Abstract

INTRODUCTION

Periprosthetic joint infection (PJI) is a serious complication after total hip arthroplasty (THA). Prior work has explored risk factors for infection, but few studies have evaluated whether surgical approach influences the microbiologic profile of THA PJIs.

METHODS

A retrospective review identified patients who developed PJI after primary THA between January 2007 and January 2024. Surgical approach (direct anterior vs posterior) was determined from operative reports. Infecting organisms were categorized as gram-positive, gram-negative, polymicrobial, or culture-negative. Clinical and microbiologic variables were compared between approaches. Among culture-positive, microbiologically homogeneous infections, multivariable logistic regression assessed the association between approach and gram-negative infection.

RESULTS

Eighty-three patients met inclusion criteria: 22 anterior and 61 posterior THAs. There were no significant differences in age, sex, BMI, Charlson Comorbidity Index, or SIRS score between cohorts ($P > 0.05$). Organism profiles were broadly similar across groups, with no statistically significant differences in specific pathogens or microbiologic categories, including gram-positive, gram-negative, or culture-negative PJIs. While not statistically significant, polymicrobial infections were more common in the posterior cohort (13.1 vs. 4.5%, $P = 0.433$) and gram-negative organisms in the anterior cohort (18.2 vs 4.9%,$P = 0.076$). With multivariable analysis the surgical approach trend toward gram negative infections remained but was not statistically significant (OR = 3.79; 95% CI: 0.74–19.34; $P = 0.110$).

CONCLUSION

Surgical approach was not associated with significant differences in infecting organism profile after THA PJI. However, the observed trend toward more gram-negative infections with the anterior approach warrants further investigation.