Outcome of Repeat Spacer-Free Two-Stage Hip Implant Exchange for Periprosthetic Hip Re-Infection

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INTRODUCTION:
Two-stage revision is a commonly selected method for addressing chronic periprosthetic joint infection (PJI). However, the management of recurrent infection following a two-stage exchange is still debated, and the outcomes of a repeat two-stage procedure remain uncertain. To determine the outcomes of repeat spacer-free two-stage revision hip arthroplasty (rTHA) for PJI, describe complications, and assess the overall success rate.
METHODS:
We analyzed prospectively collected data from 53 patients who underwent repeat spacer-free rTHA for infection between 2013 and 2022. The interval between procedures averaged 36.5 months (range 8 to 190 months). Primary implicated pathogens included 22 cases of coagulase-negative staphylococci (42%), 8 Enterococcus species (15%), 7 Staphylococcus aureus (13%), 6 Streptococcus species (11%), 5 Gram-negative bacteria (9%), 3 Cutibacterium species (6%), and 2 Candida species (4%). Forty percent of infections were polymicrobial, and 24% were resistant to biofilm treatment. PJs were diagnosed based on the ICM 2013 criteria. The follow-up period was 57 months (range 24 to 127 months).
RESULTS:
The overall success rate was 68%, with 17 PJIs relapsing. Most patients (78%) were McPherson host status B, with 45% having an ASA score of 3 or higher. Local extremity grades were type 3 in 42% of cases. Among failures, 35% remained in persistent resection arthroplasty, 25% underwent DAIR with suppression therapy, and 15% required a new repeat rTHA. Finally, 25% of patients died during follow-up.
DISCUSSION AND CONCLUSION:
Repeat spacer-free rTHA has a moderate success rate with high mortality and complication rates, primarily due to patient comorbidities, pathogen-related factors and local extremity status. Optimizing host factors and careful patient selection are essential for improving outcomes in these complex cases.