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Failed Debridement and Implant Retention Does Not Compromise the Success of Subsequent Staged Revision in Infected Total Knee Arthroplasty

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Summary:

This study found that a previously failed DAIR for deep infection does not compromise the success rate of a subsequent staged revision in TKA.

Abstract:

Introduction

Prosthetic joint infection (PJI) is the leading cause of early revisions following total knee arthroplasty (TKA). Debridement, antibiotics and implant retention (DAIR) procedures are often the initial treatment for PJI. However, there is concern that failed DAIR undermines the future success of revision procedures. This study aims to investigate the impact of DAIR on the success of subsequent staged revisions for PJI.

Methods

A multicentre retrospective review was performed over a 15-year period. Treatment success was defined as implant retention without the use of long-term suppressive antibiotics. This was compared between patients who underwent a staged revision as the first procedure for PJI (Staged only) and patients who failed DAIR prior to staged revision (F-Dair). Competing risk survival analysis was performed to compare the two groups and considered for patient demographics, ASA score, organism type, BMI, age of prosthesis and the duration of symptoms.

Results

Of 291 eligible patients, 63 underwent staged revision and 228 underwent DAIR as the first procedure for PJI (flowchart 1). Of the 228 DAIR patients, 75 failed DAIR and underwent subsequent staged revision (F-DAIR). At mean follow-up of 6.2 years, the success rate was 72% in the F-Dair group and 81% in the staged-only group. On survival analysis, there was no significant difference in subdistribution hazard ratio comparing the probability of failure (implant retention) in the two treatments groups (Figure 1, SHR=0.72; 95% CI 0.32-1.61; P=0.42).

Discussion And Conclusion

This study suggested that when treating PJI in TKA, a previously failed DAIR does not compromise the success of a subsequent staged revision.