrom A, et al. Patient expectation and satisfaction in revision total hip arthroplasty. J Arthroplasty 2002; 17: 457–62.
4. Aalderink KJ, Shaffer M, Amendola A. Rehabilitation following high tibial osteotomy. Clin Sports Med 2010; 29: 291–301.
5. Barber FA. Accelerated rehabilitation for meniscus repairs. Arthroscopy 1994; 10: 206–10.
6. Byrd JWT, Jones KS. Prospective analysis of hip arthroscopy with 10-year follow-up. Clin Orthop Relat Res 2010; 468: 741–6.
7. Byrd JWT. Hip arthroscopy utilizing the supine position, Arthroscopy 1994; 10: 275–80.
8. Byrd JWT. Routine arthroscopy and access: central and peripheral compartments, iliopsoas bursa, peritrochanteric, and subgluteal spaces. In: Byrd JWT (ed.). Operative Hip Arthroscopy 3rd edn. New York: Springer, 2013, 131–60.
9. Coplen EM, Voight ML. Rehabilitation of the hip. In: Byrd JWT (ed) Operative Hip Arthroscopy, 3rd edn. New York: Springer, 2013, 411–40.
10. Paulos L, Noyes FR, Grood E, et al. Knee rehabilitation after anterior cruciate ligament reconstruction and repair. *Am J Sports Med* 1981; 9: 140–9.
11. Shelbourne KD, Nitz P. Accelerated rehabilitation after anterior cruciate ligament reconstruction. *Am J Sports Med* 1990; 18: 292–9.
12. Byrd JWT, Jones KS. Primary repair of the acetabular labrum. *Arthroscopy* 2014; 30: 588–92.
13. Willimon SC, Briggs KK, Philippon MJ. Intra-articular adhesions following hip arthroscopy: a risk factor analysis. *Knee Surg Sports Traumatol Arthrosc* 2014; 22: 822–5.
14. Green MR, Christensen KP. Arthroscopic Bankart procedure: two- to five-year follow-up with clinical correlation to severity of glenoid labral lesion. *Am J Sports Med* 1995; 23: 276–81.