

Early Outcomes of Monoblock Conical Stems in Complex Primary THA

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INTRODUCTION:

Conical fluted stems are routinely used in revision total hip arthroplasty (THA) to address metaphyseal bone loss. In complex primary THA cases, they can provide advantages in correcting deformities and managing femoral version. While most published series focus on modular designs, this study examines the use of monoblock conical stems in challenging primary THA cases. Monoblock stems eliminate the risk of modular junction failure and taper corrosion. Our objective is to evaluate outcomes following primary THA using a monoblock conical stem.

METHODS:

A retrospective review was conducted of 25 patients who underwent primary THA with a monoblock conical fluted stem from 2018 to 2023. Patient demographics, surgical variables, postoperative radiographs, and clinical outcomes were analyzed. Primary outcomes included implant survivorship, reoperation rate, and infection rate.

RESULTS:

27 hips in 25 patients (mean age 55.4 years, 51.9% female, mean BMI 31.6) were analyzed. All procedures were performed using a posterior approach, with 19 cases (70.4%) under spinal anesthesia. Adjunctive procedures were required in 12 cases (44.4%), including 9 conversion THAs, 1 adductor tenotomy, 1 trochanteric derotational osteotomy, and 1 extended trochanteric osteotomy. One intraoperative complication (3.7%) occurred, a non-displaced femoral shaft fracture which was managed with a lateral locking plate. At a mean follow-up of 2.3 years, implant survivorship was 100% with no revisions. No postoperative infections or wound healing complications were observed. One patient with spastic diplegia experienced dislocation (3.7%) of a dual mobility implant, which was exchanged to a constrained liner. There was no radiographic lucency or implant loosening at final follow-up; one stem subsided by 1.6mm and was subsequently stable.

DISCUSSION AND CONCLUSION:

Early clinical and radiographic outcomes indicate that monoblock conical fluted stems are a viable option for complex primary THA without the long-term risks of taper corrosion and modular junction failure.