

Periacetabular Osteotomy: A Case Series of More than 500 Cases with Subanalysis based on Patient Age at Surgery

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INTRODUCTION: The purpose of this study is to report outcomes of a unique periacetabular osteotomy (PAO) technique for hip dysplasia developed at our institution.

METHODS:

This was a retrospective, single-surgeon case series of prospectively collected data on all primary PAOs performed by the senior surgeon between April 2015 and April 2023. The technique has previously been described in the literature. This technique provides direct visualization of the sciatic nerve during the ischial osteotomy and allows for immediate weight-bearing postoperatively. All patients underwent hip arthroscopy for treatment of intra-articular pathology and cam-type femoroacetabular impingement 3-10 days prior to PAO. Some patients also underwent derotational femoral osteotomy (DFO) for treatment of femoral torsion abnormalities. Revision PAOs or cases with concomitant hamstring or gluteus repair were excluded. Follow up occurred at 6 weeks; 3 and 6 months; and 1, 2, and 5 years postoperatively. Patient-reported outcomes (PROs) included the Non-Arthritic Hip Score (NAHS) and the International Hip Outcome Tool (iHOT-12). A subanalysis was performed to compare 2-year PROs between three groups of patients based on age at the time of surgery: 13-29 years, 30-39 years, and > 40 years.

RESULTS:

A total of 511 hips underwent primary PAO during the study period. The mean age at the time of surgery was 31 years (range, 13 to 61 years). Females accounted for 90% of hips included in this study. A concomitant DFO was performed in 25 hips (4.9%). The mean NAHS improved from 58.7 preoperatively to 85.9 at 2-year follow up ($p < 0.0001$) and 83.4 at 5-year follow up ($p < 0.0001$). The mean iHOT-12 improved from 41.0 preoperatively to 77.5 at 2-year follow up ($p < 0.0001$) and 72.7 at 5-year follow up ($p < 0.0001$). No significant differences were found in postoperative NAHS ($p = 0.82$) or iHOT-12 scores ($p = 0.73$) between age groups.

DISCUSSION AND CONCLUSION:

Periacetabular osteotomy enables corrective realignment of symptomatic acetabular dysplasia with good outcomes up to 5 years postoperatively. Careful patient selection can result in good outcomes regardless of patient age at the time of surgery.