Hip Arthroscopy in Patients Aged 40 Years and Older: Greater Success With Labral Reconstruction Compared With Labral Repair

Brian J. White, M.D., Julie Patterson, B.S., R.N., Alexandra M. Scoles, D.O., Ali T. Lilo, M.D., and Mackenzie M. Herzog, Ph.D., M.P.H.

Purpose: To assess the outcomes of complete, primary, arthroscopic hip labral reconstruction among patients aged 40 years and older compared with those who underwent primary labral repair and compared with patients aged 30 to 39 years who underwent complete, primary labral reconstruction. **Methods:** We recruited all patients who underwent arthroscopic labral reconstruction between March 2010 and June 2015 and were aged 30 to 65 years or who underwent arthroscopic labral repair between June 2009 and June 2015 and were aged 40 to 65 years. The modified Harris Hip Score (mHHS), Lower Extremity Function Score, and visual analog scale score for average pain were collected preoperatively and at minimum 2-year follow-up. Failure was defined as the need for revision ipsilateral hip surgery. The rate of conversion to total hip arthroplasty (a subset of failure) was assessed separately. **Results:** A total of 363 hips in 343 patients met the inclusion criteria. Follow-up was available for 312 hips (86.0%), and the average time to follow-up was 4.2 years (range, 2.0-8.5 years). After adjustment for differences in follow-up time between groups, failure was 3.29 times more likely for hips in the repair group aged 40 years and older than for hips in the reconstruction group aged 40 years and older (relative rate, 3.29; 95% confidence interval, 1.25-8.69; $P = .02$), and there was no difference in the failure rate for hips in the reconstruction group aged 40 years and older compared with hips in the reconstruction group aged 30 to 39 years (relative rate, 0.58; 95% confidence interval, 0.18-1.89; $P = .37$). The rate of conversion to total hip arthroplasty was not meaningfully different between the 3 groups. Among hips for which treatment did not fail, average improvement in the mHHS measured 35 points and both labral reconstruction groups saw a greater mHHS improvement than the labral repair group of patients aged 40 years and older ($P = .01$ and $P < .01$). **Conclusions:** Labral reconstruction led to a lower failure rate, greater average improvement in the mHHS, and equivalent postoperative patient-reported outcome scores compared with labral repair among patients aged 40 years and older in this study population, and the outcomes of labral reconstruction were similar between patients aged 40 years and older and those aged 30 to 39 years. Complete labral reconstruction may be particularly advantageous in patients aged 40 years and older. **Level of Evidence:** Level III, retrospective comparative study.

See commentary on page 2145

As the field of hip arthroscopy has matured, so too has the body of evidence surrounding efficacy and effectiveness. Although the evidence largely suggests positive results after arthroscopic treatment of femoroacetabular impingement (FAI) and acetabular labral pathology,[1] numerous studies reporting patient-reported outcomes (PROs) and failure rates after hip arthroscopy have identified age as a risk factor for poor

From Western Orthopaedics, Denver, Colorado, U.S.A. (B.J.W., A.M.S., A.T.L.); Center for Hip Preservation, Porter Adventist Hospital, Denver, Colorado, U.S.A. (B.J.W.); Centura Health Research Center, Denver, Colorado, U.S.A. (J.P.); Good Samaritan Regional Medical Center, Corvallis, Oregon, U.S.A. (A.M.S.); and Professional Research Institute for Sports Medicine, Chapel Hill, North Carolina, U.S.A. (M.M.H.).

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Address correspondence to Brian J. White, M.D., Western Orthopaedics, 1830 Franklin St, Ste 450, Denver, CO 80218-1217, U.S.A. E-mail: prismresearchconsulting@gmail.com

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outcomes.[2-9] Two recent systematic reviews focused specifically on patients older than 40 years found that arthroscopic labral repair led to improvements in PROs in this population; however, the reviews also noted that patients older than 40 years had a high rate of conversion to total hip arthroplasty (THA), reportedly as high as 30%, calling into question the appropriateness of hip arthroscopy as a treatment for hip pain and pathology in this population.[10,11]

Patients older than 40 years often present as a challenging population in which to treat hip pain because of long-term symptomatology prior to treatment and reduced tissue quality. Aside from the presence of cartilage degeneration, which has been shown to be a risk factor for failure in the setting of hip arthroscopy,[8,12,13] labral quality is a particular concern in the aging population. The acetabular labrum plays an important role in maintaining the synovial fluid seal of the hip joint, which influences hip stability and lubrication.[14,15] When the fluid seal is disrupted owing to a tear in the labrum, labral preservation procedures are often recommended to repair the labrum and restore the fluid seal. However, as the hip ages, labral degeneration and poor-quality tissue may lead to poor healing rates and make it difficult to effectively restore this fluid seal during arthroscopy.

Recently, complete labral reconstruction with allograft has been introduced as a technique for the treatment of labral pathology, and early results have suggested a reduced risk of revision hip surgery compared with labral repair.[16,17] This procedure allows the surgeon to reliably create a graft of the appropriate dimensions with a consistent size and does not rely on native tissue quality,[16,17] making it a potentially important treatment option for patients older than 40 years with labral pathology and degenerative labral tissue but a preserved joint space and minimal cartilage degeneration.

The purpose of this study was to assess the outcomes of complete, primary, arthroscopic hip labral reconstruction among patients aged 40 years and older compared with those who underwent primary labral repair and compared with patients aged 30 to 39 years who underwent complete, primary labral reconstruction. Our hypotheses were that (1) it would not be the age of the patient that affected outcomes after labral treatment but rather the quality of the labral tissue and the ability of the procedure to address labral pathology and (2) complete labral reconstruction would result in improved outcomes compared with labral repair in patients aged 40 years and older and similar outcomes to those in patients aged 30 to 39 years.

Methods

Patient Selection

We recruited all hips from the prospective hip registry of the lead author (B.J.W.) in patients who underwent arthroscopic labral reconstruction between March 2010 and June 2015 and were aged 30 to 65 years at the time of surgery or who underwent arthroscopic labral repair between June 2009 and June 2015 and were aged 40 to 65 years at the time of surgery. Hips were excluded if they underwent prior ipsilateral hip surgery, underwent concomitant Ganz osteotomy or had a preoperative center-edge angle of less than 25°, or had Outerbridge grade 3 or 4 lesions on either the femoral head or acetabulum at the time of surgery. This study was approved by the Catholic Health Initiatives Institute for Research and Innovation Institutional Review Board.

Procedure Selection and Surgical Technique

Labral pathology was diagnosed by clinical examination, including diagnostic injection and the anterior impingement maneuver, and magnetic resonance imaging. Patients were offered hip arthroscopy if they had recalcitrant hip pain with a preserved joint space (>2-3 mm) and nonoperative treatment had failed.

The surgical practice of the lead author (B.J.W.) changed between April 2011 and August 2013, as has been described previously.[16] During this time, an unacceptable failure rate among hips that underwent labral repair was observed, and the lead author transitioned to performing labral reconstruction. Hips that met the indications for hip arthroscopy from June 2009 through April 2011 were treated with arthroscopic labral repair, and those that met the indications for hip arthroscopy from April 2011 through June 2015 were treated with labral reconstruction with iliotibial band allograft. There was a crossover period in which labral repair and labral reconstruction with iliotibial allograft were used concurrently by the lead author. During that period, the indications for labral reconstruction were greater than 8 mm or less than 2 to 3 mm of labral tissue and an irreparable labral tear.

The surgical techniques for arthroscopic labral repair[18] and arthroscopic labral reconstruction with iliotibial band allograft[19] have been previously described. The anteroinferior joint was visualized by working in the peripheral compartment (Fig 1), which allowed for full labral resection while the hip capsule was preserved. The labral reconstruction technique used a freeze-dried or frozen iliotibial allograft that was overestimated by 1 cm to ensure the graft could span the defect of the removed native labrum for a complete nonsegmental reconstruction (Fig 2). Concomitant chondroplasty, removal of loose bodies, and procedures to address FAI were performed as indicated. Postoperative management has been previously described[16] and was the same for all hips regardless of whether they underwent labral reconstruction or repair.

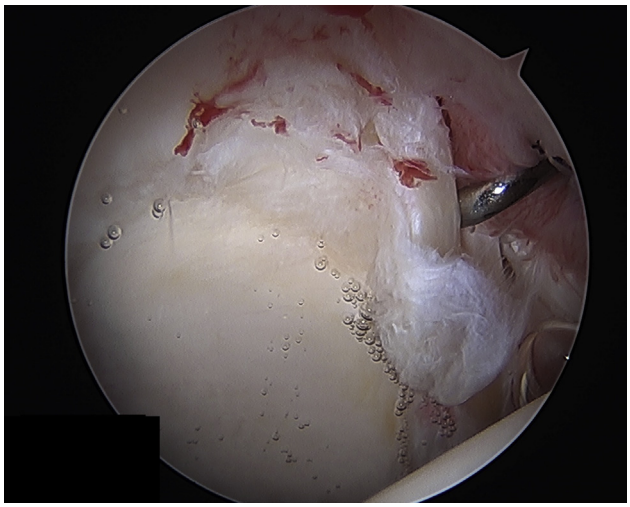

Fig 1. Arthroscopic view from an anterolateral portal in a right hip in a 56-year-old female patient showing an extensively torn and degenerative labrum.

Data Collection

Preoperative clinical examination, imaging, and surgical data were recorded prospectively by the lead author (B.J.W.), who was the lead surgeon in all cases. Preoperative imaging included standard anteroposterior pelvis and cross-table lateral radiographs, as well as magnetic resonance arthrography at 1.5 T or higher. The alpha angle, center-edge angle, and joint space measurements were recorded. Joint space measurements were recorded at the lateral edge of the joint and 2 cm medial.

PROs were collected preoperatively and postoperatively at the 3-, 6-, 9-, and 12-month follow-up visits, as well as annually thereafter, and included the modified Harris Hip Score (mHHS),[20] Lower Extremity Function Score (LEFS),[21] and visual analog scale (VAS) score for average pain at rest, average pain with daily activities, and average pain with athletic activities. Failure was defined as the need for revision ipsilateral hip surgery, and if treatment of the hip failed, PROs were no longer collected and the revision procedure was recorded in the database. Scores were only calculated if the PRO was completed in its entirety, and the patient was considered to have complete follow-up data if no more than 1 outcome score (mHHS, LEFS, or VAS score) was missing. If the patient had incomplete follow-up data or did not have a follow-up PRO form from a minimum of 2 years postoperatively, a research assistant reached out to the patient by telephone to attempt to obtain a recent PRO follow-up for the purposes of this study. Patient-rated overall satisfaction on a scale from 1 to 10 (on which 10 indicated extremely satisfied) was also collected at the most recent follow-up.

Statistical Analysis

The study population was composed of all hips that met the inclusion criteria, and 3 study groups were defined: labral reconstruction in patients aged 40 years and older, labral repair in patients aged 40 years and older, and labral reconstruction in patients aged 30 to 39 years. The primary study group of interest was the labral reconstruction group aged 40 years and older, whereas the labral repair group aged 40 years and older and the labral reconstruction group aged 30 to 39 years served as 2 separate control groups to assess the outcomes of interest. Results were compared separately between the labral reconstruction group aged 40 years and older and each control group. Adjustments for multiple comparisons were not made given that only 2 comparisons were performed and covariates were not adjusted for in the statistical model. For all descriptive statistics of continuous data, distributions were assessed to check for outliers. In cases in which the means and medians were similar, indicating the data were not skewed, means and standard deviations (SDs) were reported. When continuous PROs were assessed, data were left skewed with outlying scores at the lower end of the distribution, and median values were higher than mean values (indicating a better outcome). Notably, the observation of left-skewed data for PROs was noted consistently across the study groups, and results of comparisons between groups were similar whether means or medians were assessed. In these cases, means and SDs were reported, despite evidence of skew, because we believe they reflect more conservative estimates of the outcomes of interest. The proportion of patients who met the minimal clinically important difference for the mHHS, as defined by Chahal et al.,[22]

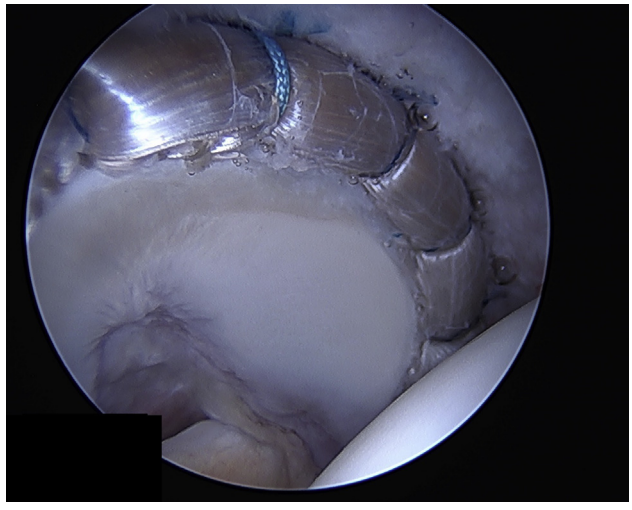

Fig 2. Arthroscopic view from an anterolateral portal in a right hip in a 48-year-old female patient showing complete labral reconstruction using a 12-cm frozen iliotibial band allograft and 11 anchors.

Table 1. Study Population Characteristics Stratified by Study Group

		Study Group		
	Total Study Population (N = 363)	Labral Reconstruction in Patients Aged ≥ 40 yr (n = 158)	Labral Repair in Patients Aged ≥ 40 yr (n = 93)	Labral Reconstruction in Patients Aged 30-39 yr (n = 112)
Age, yr	43.7 (7.6)	48.1 (5.4)	47.0 (4.7)	34.6 (2.9)
Female, n (%)	293 (80.7)	130 (82.3)	76 (81.7)	87 (77.7)
Preoperative imaging				
Center-edge angle, °	35.7 (5.4)	36.6 (5.6)	34.0 (5.3)	35.6 (4.7)
Alpha angle, °	65.2 (4.4)	65.5 (4.1)	64.4 (5.6)	65.5 (3.7)
Joint space, mm				
Lateral	4.6 (0.7)	4.5 (0.7)	4.7 (0.8)	4.6 (0.7)
Medial	4.3 (0.7)	4.3 (0.7)	4.4 (0.7)	4.3 (0.7)
Preoperative PRO				
mHHS	52.8 (14.9)	50.8 (15.3)	57.8 (12.6)	51.5 (15.2)
LEFS*	39.2 (16.4)	36.4 (17.2)	45.0 (14.4)	39.3 (15.7)
VAS pain score†	6.2 (1.8)	6.3 (1.8)	5.7 (1.7)	6.4 (1.9)

NOTE. Data are presented as mean (standard deviation) unless otherwise indicated.

LEFS, Lower Extremity Function Score; mHHS, modified Harris Hip Score; PRO, patient-reported outcome; VAS, visual analog scale.

*The preoperative LEFS was available for 348 hips (reconstruction group aged ≥ 40 years, n = 158; repair group aged ≥ 40 years, n = 79; and reconstruction group aged 30-39 years, n = 111).

†The preoperative VAS pain score was available for 366 hips (reconstruction group aged ≥ 40 years, n = 158; repair group aged ≥ 40 years, n = 93; and reconstruction group aged 30-39 years, n = 110).

was also reported. Counts and percentages were calculated for categorical data. Paired Student *t* tests were used to compare preoperative and postoperative PROs overall across the study population and within each group, and 2-tailed Student *t* tests were used to compare PROs between the primary study group and each control group independently. Log-Poisson regression with generalized estimating equations was used to compare failure rates between study groups while accounting for the differences in follow-up time across patients and groups and for repeated observations within subjects. Statistical significance was determined using a 95% significance level. Statistical analysis was conducted using SAS software (version 9.4; SAS Institute, Cary, NC).

Results

Overall, 1,060 hips in the registry met the initial inclusion criteria. After the exclusion of 201 hips that underwent prior ipsilateral surgery, 27 hips that underwent concomitant Ganz osteotomy or had a preoperative center-edge angle of less than 25°, and 469 hips that had Outerbridge grade 3 or 4 lesions on either the femoral head or acetabulum at the time of surgery, 363 hips in 343 unique patients met the inclusion criteria. Of the hips, 158 were included in the labral reconstruction group aged 40 years and older; 93, in the labral repair group aged 40 years and older; and 112, in the labral reconstruction group aged 30 to 39 years. The mean age at the time of surgery was 43.7 years (SD, 7.6 years), and the study population predominantly comprised women (293 hips, 80.7%) (Table 1). The mean age was slightly higher in hips in the labral reconstruction group aged 40 years and older (48.1 ± 5.4 years) than in hips in the labral repair group aged 40 years and older (47.0 ± 4.7 years). Preoperative PRO scores were lower in the labral reconstruction groups compared with the labral repair group aged 40 years and older (Table 1).

Follow-up was available for 312 hips (86.0%), and the average time to most recent follow-up was 4.2 years (range, 2.0-8.5 years) (Table 2). A significant improvement in all PROs from preoperatively to postoperatively was found both overall and in each group, and the average improvement in the mHHS was 35 points, the average improvement in the LEFS was 31 points, and the average reduction in the VAS pain score was 4 points (Table 2). Among hips for which treatment did not fail, 76% of hips in the labral reconstruction group aged 40 years and older, 83% of hips in the labral reconstruction group aged 30 to 39 years, and 71% of hips in the labral repair group aged 40 years and older met the minimal clinically important difference for the mHHS. The labral reconstruction group aged 40 years and older (mean difference,

Table 2. Change in Patient-Reported Outcome Scores From Preoperatively to Postoperatively Stratified by Study Group

Outcome Measure	Total Study Population	Study Group		
		Labral Reconstruction in Patients Aged ≥ 40 yr	Labral Repair in Patients Aged ≥ 40 yr	Labral Reconstruction in Patients Aged 30-39 yr
Follow-up obtained, n (%)	312 (86.0)	136 (86.1)	82 (88.2)	94 (83.9)
Follow-up time, yr	4.2 (2.0)	3.8 (1.6)	5.6 (2.4)	3.6 (1.3)
Failure, n (%)	35 (11.2)	10 (7.4)	17 (20.7)	8 (8.5)
Outcome scores among hips without failure (n = 280)				
mHHS				
Preoperative	53.3 (15.2)	51.1 (16.0)	60.0 (11.3)	51.5 (15.2)
Postoperative	88.5 (15.6)	87.7 (16.5)	88.3 (16.5)	89.7 (13.3)
Difference	35.2 (20.9)	36.6 (22.7)	28.3 (17.5)	38.3 (19.6)
P value	<.01	<.01	<.01	<.01
LEFS				
Preoperative	39.9 (16.8)	36.0 (18.0)	48.5 (12.2)	40.2 (15.5)
Postoperative	70.4 (13.2)	68.9 (14.4)	70.9 (13.4)	72.1 (11.9)
Difference	30.5 (19.3)	33.1 (21.1)	22.5 (16.5)	31.8 (17.0)
P value	<.01	<.01	<.01	<.01
VAS for pain				
Preoperative	6.1 (1.9)	6.3 (1.9)	5.5 (1.8)	6.4 (2.0)
Postoperative	2.1 (1.6)	2.2 (1.6)	2.0 (1.5)	2.2 (1.7)
Difference	−4.0 (2.4)	−4.2 (2.4)	−3.5 (2.2)	−4.0 (2.4)
P value	<.01	<.01	<.01	<.01

NOTE. Data are presented as mean (standard deviation) unless otherwise indicated.
LEFS, Lower Extremity Function Score; mHHS, modified Harris Hip Score; VAS, visual analog scale.

36.6 points) and labral reconstruction group aged 30 to 39 years (mean difference, 38.3 points) saw a greater average improvement in the mHHS than the labral repair group aged 40 years and older (mean difference, 28.3; $P = .01$ and $P < .01$, respectively) owing to the lower average preoperative scores noted (Table 2). However, postoperative scores were similar across all groups (Tables 2 and 3).

Among the hips with available follow-up, treatment failed in 35 (11.2%) (Tables 2 and 3). Hips in the labral repair group aged 40 years and older showed a failure rate twice as high as that of the labral reconstruction group aged 40 years and older (20.7% vs 7.4%) and the labral reconstruction group aged 30 to 39 years (20.7% vs 8.5%). Of those in which treatment failed, 18 (51%) underwent revision labral treatment, 4 (11%) underwent revision arthroscopy with no labral treatment, and 13 (37%) underwent THA (Table 3). After adjustment for the differences in follow-up time between groups, failure was 3.29 times more likely in hips in the repair group of patients aged 40 years and older than in hips in the reconstruction group aged 40 years and older (relative rate, 3.29; 95% confidence interval, 1.25-8.69; $P = .02$). No difference in the failure rate was found for hips in the reconstruction group aged 40 years and older compared with those in the reconstruction group aged 30 to 39 years after adjustment for differences in follow-up time (relative rate, 0.58; 95% confidence interval, 0.18-1.89; $P = .37$). Notably, the rate of conversion to THA was not different between the 3 groups (Table 3).

Discussion

In this study comparing the results of labral reconstruction and labral repair within a large group of patients aged 40 years and older, those who underwent labral repair were 3.29 times more likely to undergo revision hip arthroscopy than similarly aged patients and younger patients, aged 30 to 39 years, who underwent labral reconstruction. Among hips in which treatment did not fail, average improvement in the mHHS measured 35 points and both labral reconstruction groups saw a greater mHHS improvement than the labral repair group aged 40 years and older ($P = .01$ and $P < .01$). These results suggest that labral reconstruction among patients aged 40 years and older may lead to a lower failure rate and equivalent postoperative PRO scores compared with labral repair, despite lower preoperative PRO scores.

Contrary to 2 recent systematic reviews that noted that patients older than 40 years had a high rate of conversion to THA compared with patients younger than 40 years,[10,11] we observed no difference in rates of conversion to THA in a large group of patients 40 years and older who underwent hip arthroscopy when compared with patients aged 30 to 39 years. The absolute rates of conversion to THA observed in this study were also much lower, at 4.2% overall at an average of 4.0 years (range, 2-8 years) postoperatively, compared with up to 30% in the previous systematic reviews.[10,11] In addition, postoperative PROs showed significant improvement in pain and function in this study. The average mHHS postoperatively was 88.5, and the average pain score was 2.1

Table 3. Outcome Measures Stratified by Study Group

Outcome Measure	Study Group				*P* Value	
	Patients With Follow-up (n = 312)	Labral Reconstruction in Patients Aged ≥ 40 yr (n = 136)	Labral Repair in Patients Aged ≥ 40 yr (n = 82)	Labral Reconstruction in Patients Aged 30-39 yr (n = 94)	Labral Reconstructions vs Labral Repair in Patients Aged ≥ 40 yr	Labral Reconstruction in Patients Aged ≥ 40 yr vs Patients Aged 30-39 yr
Failure, n (%)	35 (11.2)	10 (7.4)	17 (20.7)	8 (8.5)	<.01	.37
Revision arthroscopy with no labral treatment	4 (0.8)	0 (0.0)	4 (4.3)	0 (0.0)	NA	NA
Revision labral treatment	18 (3.6)	5 (2.1)	10 (10.8)	3 (1.8)	.01	.88
Total hip arthroplasty	13 (4.2)	5 (3.7)	3 (3.7)	5 (5.3)	.86	.21
Postoperative outcome scores among hips without failure	n = 277	n = 126	n = 65	n = 86		
mHHS	88.5 (15.6)	87.7 (16.5)	88.3 (16.5)	89.7 (13.3)	.80	.31
LEFS	70.4 (13.2)	68.9 (14.4)	70.9 (13.4)	72.1 (11.9)	.38	.07
VAS for pain	2.1 (1.6)	2.2 (1.6)	2.0 (1.5)	2.2 (1.7)	.55	.76
Satisfaction	8.5 (2.4)	8.4 (2.4)	8.5 (2.4)	8.6 (2.4)	.85	.60

NOTE. Data are presented as mean (standard deviation) unless otherwise indicated.
LEFS, Lower Extremity Function Score; mHHS, modified Harris Hip Score; NA, not applicable; VAS, visual analog scale.

on a VAS for pain, with minimal variation in scores between the 3 study groups. These findings indicate that hip arthroscopy with labral preservation treatment can lead to an improvement in hip pain and function, regardless of age.

Aside from the 2 recent systematic reviews that assessed outcomes among patients aged 40 years and older, other recent studies on hip arthroscopy outcomes have suggested poor results in older patients. For example, 1 study compared PROs among patients by age and sex after arthroscopic treatment for FAI and concluded that patients aged 45 years and older, particularly those who were women, had worse outcomes than younger patients.[9] Another study assessed minimum 5-year outcomes after arthroscopic labral debridement or repair and noted a 27.7% rate of conversion to THA.[23] These findings are concerning because patients with a preserved joint space and no evidence of advanced cartilage pathology may be presented with few treatment options for hip pain for which conservative treatment has failed, when in fact labral preservation procedures may reduce pain and improve function. More rigorous research and evidence are needed to better understand the impact of various treatment options on outcomes among patients with recalcitrant hip pain; however, the results of our study suggest that arthroscopic labral reconstruction can lead to significant improvements in pain and function and a low revision rate among patients aged 40 years and older with labral pathology, a preserved joint space, and minimal or no cartilage pathology.

Labral reconstruction led to a lower revision rate than labral repair (7.4% vs 20.7%) among patients aged 40 years and older in this study population, and postoperative PRO scores were equivalent between labral reconstructions and labral repairs among those in whom treatment did not fail. It is interesting to note that the labral reconstruction group appeared to have slightly lower preoperative scores, on average, than the labral repair group, and the average improvement in PROs was higher in the labral reconstruction groups than in the labral repair group. These findings are consistent with those of other studies that have compared the results of labral reconstruction versus labral repair in other subgroups of patients.[17,24] Labral degeneration is particularly concerning in patients aged 40 years and older who present with a labral tear, as labral tissue that is not of sufficient size or quality may make it difficult to adequately address labral pathology and restore the fluid hip seal.[14,15] Insufficient labral tissue may also impact healing rates after labral repair. For these reasons, labral repair may not lead to sufficient pain reduction and improvement in function in certain cases, resulting in the patient opting for a revision procedure.

Labral reconstruction, on the other hand, allows for restoration of labral tissue through removal of the native tissue and complete reconstruction with graft tissue. In this study population, labral reconstructions were performed with allograft tissue, allowing the surgeon to create a labral graft of consistent size and quality to restore and maintain the fluid hip seal. Other studies have shown similar promising results of labral reconstruction, particularly among patients with challenging hip problems, including those in whom prior treatment has failed, those who have higher preoperative pain scores, and those with more preoperative intra-articular pathology, as well as older patients.[17,25] This procedure may be particularly advantageous in patients aged 40 years and older, who may be more likely to have degenerative or poor-quality labral tissue and significant preoperative intra-articular pathology.

Limitations

There are study limitations that must be considered. First, although we adjusted for the differences in follow-up time between treatment groups through use of a log-Poisson regression model, this model may not adequately control for the impact of calendar time—and, by association, the surgeon's learning curve and changes in operative technology—on the results. There may also be additional confounding variables that were not measured or accounted for in this analysis. Second, it is possible that the 51 hips for which follow-up was unavailable had different outcomes than the group for which postoperative outcomes were assessed. Third, the results of this analysis are only generalizable to patients with similar characteristics to the study population, which in this case includes patients aged 30 years and older with minimal or no cartilage pathology who underwent no prior hip procedures. Finally, the results of this study are likely surgeon specific and may be impacted by surgeon-specific preferences. A single high-volume hip specialist performed all surgical procedures included in this study. It is important to note that labral reconstruction, in particular, is technically demanding and requires proficiency in hip arthroscopy techniques. Results may not be generalizable to other patients or other surgeons.

Conclusions

Labral reconstruction led to a lower failure rate, greater average improvement in the mHHS, and equivalent postoperative PRO scores compared with labral repair among patients aged 40 years and older in this study, and the outcomes of labral reconstruction were similar between patients aged 40 years and older and patients aged 30 to 39 years. Complete labral reconstruction may be particularly advantageous in patients aged 40 years and older.

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