Paper #33

PERIACETABULAR OSTEOTOMY TO UNCOVER THE HIP: UNCOMMON VARIATIONS ON A COMMON PROCEDURE

Stephanie Pun¹, Michael Merz², Garrett Bowen²,
Andreas Hingsammer³, Yi-Meng Yen⁴, Young Jo Kim²,
Michael B. Millis²

¹Stanford, CA, USA, ²Boston Children's Hospital, Boston, MA, USA, ³Zurich, Switzerland, ⁴Wellesley, MA, USA

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Summary: Reverse PAO is a technically challenging procedure that provides clinical and radiographic improvement in patients with symptomatic FAI due to acetabular over-coverage.

Purpose: Periacetabular osteotomy (PAO) is a versatile acetabular reorienting procedure that is most commonly used to provide greater femoral head coverage in acetabular dysplasia. However, PAO can also be used to reorient the acetabulum in the opposite direction to treat femoroacetabular impingement (FAI) due to acetabular over-coverage. We describe the indications, surgical technique, and early results of reverse PAO to reduce femoral head coverage in symptomatic hips with FAI due to acetabular over-coverage.

Methods: IRB approval was obtained to retrospectively review cases of symptomatic acetabular over-coverage treated with reverse PAO and that had a minimum of two years follow-up. All hips had atypical intraoperative positioning of the acetabular fragment to uncover the lateral and anterior aspects of the femoral head, with or without anteverting the acetabulum. Prospectively collected pre- and post-operative demographics, WOMAC scores, Modified Harris Hip Score (MHHS), and radiographic measurements consisting of the lateral center edge angle (LCEA), Tönnis angle (TA), and anterior center edge angle (ACEA) were compared using student's t-test.

Results: Between 2004 and 2015, 31 hips (18 left, 13 right) in 26 patients (18 female, 8 male) met the inclusion criteria. Average age at the time of surgery was 19.4 years. Average length of follow-up was 30.4 months. After reverse PAO, femoral head coverage significantly decreased (LCEA 41.7° to 35.3°, $p < .001$; TA -7.4° to -3.7°, $p < .01$; ACEA 44.0° to 35.3°, $p < .0001$). Patients experienced improved post-operative pain, with decreases in WOMAC pain score (from 8.8 to 4.2, $p < .001$) and WOMAC stiffness score (from 3.5 to 1.9, $p < .001$). Patients also experienced improvements in function and quality of life with improvements in WOMAC function score (from 24.8 to 10.0, $p < .001$) and MHHS (from 60.8 to 83.2, $p < .0001$).

Conclusion: Reverse PAO is a technically challenging procedure that provides clinical and radiographic improvement in patients with symptomatic FAI due to acetabular over-coverage.

Significance: Reverse PAO is an especially useful and appropriate alternative to arthroscopic acetabular rim-trim in complex FAI pathomorphologies.