Early Clinical Results of Mobile Bearing Revision TKA: A Multicenter Study

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Introduction: Mechanisms for failed revision total knee arthroplasty (TKA) include aseptic loosening and post damage. Although mobile bearing (MB) revision TKA components can theoretically decrease stress to the tibial baseplate and post, bearing complications are concerning. The purpose of this study is to evaluate the clinical outcomes and bearing complications of MB revisions.

Material and Methods: We retrospectively reviewed 316 consecutive MB revision TKAs performed at 2 centers between 2006 and 2010. There were 183 females and 133 males with an average age of 68 years (41- 94 years). Preoperative diagnosis for revision TKA included aseptic loosening (95), instability (92), infection (52), failed UKA (25), arthrofibrosis (24), fracture (6), malposition (6), osteolysis (6), poly wear (6), mal-alignment (3), and arthrotomy dehiscence (1). Patients were clinically evaluated using the KSS scores for pain and function, bearing complications were recorded, and radiographs were reviewed for signs of loosening and osteolysis.

Results: Average follow-up was 32 months (24 – 72 months). Six patients were lost to follow-up. Prior to surgery, the KSS pain and function scores averaged 45.3 points (12-71) and 50 points (5-80). Following surgery, the mean KSS scores for pain and function was 83 points (34-100) ($p<0.001$) and 62 points (10-100) ($p<0.01$) respectively. There were no cases of bearing spin out or instability. 8 knees had subsequent procedures following revision including arthroscopic debridement for patellar crepitus (3), I+D with polyethylene exchange (2), arthroscopic lysis of adhesions (1), revision for instability (1), and resection arthroplasty (1). Radiographic review showed no evidence of loosening or osteolysis.

Conclusion: At short-term follow-up, mobile bearings can be used safely and reliably in revision TKA. Long-term studies are needed to evaluate the theoretical benefits of reduced post wear and prosthetic loosening. As demographic trends reveal younger patients requiring revision TKA, MB revisions may be a reasonable option to potentially improve long-term survivorship.