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Paper #221

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

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Summary:
This large multicenter study reports similar successful 2+ year outcomes and joint survivorship in patients with low (borderline dysplasia), normal, and high (global pincer FAI) lateral acetabular coverage

Abstract:

Purpose

To report the effect of acetabular coverage on 2-year minimum post-operative patient-reported outcomes following hip arthroscopy. Hypothesis: Outcomes from hip arthroscopy will be poorer in patients with borderline dysplasia and global pincer femoroacetabular impingement than in hips with normal lateral acetabular coverage.

Methods

A retrospective analysis of prospectively-collected data from a multi-center registry was performed. Primary hip arthroscopy patients were assigned to one of three groups based on preoperative lateral center-edge angle (LCEA): dysplasia (=25°), normal (25.1-38.9°), and pincer (=39°). Repeated measures ANOVA compared pre-operative to 2-year minimum post-operative iHOT-12 scores. Subsequent ANOVA determined the effect of acetabular coverage on magnitude of change in scores.

Results

Of 437 enrolled patients, the only statistical difference between groups was lower prevalence of acetabuloplasty in the dysplasia group (p=0.001). A significant improvement in the pre-operative to post-operative iHOT-12 scores for patients with normal acetabular coverage, acetabular undercoverage, and acetabular overcoverage was observed; $F(1, 339)=311.06$; $p<0.001$, with no statistical differences in pre-operative ($p=0.505$) and post-operative ($p<0.488$) iHOT-12 scores when comparing the groups based on acetabular coverage. Mean iHOT-12 scores increased from 37.3 pre-operatively to 68.7 postoperatively, $p<0.001$, in the dysplasia group, from 34.4 to 72, $p<0.001$, in the normal coverage group, and from 35.3 to 69.4, $p<0.001$, in the pincer group. These pre-operative scores increased by 31.4, 37.8, and 34.1, respectively, with no effect for acetabular coverage on the magnitude of change from pre-operative to post-operative iHOT-12 scores, $F(2, 339 =1.18$; $p=0.310$.
10 subjects (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, $X2 (6, N=433)=11.535$,

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P = 0.073.

Discussion/Conclusion: 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. The initial hypothesis was not supported. The findings of this large multicenter study support the conclusion that borderline dysplasia and global pincer FAI with no or minimal osteoarthritis does not compromise successful 2-year minimum outcomes or joint survivorship following primary hip arthroscopy performed by experienced surgeons.

Level of Evidence: 3