Hip Arthroscopy in a Pediatric Population: Outcomes following Revision Compared to a Matched Cohort of Primary Athroscopy with Minimum 2 Year Follow-up

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Introduction

- Pediatric patients have a high activity level and a longer span of life for which the hip joint needs to function
- Several studies have documented outcomes following primary hip arthroscopy in the pediatric population with excellent results
- Despite a dramatic increase in the numbers of primary and revision hip arthroscopy cases that are performed, there is limited literature focusing on the younger population of patients who undergo revision hip arthroscopy

Introduction

- The purpose of this study was to describe the reasons for and outcomes obtained with revision hip arthroscopy in patients 18 years of age and younger in comparison to a matched cohort of patients undergoing primary hip arthroscopy.
- Our hypothesis was that patients would present to revision surgery with different pathology and demonstrate similar outcomes to those patients undergoing primary hip arthroscopy.

Methods

- IRB approved
- Consecutive series From March 2005 to April 2013
- Inclusion Criteria
  - < 18 years old
  - Prior hip arthroscopy
  - No prior open hip surgery
  - Agreed to participate
- Primary cohort
  - Matched 2:1
  - Primary hip arthroscopy

METHODS

- Groups matched by age, gender and year of surgery
- Portion of cohort were part of a previous publication; however, new follow-up data was collected for this study
- Data collected included preoperative exam, imaging, operative details, prior operative reports and patient-reported outcome scores
- HOS – ADL was the primary outcome variable
- Power analysis showed a minimum sample of 38 revisions was needed

RESULTS

- 42 revision patients were matched with 84 primary patients
- Both groups had 81% females and average age of 16
- All females were >14 and all males were >16

	Primary Group	Revision Group	p-value
Center edge angle	33 (± 9)	32 (± 7)	0.448
Sharp's Angle	41 (± 5)	42 (± 5)	0.291
Alpha Angle	68 (± 14)	64 (± 20)	0.217
+ FABER Distance	55%	62%	0.445
+ Dial Test	88%	29%	0.001
+ Impingement Test	94%	84%	0.053
Flexion	116 (± 15)	115 (± 15)	0.539
Abduction	51 (± 14)	48 (± 15)	0.424
Adduction	24 (± 8)	24 (± 10)	0.515
Internal Rotation	40 (± 17)	39 (± 16)	0.928
External Rotation	44 (± 18)	45 (± 17)	0.504

RESULTS-REVISIONS

- 13 patients had 1 prior , 22 had 2 prior , 5 had 3 prior and 2 had 4 prior arthroscopies
- Mean time from last arthroscopy to revision was 18.7 months
- Adhesions were addressed in all patients
- 12 had most recent arthroscopy by senior author and 30 by other surgeons
- 11 patients had prior cam osteoplasty and/or rim trimming for pincer which required revision osteoplasty or rim trimming
- 20 patients had no treatment of FAI prior to revision

Procedures at Prior Arthroscopy in Revision Patients
3 Labral debridements
13 Labral repairs
8 labral reconstruction
15 cam osteoplasties
17 pincer rim trimings

RESULTS

- Subsequent hip arthroscopy was reported in 4/84(5%) in the primary group and 6/42 (14%) in the revision group.(p=0.162)
- Of the patients who did not have subsequent arthroscopy, mean follow-up was 43 ± 17 months in the revision group (range 24 to 79)
- Mean follow-up in the primary group was 45 ± 18 months (range 24 to 98)
- Patients who had 1 prior hip arthroscopy had higher postoperative mHHS (79.5 vs. 72), HOS-ADL (91.2 vs. 73.4, and HOS Sport (76 vs. 60).($p<0.05$) compared to >1 prior.
- No differences in mHHS, HOS-ADL, and HOS Sport between primary group and patients with 1 prior surgery

	Primary Group	Revision Group	p-value
HOS-ADL			
Preoperative	65.8 (± 17)	59.6 (± 17)	0.064
Postoperative	87.4 (± 15)	77.6 (± 19)	0.051
HOS-Sport			
Preoperative	46.3 (± 23)	37.6 (± 20)	0.047
Postoperative	79.9 (± 21)	64.8 (± 26)	0.008
mHHS			
Preoperative	57.5 (± 16)	55.3 (± 15)	0.497
Postoperative	84.2 (± 15)	74.3 (± 16)	0.008
Sf12 - PCS			
Preoperative	39.0 (± 9)	41.0 (± 11)	0.340
Postoperative	51.8 (± 8)	50.4 (± 7)	0.846
Patient satisfaction	9 (range 2 to 10)	8 (range 2 to 10)	
Tegner	7 (range 1 to 9)	6 (range 2 to 10)	

Conclusions

- Revision group showed significant improvement in all patient reported outcome scores
- Revisions has less improvement, lower satisfaction, and more subsequent hip arthroscopies than primary arthroscopy
- Residual deformity was not the most common finding as previously published.
- Patients who had 1 revision showed similar outcomes to primary arthroscopy patients

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Thank You!