Arthroscopic Outcomes as a Function of Acetabular Coverage From a Large Hip Arthroscopy Study Group

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Purpose: To report comparative hip arthroscopic outcomes of patients with low (borderline dysplasia), normal, and high (global pincer femoroacetabular impingement [FAI]) lateral acetabular coverage. **Methods:** A retrospective analysis of prospectively collected data from a multicenter registry was performed. Primary hip arthroscopy patients were assigned to 1 of 3 groups based on preoperative lateral center-edge angle: borderline dysplasia ($\leq$25°), normal (25.1°-38.9°), and pincer ($\geq$39°). Repeated-measures analysis of variance compared preoperative with 2-year minimum postoperative International Hip Outcome Tool (iHOT-12) scores. Subsequent analysis of variance determined the effect of acetabular coverage on magnitude of change in scores. **Results:** Of 437 patients, the only statistical difference between groups was a lower prevalence of acetabuloplasty in the borderline dysplasia group ($P = .001$). A significant improvement in the preoperative to postoperative iHOT-12 scores for patients with normal acetabular coverage, acetabular undercoverage, and acetabular overcoverage was observed: $F(1, 339) = 311.06$; $P < .001$, with no statistical differences in preoperative ($P = .505$) and postoperative ($P < .488$) iHOT-12 scores when comparing the groups based on acetabular coverage. Mean iHOT-12 scores increased from 37.3 preoperatively to 68.7 postoperatively ($P < .001$) in the borderline dysplasia group, from 34.4 to 72 ($P < .001$) in the normal coverage group, and from 35.3 to 69.4 ($P < .001$) in the pincer group. These preoperative scores increased by 31.4, 37.8, and 34.1, respectively, with no effect for acetabular coverage on the magnitude of change from preoperative to postoperative iHOT-12 scores: $F(2,339) = 1.18$; $P = .310$. Ten patients (2.3%) underwent conversion arthroplasty, and 19 patients (4.4%) underwent revision arthroscopy with no significant effect of acetabular coverage on the incidence of revision or conversion surgery: χ^2 (6,433) = 11.535; $P = .073$. **Conclusions:** Lateral acetabular coverage did not influence outcomes from primary hip arthroscopy when performed in patients with low (borderline dysplasia), normal, and high (global pincer FAI) lateral center-edge angle. Borderline dysplasia and moderate global pincer FAI with no or minimal osteoarthritis do not compromise successful 2-year minimum outcomes or survivorship following primary hip arthroscopy when performed by experienced surgeons. **Level of Evidence:** Level III, retrospective therapeutic trial.

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Hip arthroscopy has become an accepted less invasive surgical treatment for primarily non-arthritic conditions including but not limited to labral tears, loose bodies, and femoroacetabular impingement (FAI). Less evidence-based information is available regarding outcomes for dysplasia or global pincer FAI. Although early studies considered these acetabular deformities to be relative contraindications for hip arthroscopic treatment,[1-5] emerging evidence is showing better outcomes, perhaps linked to specific surgical procedures. In the case of borderline to mild dysplasia, added capsular repair or plication may improve outcomes.[6-10] For global pincer FAI, even severe coxa profunda and protrusio acetabuli, hip arthroscopy with more pronounced acetabuloplasty, and, perhaps, labral reconstruction may yield clinical benefit.[11,12]

Review of the current orthopaedic literature (PUBMED, OVID, Google Scholar) has produced no prior studies investigating the outcomes for patients undergoing hip arthroscopy specifically as a function of lateral acetabular coverage of the femoral head across the spectrum of lateral center-edge angle (LCEA). The purpose of this study was to report comparative hip arthroscopic outcomes of patients with low (borderline dysplasia), normal, and high (global pincer FAI) lateral acetabular coverage. Our hypothesis is that patients with normal depth sockets will have statistically better outcomes than those patients with either shallow or deep sockets.

Methods

A retrospective analysis of prospectively obtained data from a multicenter hip arthroscopy registry was performed to determine the effect of acetabular coverage on 2-year minimum postoperative patient-reported outcomes. The self-reported outcome measure used for this study was the International Hip Outcome Tool (iHOT-12), which has established reliability and validity for patients undergoing hip arthroscopy.[13] Patients were enrolled in this study from the medical practices of 7 surgeons from 7 independent centers in the United States. Mutually agreed-upon data points were collected pertaining to deidentified patient demographic, anthropometric, and patient-reported outcome measures, as well as physical exam, diagnostic imaging, and intraoperative records that are routinely collected through the course of standard patient care. All participating surgeons perform >100 hip arthroscopy cases per annum and have been performing hip arthroscopy for a minimum of 8 years. With the exception of 2 surgeons predating formal hip arthroscopy fellowships, all surgeons have had fellowship training in hip arthroscopy. Patients enrolled in the multicenter hip arthroscopy registry from January 2014 to December of 2015 were eligible for 2-year postoperative evaluation and were sent the iHOT-12 questionnaire electronically. Responses were recorded within the database registry software, and surgeon investigators were blinded. Protection of patient privacy was preserved by assigning each patient a unique identifying number. No identifying personal health information of the patient was accessible to other staff or participating surgeons and researchers who entered or analyzed data from the registry. The inclusion criteria for this study were (1) index hip arthroscopy by one of the participating surgeons and centers during the aforementioned surgical enrollment period, (2) completion of preoperative and 2-year minimum postoperative iHOT-12 scores, (3) preoperative radiographic LCEA obtained from standardized anteroposterior (AP) pelvis projection,[14,15] and (4) ability to read and understand the English language. All surgeons agreed prior to the study period on the criteria for a true AP pelvis as defined by Tannast et al.[14,15] Radiographic LCEA was determined by the participating surgeon using the method described by Clohisy et al.,[16] whereby a line is drawn through the center of the femoral head, perpendicular to the transverse axis of the pelvis. A second line is drawn through the center of the femoral head, passing through the most superolateral point of the sclerotic weight-bearing zone of the acetabulum. The subtended angle is the LCEA.[16] LCEAs were measured by the participating surgeons from well-centered standing AP pelvic projections. Exclusion criteria were prior ipsilateral hip surgery(ies), bilateral hip surgeries, incomplete preoperative and/or 2-year minimum postoperative iHOT-12 questionnaires, non-documentation of preoperative LCEA, and/or inability to read/understand English language.

For analysis, patients were divided into 3 groups according to the amount of lateral acetabular coverage of the femoral head as determined by the LCEA recorded in the prospective data registry. Patients with dysplasia or acetabular undercoverage had LCEA $\leq$ 25.0°. A normal amount of coverage was an LCEA 25.1°-38.9°. Acetabular overcoverage included patients with LCEA $\geq$ 39.0°.

Statistical Methods

A commercially available statistical software package (SPSS 24; Armonk, NY) was used for all statistical analyses. Descriptive statistics (mean, 95% confidence interval) of age, body mass index, and alpha angle were compared with a one-way analysis of variance (ANOVA) between patient groups based on acetabular coverage. A χ^2 analysis compared categorical descriptors of the patient groups including gender, Tonnis arthritis grade, labral tear complexity, and surgical treatment of the labrum. A repeated-measures ANOVA was performed to compare preoperative to 2-year minimum postoperative patient-reported outcome measures (i.e., iHOT-12). A subsequent ANOVA was followed to determine the effect of lateral acetabular coverage on the magnitude of change in preoperative to postoperative patient-reported outcome measures. The effect of lateral acetabular coverage on the incidence of revision and arthroplasty conversion surgery was determined by χ^2 analysis.

Power analysis demonstrated an effect size of .22 in comparing the preop to postop iHOT-12 scores of 42 patients from a single center of our multicenter group. Based on the criteria established for borderline dysplasia, normal, and acetabular overcoverage used in this study, a minimum total sample size of 192 subjects was required for an effect size of .22 with a predetermined alpha set at 0.05 to yield a power of >0.80.

Results

There were a total of 493 subjects eligible to participate in the study, with 56 patients excluded (5 bilateral, 3 revisions, 48 missing IHOT 12 preop or 2-year postop data). The resultant 437 (88%) met the inclusion criteria and formed the substance of this study. Table 1 demonstrates the characteristics of the patients enrolled in the study according to lateral acetabular coverage. Patients averaged 34.2 to 37.4 years of age, 23.8 to 25.4 body mass index, and were 60.7% to 68.4% female for the respective groups. There were no statistical differences ($P > .05$) between the groups for age, body mass index, alpha angle, Tonnis grade, labral tear complexity, and surgical treatment of the labrum. Significant differences in LCEA, anterior center-edge angle (ACE), and acetabular index (AI) among the 3 groups were observed and correlate with expected radiographic parameters (e.g., borderline dysplasia with lowest mean LCEA, ACE, and AI; global pincer FAI with highest mean LCEA, ACE, and AI). The only other statistical difference between groups was found in the incidence of acetabuloplasty ($P = .001$), with a significantly lower acetabuloplasty rate in borderline dysplasia. There were no other statistical differences between groups for femoroplasty, chondroplasty, and microfracture chondroplasty ($P > .05$).

The repeated-measures ANOVA demonstrated a significant change in the preoperative to postoperative functional outcome scores for patients with normal acetabular coverage, acetabular undercoverage, and acetabular overcoverage: $F(1, 339) = 311.06$; $P < .001$. Figure 1 demonstrates the change in preoperative iHOT-12 scores compared with the scores recorded at least 2 years postoperatively. There were no statistical differences in preoperative ($P = .505$) and postoperative ($P < .488$) iHOT-12 scores when comparing the groups based on lateral acetabular coverage. Patients with normal lateral acetabular coverage increased their iHOT-12 scores from 34.4 to 72.2 ($P < .001$.) The patients with lateral acetabular overcoverage improved from an initial iHOT-12 score of 35.3 to a postoperative score of 69.4 ($P < .001$). Patients with lateral acetabular undercoverage increased from 37.3 to 68.7 ($P < .001$). A one-way ANOVA showed no effect for acetabular coverage on the magnitude of change from preoperative iHOT-12 scores to postoperative iHOT-12 scores: $F(2, 339) = 1.18$; $P = .310$. The preop scores increased by 34.1, 37.8, and 31.4, for the patients with overcoverage, normal coverage, and undercoverage, respectively (Table 2).

There were 30 patients (6.9%) that required revision surgery or conversion to a total hip arthroplasty. There were 10 subjects (2.3%) who went on to receive a total hip arthroplasty by minimum 2-year follow-up. Nineteen patients (4.4%) underwent revision arthroscopy. No patients underwent periacetabular osteotomy. Table 3 demonstrates the frequency of revision arthroscopy and conversion arthroplasty surgeries according to lateral acetabular coverage. The χ^2 analysis showed no significant effect of acetabular coverage on the incidence of revision or conversion surgery: χ^2 (6, n = 433) = 11.535; $P = .073$.

Discussion

The main finding of this large multicenter study is that lateral acetabular coverage did not influence outcomes from primary hip arthroscopy when performed in patients with low (borderline dysplasia, mean LCEA 23.5°), normal (mean LCEA 31.9°), and high (global pincer FAI, mean LCEA 43.9°) lateral acetabular coverage. Patients with borderline dysplasia and global pincer FAI with no or minimal osteoarthritis (Tonnis 0-1) had similar successful outcomes as those seen in patients with more normal acetabular coverage. Moreover, similarly low revision arthroscopy and total hip conversion arthroplasty rates were observed in all 3 groups. Our hypothesis was not supported by these findings.

The relatively high prevalence of patients with either borderline dysplasia (11.2%) or global pincer FAI (19.2%) in this study suggests that this group of surgeons viewed both conditions as viable indications for hip arthroscopy. The outcomes from this study support this position.

In contrast with recent studies reporting varying amounts of clinical benefit in borderline dysplasia and global pincer FAI, this study reports similar successful outcomes in both groups compared with the normal LCEA group. There have been previous, typically single-center uncontrolled outcome studies on borderline to mild dysplasia[6-10] and single-center controlled studies on global pincer FAI[11,12]; however, no previous study has investigated outcomes investigating the spectrum of low, normal, and high acetabular coverage. This study design enables comparison of both study

Table 1. Group Prevalence, Demographics, Preoperative and Intraoperative Findings, and Rendered Procedures

	Overcoverage (n = 84; 19.2%)		Normal (n = 304; 69.6%)		Undercoverage (n = 49; 11.2%)		
	Mean	(95% CI)	Mean	(95% CI)	Mean	(95% CI)	*P* Value
Age, years	37.4	(34.8-40.1)	34.2	(32.8-35.6)	34.6	(29.9-37.0)	.08
Body mass index	25.4	(24.5-26.4)	24.4	(23.2-25.8)	23.8	(22.2-25.4)	.602
Lateral center-edge angle, degrees	43.9	(42.9-44.8)	31.9	(31.6-32.3)	23.5	(23.0-24.0)	.001
Alpha angle, degrees	72.2	(68.5-75.9)	67.6	(64.9-70.2)	71.9	(65.2- 78.5)	.133
Acetabular index, degrees	1.4	(0.1-2.7)	5.0	(4.6-5.5)	9.3	(8.1-10.5)	<.001
Anterior center-edge angle, degrees	39.4	(36.4-42.4)	33.4	(32.1-34.8)	29.1	(24.1-34.3)	.001
	Percent	(95% CI)	Percent	(95% CI)	Percent	(95% CI)	
Gender, % female	60.70	(49.5-71.2)	68.40	(62.9-73.6)	67.30	(52.5-80.1)	.413
Tonnis grade							.429
0	92.2	(82.7-97.4)	93.1	(89.1-96.0)	88.6	(75.4-96.2)	
1	7.8	(75.0-93.3)	5.2	(2.7-8.8)	6.8	(1.4-18.7)	
2	0.0	(0.0-5.6)	1.2	(0.5-4.3)	0.9	(0.6-15.5)	
Labral tear complexity							.458
Mild	35.7	(21.6-51.9)	48.9	(40.1-57.7)	35.7	(18.8-59.4)	
Moderate	45.2	(29.9-61.3)	30.1	(22.4-38.6)	37.5	(18.8-59.4)	
Severe	11.9	(4.0-25.6)	12.0	(7.0-18.8)	20.8	(7.1-42.2)	
Labral treatment							.466
Debridement	3.6	(0.7-10.1)	3.0	(1.4-5.6)	0.0	(0.0-7.3)	
Repair	65.5	(54.3-75.5)	65.1	(59.5-70.5)	53.1	(38.3-67.5)	
Reconstruction	14.3	(7.6-23.6)	11.5	(0.1-2.4)	20.4	(10.2-34.3)	
Arthroscopic procedures							
Acetabuloplasty	66.7	(55.5-76.6)	49.7	(43.9-55.4)	34.7	(21.7-49.6)	.001
Femoroplasty	76.2	(65.7-84.8)	71.7	(66.3-76.7)	61.2	(46.2-74.8)	.179
Chondroplasty	53.6	(42.4-64.5)	43.1	(37.5-48.9)	44.9	(30.7-59.8)	.232
Microfracture	3.6	(0.7-10.1)	3.9	(2.1- 6.8)	2.0	(0.1-10.9)	.804
Capsule treatment							0.078
Release	0	(0.0-0.09)	1.70	(0.5-0.09)	5.60	(0.7-18.7)	
Closure	55.70	(43.3-67.6)	41.40	(35.1-48.0)	41.70	(25.6-59.2)	
Plication	44.30	(32.4-56.7)	56.90	(50.4-63.39)	52.80	(35.5-69.6)	

CI, confidence interval.

groups (dysplasia and global pincer) with the control group (normal LCEA) and with each other. As there were no statistically significant differences between the groups with regard to demographics, anthropometrics, preoperative (other than radiographic LCEA and AI), and intraoperative findings, this study enables sound statistical comparison between cohorts. Indeed, aside from the lower acetabuloplasty rate observed in the dysplasia group, there were no significant differences in the surgical procedures (labral and/or femoroplasty) between groups.

Previous studies have reported less successful outcomes from hip arthroscopy in dysplasia[1-3]; however emerging evidence suggests hip arthroscopy with concurrent capsular closure in the form of repair or plication may yield outcomes approaching those of nondysplastic hips when performed in patients with dysplasia of borderline severity.[6-10] A recent study reports that patients who underwent hip arthroscopic surgery for FAI with capsular plication experienced significant clinical improvements, with low rates of subsequent surgery, regardless of borderline dysplastic or normal coverage.[17] Compared with our study findings, that study had a similar mean LCEA in the dysplasia (23.5°) and normal coverage groups (32.5°) but a preponderance of female patients in the dysplasia group. This study reports statistically similar outcomes in a larger number of study patients from multiple centers across the United States without gender variation.

Capsular closure was performed in the large majority (95%) of borderline dysplastic patients. However, this group of surgeons typically performed capsular closure in the vast majority of all patients so there was no statistically significant increase of such closure observed in the low LCEA group. Furthermore, although one might anticipate the highest rate of capsular plications and lowest rate of releases (unrepaired capsulotomies) in the borderline dysplasia group, this was not observed. As there was no strict definition between closure (repair) versus plication, surgeon variation in personal definition may have affected these results. Also, a recent study[18] reports no survival or outcomes difference observed between patients with dysplasia

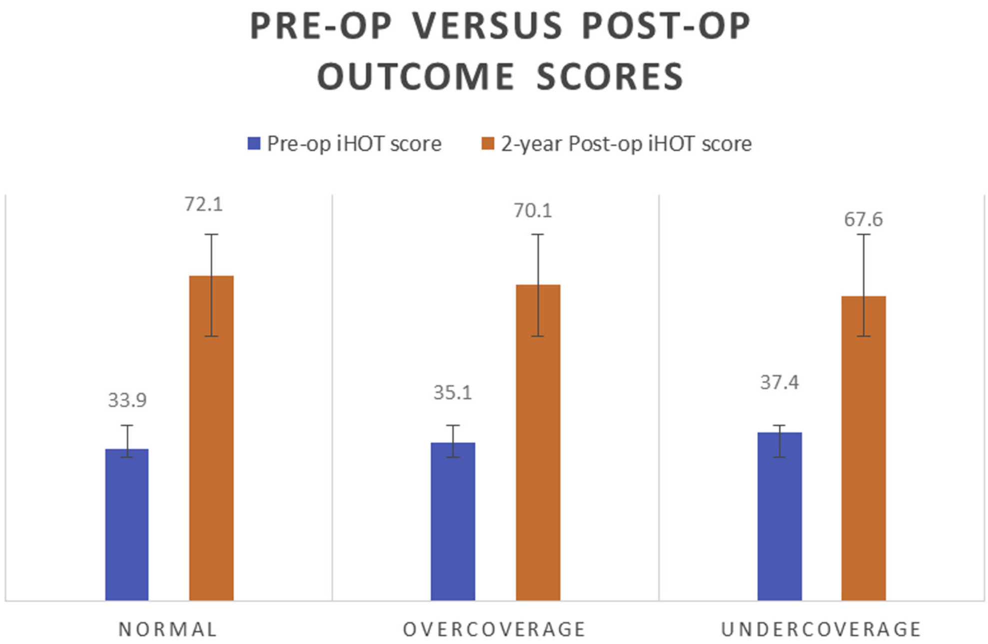

Fig 1. Graph showing pre- and postoperative International Hip Outcome Tool (iHOT-12) patient-reported outcome scores for low, normal, and high lateral acetabular coverage.

who did or did not have capsular repair ($P \geq .45$) or when comparing LCEA < 20° and LCEA 20° to 25° ($P \geq .60$), suggesting more research is needed to establish clarity on this subject. Moreover, there were no significant differences detected in any of the investigated demographic, anthropometric, preoperative, or intraoperative data other than a lower acetabuloplasty rate in the low LCEA group. The latter finding has been reported in a recent multicenter observational study on dysplasia.[19] It would intuitively seem reasonable that surgeons would minimize rim reduction in the setting of an already shallow hypovolemic socket as complications including gross hip instability may occur.[20,21]

Recently, it has been proposed that the borderline dysplastic hip may be primarily impingement based or instability based, which could, if confirmed, alter surgical decision-making.[22] Impingement-based borderline dysplasia might be best treated with open or arthroscopic surgery for FAI, whereas instability-based borderline dysplasia might be best treated with a bony procedure such as acetabular reorientation osteotomy or possibly endoscopic shelf acetabuloplasty.[23,24] The mean LCEA of 23.5° combined with the relatively normal AI (mean 9.3°) suggests that the participating surgeons were selecting patients for hip arthroscopy with mild severity even within the borderline dysplasia category. Although it has been suggested that no single radiographic measure (e.g., LCEA, AI) can reliably determine whether a given borderline dysplastic hip is primarily stable versus unstable, the combination of the LCEA and normal AI in this borderline dysplasia study group may suggest a more stable subset, which in turn, may have contributed to the more successful outcomes compared to previous studies and the absence of any secondary periacetabular osteotomy surgery. The FEAR index has been recently introduced as a possible discriminator between stable and unstable borderline dysplasia hips[22]; however, this has not been substantiated.

Global pincer FAI has been defined as coxa profunda, protrusio acetabuli, and/or LCEA ≥ 39°.[25] Few studies with divergent outcomes have been published on outcomes of global pincer FAI, with one study reporting arthroscopic outcomes similar to those of focal pincer FAI (which was defined as radiographic crossover sign in a hip with normal LCEA between 25° and 39°)[11] and another study reporting significant clinical benefit in patients with lateral overcoverage (defined as LCEA ≥ 40°) and coxa profunda but of lesser magnitude and with a higher arthroplasty conversion rate than a matched group with normal LCEA.[12] The findings of this study support global pincer FAI of moderate severity (mean LCEA of 43.9°) as an indication for hip arthroscopy. A recent study reported successful arthroscopic outcomes in patients with global pincer

Table 2. Group Outcomes Based on International Hip Outcome Tool (iHOT-12) Scores

Acetabular Coverage	Preop iHOT Score	2-Year Postop iHOT Score	Difference	P Value
Normal	34.4	72.2	37.8	<.001
Overcoverage	35.3	69.4	34.1	<.001
Undercoverage	37.3	68.7	31.4	<.001
Total	34.9	71.3	36.4	<.001
P value	.505	.488		

Table 3. Re-operations

	Overcoverage		Normal		Undercoverage		Total	
	n	%	n	%	n	%	N	%
Total hip arthroplasty	6	1.4	3	0.7	1	0.2	10	2.3
Revision arthroscopy	3	0.7	14	3.2	2	0.5	19	4.4

FAI, although the severity of deformity was milder with mean LCEA 39.9°.[26] The most extreme forms of global pincer FAI such as acetabuli protrusio (defined as LCEA ≥ 40° with medialization of the femoral head in relation to the ilioischial line)[25] or coxa profunda with LCEAs as high as 70° may or may not have similar arthroscopic outcomes. In general, deep sockets introduce technical challenges such as difficulty with hip distractibility, central compartment access, and navigation and monitoring of more generous rim trimming both in depth and perimeter, often with labral reconstruction.[27] Although the severity of labral tear and the incidence of labral reconstruction were somewhat higher in the global pincer FAI group, statistical significance was not reached. One case report on the arthroscopic treatment of bilateral acetabuli protusio[28] reported successful outcomes using subtotal acetabuloplasty from posterior to anterior, while a small case series reported successful outcomes with acetabuloplasty limited to the superior and anterior rim.[29] A series of patients undergoing open treatment of protrusio acetabuli found better 10-year outcomes and survivorship when rim trimming included the posterior acetabulum.[30] Although beyond the scope of this study, further investigation is merited as to longer term arthroscopic outcomes in global pincer FAI in general, severe global pincer FAI in particular, and the role (if any) of posterior rim trimming.

Although acetabular coverage did not influence outcomes from primary hip arthroscopy when performed in patients with low (borderline dysplasia), normal, and high (global pincer FAI) LCEA in this study, one should not conclude that acetabular coverage does not influence surgical outcomes; there were no patients with either moderate to severe dysplasia and few with severe global pincer FAI in this study. The lowest LCEA hip was 17.7°, and the highest LCEA was 60°. Subset analysis of patients with mild (LCEA 15°-19°) versus borderline dysplasia (LCEA 20°-25°) could not be performed with adequate statistical rigor because of the few patients in the former subset. Similarly, patients with more severe global pincer FAI (e.g., LCEA > 50°) could not be compared with those with less overcoverage. Both of these topics are of high interest, and our study group plans to investigate them as more patients achieve 2-year minimum outcomes. A similar preponderance of no or minimal radiographic osteoarthritis (Tonnis 0 or 1) across groups supports the application of these criteria. There were too few hips with moderate (Tonnis 2) osteoarthritis in this study to draw valid conclusions as to its effect on outcomes.

Despite the multicenter design with a large number of study patients in a prospectively collected database, the study findings may or may not be generalizable to the orthopaedic community at large. Surgical outcomes reflect surgical experience, evolving techniques, and refined patient selection criteria, or perhaps a combination thereof. All contributing surgeons are experienced with high-volume hip arthroscopy practices. Patient selection, at least in the borderline dysplasia group, appeared to be relatively conservative and appropriate. Although a recent prospective study reported successful hip arthroscopy outcomes in the community (nontertiary referral) setting,[31] it is unknown whether similar successful outcomes across a similar spectrum of acetabular coverage would occur in the community setting.

Limitations

This study has several limitations. The LCEA is the most commonly used radiographic measure of lateral acetabular coverage[32] with a high degree of intra- and interobserver reliability.[33-35] The intraclass correlation coefficient for interobserver correlation is 0.960 and 0.957 preoperatively.[33] Despite this, we acknowledge that lateral acetabular coverage measures may be prone to variation due to variation in pelvic tilt and secondary morphologic changes in the labrum and bony acetabulum as well as femoral head asphericity, compromising both radiographic and computed tomography (CT) measurements. We minimized this variation by using standardized standing AP pelvis projections[36] and obtaining measurements by experienced surgeons[37,38] using standardized techniques[14-16,36] rather than radiology reports or other sources. This study also reported AI as a measure of sourcil inclination and ACE as a measure of anterior coverage, but other radiographic measures (e.g., Sharps angle, extrusion index, FEAR index) were not used, which is a limitation. CT imaging was not used and may have improved acetabular volumetric assessment. Albeit a limitation, most surgeons determine acetabular coverage based on radiographic, not CT, imaging,[30] none of the participating surgeons use routine preoperative CT scanning, and prior published studies have used purely radiographic projections,[1-3,6,7,9-12,14-17,19,25-29,31] lending practical utility to the study findings. Moreover, a recent study found measured values of the LCEA were 2.1° larger on CT compared with x-ray and concluded that better thresholds for CT were required.[39] As this study focus was on lateral acetabular coverage, femoral and acetabular version were not measured, which is a limitation and area for future investigation. Another limitation is the lack of data regarding ligamentous laxity (e.g., Beighton scores) and the strict definition of capsular closure versus capsular plication. Moreover, quantification of the amount of acetabuloplasty and femoroplasty was not assessed and is a limitation.

Conclusions

Lateral acetabular coverage did not influence outcomes from primary hip arthroscopy when performed in patients with low (borderline dysplasia), normal, and high (global pincer FAI) LCEA. Borderline dysplasia and moderate global pincer FAI with no or minimal osteoarthritis do not compromise successful 2-year minimum outcomes or survivorship following primary hip arthroscopy when performed by experienced surgeons.

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