

## **Unexpected Positive Cultures in 230 Aseptic Revision THAs: High Midterm Survivorship Free of PJI**

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### **INTRODUCTION:**

Unexpected positive cultures in aseptic revision total hip arthroplasties (THAs) are frequently reported in the literature. However, their risk of subsequent periprosthetic joint infection (PJI) remains unclear. The goals of this study were to determine the management strategies of unexpected positive cultures after aseptic revision THA, midterm survivorship free of PJI, and risk factors for infection after index revision.

**METHODS:** We retrospectively identified 230 aseptic revision THAs with unexpected positive cultures performed from 2009 to 2022 at a single academic institution. At the time of index aseptic revision THA, all patients had an MSIS score of <2 based on 2011 criteria. The most common isolated unexpected positive culture was *Cutibacterium* (19%). The median number of positive intraoperative cultures was 1 (range, 1-5), and 17% were grown in broth only. The mean age was 67, 40% were female, and mean BMI was 31 kg/m<sup>2</sup>. Mean follow-up was 4 years.

**RESULTS:** Of the 230 revision THAs with unexpected positive cultures, 68% received postoperative antibiotics, with 65% prescribed two weeks or less of oral antibiotic therapy. The 5-year survivorship free of PJI was 96%. There were nine subsequent revisions for PJI. One of the nine hips had multiple positive cultures isolated at index revision, and four of the nine (44%) had the same organism isolated during both aseptic revision and subsequent PJI. Postoperative antibiotic therapy and the number of positive cultures at index revision were not associated with infection risk.

**DISCUSSION AND CONCLUSION:** In this series of 230 aseptic revision THAs with unexpected positive cultures, the 5-year survivorship free of PJI was excellent at 96%. Nearly half of hips with subsequent PJI had the same organism isolated during both the index revision and subsequent PJI. However, there was no association between antibiotic therapy, or number of positive cultures during index revision and infection risk.