

An Abbreviated Two-Stage Procedure for PJI Resulted in Similar Post-Operative Outcomes to More Traditional Two-Stage Procedures

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INTRODUCTION:

Prosthetic joint infections (PJIs) cause immense morbidity following total joint arthroplasty and treatment has traditionally been a 2 stage (2S) exchange arthroplasty, involving placement of an antibiotic spacer, prolonged antibiotics, and subsequent reimplantation weeks to months later. The best treatment of PJI is still not fully known. Our institution has experimented with shortening the interval between antibiotic-spacer placement and revision arthroplasty and hypothesized that an abbreviated interval for 2 stage (a2S) reimplantation should be equivalent to traditional 2S implantation techniques.

METHODS:

One-hundred eight patients treated for hip and knee PJIs at our institution between January 2014 and December 2024 were included after IRB approval. Participants were categorized as 2S or a2S revisions, with the separation between the groups occurring at 8 weeks after spacer placement. Patients who exclusively underwent DAIR, had 1S revision, or who received amputation or girdlestone were excluded. Demographic and baseline characteristics, treatment course, surgical details, and both intraoperative and postoperative complications were collected via chart review. Descriptive stats were performed and uni- and multivariate analyses were performed using generalized-linear models and logistic regressions.

RESULTS:

Of the 108 patients, 76 had 2S, and 28 had a2S. Average age was 71 ± 14 years with age trending towards being lower in the a2S group ($p=0.08$). BMI was 29 ± 6 , 53% were men and 75 had prior TKA with 29 having prior THA. Mean follow-up time in the group was 35 months. Reinfections after reimplantation occurred in 31% of the cohort with similar rates between the groups, when adjusting for age. There were no differences in reoperation, revision, or post-op complications between the groups.

DISCUSSION AND CONCLUSION:

In our preliminary analysis, shortening the interval between stages of exchange arthroplasty for PJI to within 2 months revealed similar rates of infection eradication to more traditional 2S revisions. For patients requiring 2S procedures, this abbreviated time structure may allow for reduced morbidity associated with prolonged antibiotic and may serve as a model for other institutions seeking to optimize outcomes and efficiency in infected arthroplasty revisions.