

Long-Term Outcomes of Total Hip Arthroplasty with Subtrochanteric Osteotomy for Crowe IV Dysplasia

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INTRODUCTION: Cementless total hip arthroplasty (THA) with subtrochanteric shortening osteotomy (SSO) is a well-established treatment for Crowe IV developmental dysplasia of the hip (DDH). However, series to date are limited by mid-term follow-up. The purpose of this study was to evaluate the long-term implant survivorship, radiographic results, and clinical outcomes of our previously published series.

METHODS: We retrospectively reviewed 28 hips (22 patients) that underwent cementless THA with SSO for Crowe IV DDH between 1992 – 2005 using our institutional total joint registry. The mean age at the time of THA was 48 years, 77% were female and the mean BMI was 27 kg/m². Since the original study, 5 patients died including a patient with bilateral THAs, 5 hips were revised, 2 withdrew from the study, and 1 was lost to follow-up. As such, 14 hips were available for follow-up at a mean of 18 years (range, 12 – 28 years). Kaplan-Meier survivorship curves were calculated, radiographs were reviewed, and clinical outcomes were evaluated via Harris hip score (HHS).

RESULTS: Survivorship free of any revision was 79% at 20 years. There were 5 revisions including 2 for aseptic loosening of the femoral stem at 10 months and 2 years, 1 for stem fracture at 1.8 years, 1 for aseptic loosening of the acetabular component at 1 year, and 1 for polyethylene liner dissociation at 6 years. There were no new revisions or reoperations after 6 years. All unrevised hips were radiographically well-fixed at most recent follow-up. The mean HHS was 73 at a mean of 15 years, which decreased from 86 at 10 years ($p < 0.001$).

DISCUSSION AND CONCLUSION: Cementless THA with SSO for Crowe IV DDH provides excellent implant survivorship with durable fixation and reliable clinical outcomes at long-term follow-up. In this series, femoral aseptic loosening was rare.