

Monoblock Fluted Tapered Stems in Revision Total Hip Arthroplasty: Favorable Short-Term Outcomes

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INTRODUCTION:

Modular fluted tapered stems have proven successful in revision total hip arthroplasties (THAs) across a wide spectrum of operative indications. However, concerns remain for rare complications at the modular junction. Monoblock fluted tapered stems achieve femoral diaphyseal fixation in similar fashion, although reports of subsidence in earlier series has led to some concerns. The purpose of this study was to evaluate implant survivorship, radiographic outcomes (loosening, subsidence), and clinical outcomes of patients undergoing revision THA with a monoblock fluted tapered stem at minimum two-year follow-up.

METHODS:

Between 2015 and 2020, 116 consecutive patients undergoing revision THA with a Wagner SL stem (Zimmer-Biomet, Warsaw, IN) were identified using our institutional total joint registry. Mean patient age and BMI were 67 years and 32 kg/m², respectively, and 37% of patients were female. Preoperative femoral bone deficiency was classified as Type II (63%) or Type III (24%) in the majority of cases. Implant survivorship was assessed using the Kaplan-Meier method. Radiographic and clinical parameters were measured preoperatively and postoperatively at routine intervals. Mean follow-up was 3.5 years.

RESULTS: The five-year survivorship free of aseptic loosening of the stem was 100%, free of stem revision was 96%, free of any revision was 93%, and free of any reoperation was 86%. Indications for re-revision included infection (3, and all had prior infection), dislocation (3), and acetabular component loosening (1). There were no cases with radiographic evidence of femoral component loosening. Mean stem subsidence was 2mm at most recent follow-up, with 6 cases of stem subsidence \geq 1cm. Mean Harris hip scores improved from 61 preoperatively to 84 at 5-year follow up.

DISCUSSION AND CONCLUSION: Monoblock fluted tapered stems demonstrated good short-term survivorship free of revision with excellent radiographic and clinical results in selected cases of revision THAs. Stem subsidence was minimal using contemporary surgical techniques.