Clinical Summary:

*Gordonia bronchialis* Sternal Wound Infection in 3 Patients following Open Heart Surgery: Intraoperative Transmission from a Healthcare Worker


**Key Points**

- A nurse anesthetist was found to be the source of contamination in three cases of sternal wound infections following open heart surgery.
- Circumstantial evidence concluded the source of the outbreak was her home-laundered surgical attire.

**Background**

Home laundering has persisted, despite evidence it is not able to reliably remove pathogens. Biofilms commonly form inside washing machines or any surface in contact with water. Microbes can be introduced into the washing machine by clothing articles, and the biofilm containing these microbes is much more resistant to chemicals and temperatures.

**Objectives**

This article investigated the source of surgical site infections on three cardiac patients following open heart surgery.

**Design**

The staff members involved in all three cases were divided into two groups. Group 1 contained two staff members who provided care to all three infected patients, and group 2 contained 20 staff members who provided care to any three of the infected patients. Scalp, nares, pharynx, axilla, hands, and surgical scrubs were cultured.

A nurse anesthetist in group 1 had reported a dermatitis on her forearm. Subsequent cultures of the anesthetist, her roommate and their four dogs were taken. The home washing machine had been removed, and was unavailable for culture. In addition, environmental cultures of the operating room and recovery areas were taken.
Clinical Summary

Results

Cultures from the nurse anesthetist in group 1 yielded four strains of *G. bronchialis*. One strain was found on her, her roommate and two of the patients. A second strain was revealed on the nurse anesthetist and one of the patients. When learning of the results, the anesthetist proactively decontaminated her home, including ridding her home of a washing machine that had an unpleasant odor.

Conclusion

While the nurse anesthetist’s home washing machine was not able to be tested, circumstantial evidence links the isolates to the washing machine and contaminated surgical scrubs as the likely source of contamination. Both the nurse anesthetist and her roommate have tested negative since the washing machine was disposed of and the home was decontaminated.

The three patients were readmitted three weeks to eight months postoperatively with deep sternal wound infections caused by *G. bronchialis*. The patients required debridement and skin grafts, along with extended intravenous and oral antibiotic therapy.

Evidence supporting hospital-launched surgical attire has continued to increase, and AORN recommends washing by a commercial facility or single use scrubs.

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