Call TR, Auerbach FJ, Riddell SW et al. *Anesth Analg.* 2009;109(2):479-83.

Nosocomial contamination of laryngoscope handles: challenging current guidelines

A high incidence of bacterial contamination was identified on reusable laryngoscope handles that were considered clean and ready for use.

Cultures taken from reusable laryngoscope handles yielded potentially pathogenic bacteria, including *Enterococcus spp.* and *Staphylococcus aureus.*

Objective

- To assess institutional laryngoscope handle-cleaning techniques and investigate bacterial and viral contamination of reusable laryngoscope handles that were considered clean and ready for use

Methods

- This was a prospective study that involved the testing of 60 rigid reusable laryngoscope handles in use within the main adult operating theaters of a single hospital
- Forty samples for bacterial culture and 20 samples for viral detection were collected from the entire surface area of the handle (excluding the top [where the blade is attached] and the bottom [where the battery is inserted/removed])
  - The handles were swabbed approximately 20 times from the top to the bottom while the device was rotated
  - Samples were collected after the operating theater and equipment had been cleaned (using low-level disinfection) and were deemed ready for the next patient
  - Samples for bacteria culture were collected over a period of 8 non-consecutive days and samples for viral detection were collected over 2 consecutive days
- Identification of bacteria was done using standard laboratory methods
- Samples for viral detection were analysed for 17 respiratory viruses using a multiplex reverse transcriptase chain reaction assay

Results

- From the 40 samples taken for bacterial culture, 30 tested positive for one or more types of bacteria
- The most common bacteria identified were coagulase-negative staphylococci, *Bacillus* species (spp.) (not *anthracis*) and α-haemolytic *Streptococcus* spp. (Figure 1)
  - Other bacteria identified included vancomycin-susceptible *Enterococcus* spp., methicillin-susceptible *Staphylococcus aureus* and *Corynebacterium* spp.

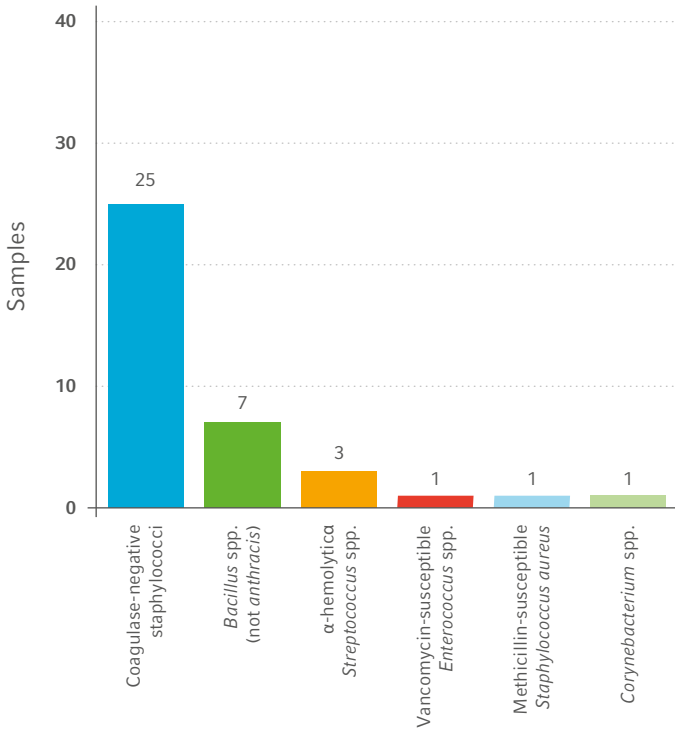

Figure 1. Bacteria identified on rigid reusable laryngoscope handles considered clean and ready for use

All viral tests were negative.

Conclusions

- A high incidence of bacterial contamination was identified on reusable laryngoscope handles that were previously considered clean and ready for use
- Cultures taken from reusable laryngoscope handles identified potentially pathogenic bacteria, including *Enterococcus* spp. and *S. aureus*
- No nosocomial drug-resistant microorganisms or respiratory viruses were isolated