

Infection control practices of laryngoscope blades: a review of the literature

The concept of using single-use, disposable laryngoscope blades is a sensible one.

The main advantages of using a disposable laryngoscope blade include infection control and cost.

Introduction

- Nosocomial infections are associated with substantial consequences in terms of cost and patient health-related quality of life
 - The prevention of such infections is a key focus for hospitals and insurance companies alike
- Because contaminated anesthesia airway equipment may act as a vector for potentially pathogenic organisms, it is imperative that reusable airway equipment (e.g., laryngoscope blades) be clean, or that single-use (i.e., disposable) equipment be used
- Numerous studies have shown that methods for cleaning and sterilizing reusable anesthetic airway equipment are ineffective
 - The potential for cross-contamination with improperly cleaned reusable equipment could be avoided by using single-use equipment

Infection control practices for reusable airway equipment

- Typically, reusable anesthesia airway devices that come into contact with mucous membranes, blood or bodily fluids are classed as semi-critical items according to the so-called Spaulding criteria
 - Between uses, semi-critical items should be cleaned and then processed using high-level disinfection or sterilization
- Often the laryngoscope handle is overlooked in this scenario, despite that it may act as a potential source of cross-infection (the tip of the blade may contaminate the handle when it is in the folded-down [i.e., closed] position)
- Manipulation of a patient's airway, as with intubation procedures, can be bloody
 - Numerous studies have demonstrated that laryngoscope blades and handles that are considered

ready for patient use harbor significant amounts of visible and occult blood

- Although blood contamination may pose an infection risk to patients and anesthesia providers, to date there are no data to confirm that this is the case
- Studies have shown that the cleaning and disinfection/sterilization of reusable laryngoscope blades does not always occur
 - This was demonstrated when four children whose airway was managed with a single reusable laryngoscope blade developed serious *Pseudomonas aeruginosa* infections

Use of single-use laryngoscope blades

- In order to reduce the spread of hospital-acquired infections, the use of disposable laryngoscope blades (which are designed to be used once and then discarded) is recommended, wherever possible
- In routine situations, single-use laryngoscope blades appear to be efficient devices, although the use of reusable blades may be preferred for patients with difficult airways
- From a personal point of view, clinicians appear to prefer single-use devices
 - In one study, one-third of respondents to a survey stated that they would not be prepared to put a reusable laryngoscope blade deemed ready for patient use into their mouth
 - In another study, most clinicians stated that, if they were patients, they would want single-use as opposed to reusable devices used on themselves and their families

Conclusions

- Studies have shown that current procedures for cleaning, disinfecting, sterilizing and handling reusable laryngoscope blades and handles are suboptimal or that established cleaning and disinfection/sterilization protocols are not well adhered to
- The concept of using a single-use, disposable laryngoscope blade is a sensible one, but previously-published studies reported less user satisfaction than with reusable laryngoscope blades
- According to the author, the main advantages of using disposable laryngoscope blades include infection control, cost, and bright fiberoptic lighting