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Long-Term Results following the Bernese Periacetabular Osteotomy

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Introduction: The Bernese periacetabular osteotomy (PAO) continues to be a commonly performed nonarthroplasty option to treat symptomatic developmental hip dysplasia (DDH) and there are few long-term follow up studies evaluating results following PAO.

Methods: One hundred eighty-three dysplastic hips (157 patients) underwent PAO between January 1994 and August 2008 by two surgeons. Of those, 45 hips (41 patients) were lost to follow up. The remaining 138 hips (in 117 patients) were retrospectively reviewed at an average of 10.2 years (range 6.9 to 19.7). Hips were evaluated using the UCLA Score, Modified Harris Hip Score (MHHS), and Western Ontario and McMaster Universities Osteoarthritis Index (WOMAC). Both preoperative and long-term follow up radiographs were reviewed.

Results: One hundred twenty-five hips (91%) remained preserved and did not undergo total hip arthroplasty (THA) or revision PAO. Ten hips (7%) underwent THA at an average 6.86 years (range 1.3 to 16.4) from PAO and three hips (2%) had a revision PAO at average 3.4 years. Kaplan-Meier analysis with THA as the end point revealed a survival rate (95% CI) of 97% (94-99%) at 5 years, 93% (87-97%) at 10 years, and 89% (79-96%) at 15 years. The MHHS improved 21.5 points (from 65 to 85.5, p<0.001), and the UCLA Score improved 1.1 points (from 6.3 to 7.34, p<0.05). All WOMAC scores demonstrated clinically significant improvement after the PAO. Comparison of preoperative and follow-up radiographs demonstrated an average improvement of 21.2° (mean 7.5° to 30.3°, p <0.0001) in the lateral center-edge angle, 20.7° (mean 7.2° to 30.3°, p<0.0001) in the anterior center-edge angle, and 17.8° (mean 23° to 4.2°, p< 0.0001) in Tönnis angle.

Conclusions: In this long-term follow-up study, the majority of hips that underwent PAO have minimal to no pain, are active, and have positive outcomes at an average of 10.2 years (range 6.9 to 19.7) postoperatively.

