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Why Are Contemporary Revision Total Hip Arthroplasties Failing? An Analysis of 2500 Cases

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Introduction: Historically, the most common indications for re-revision of a total hip arthroplasty (THA) have been aseptic loosening, instability, infection, and periprosthetic fracture. As revision implants and techniques have evolved, understanding why contemporary revision THAs fail is important to direct further improvement and innovation. As such, the goals of this study were to determine the implant survivorship of contemporary revision THAs, as well as the most common indications for re-revision.

Methods: We retrospectively reviewed 2589 aseptic revision THAs completed at our academic institution between 2005 and 2015 through our total joint registry. There were 39% isolated acetabular revisions, 22% isolated femoral revisions, 18% both component revisions, and 21% modular component exchanges. The mean age at index revision THA was 66 years, and 46% were males. The most common indications for the index revision THA were aseptic loosening (21% acetabular, 15% femoral, 5% both components), polyethylene wear and osteolysis (18%), instability (13%), fracture (11%), and other (17%). Mean follow-up was 6 years.

Results: There were 211 re-revision THAs during the study period. The overall survivorship free of any re-revision at 2, 5, and 10 years was 94%, 92%, and 88%, respectively. The most common reasons for re-revision were hip instability (52%), periprosthetic fracture (11%), femoral aseptic loosening (11%), acetabular aseptic loosening (9%), infection (6%), polyethylene wear (3%), and other (8%). A pre-revision diagnosis of instability had the worst survivorship free of revision at 10 years (79%).

Conclusions: Compared to historical series, the 88% survivorship free of any re-revision at 10 years in a difficult revision cohort is notably improved. As implant fixation has improved, aseptic loosening has become much less common after revision THA, and instability has come to account for more than half of re-revisions. Methods to further mitigate this risk may be emphasized during index revision THA.