

## Contamination of the laryngoscope handle: An overlooked issue

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This Invited Commentary accompanies the following original article: Howell V, Thoppil A, Young H, *et al.* Chlorhexidine to maintain cleanliness of laryngoscope handles. An audit and laboratory study. *Eur J Anaesthesiol* 2013; **30**:216–221.

In this issue of the *European Journal of Anaesthesiology*, Howell *et al.*<sup>1</sup> address the problem of cross-contamination in the operating room. First, the widespread employment of single-use laryngoscope blades – associated with the use of non-disposable anaesthesia devices, mainly in relation to the risk of transmission of prions – may have particularly reusable laryngoscope handles. These authors need to be commended for attracting our attention to a very practical but largely overlooked issue and a simple means of improving patients' security.

The paper challenges our way of thinking in at least three directions. First, the widespread employment of single-use laryngoscope blades – associated with the use of non-disposable anaesthesia devices, mainly in relation to the risk of transmission of prions – may have particularly reusable laryngoscope handles. These authors need to be commended for attracting our attention to a very practical but largely overlooked issue and a simple means of improving patients' security. Second, the possibility of severe clinical consequences of such transmission may have been considered as disputable. However, the October 2011 medical alert issued by the UK Medicine and Healthcare products Regulatory Agency (MHRA) proved the opposite. This alert indicates that 'a patient death was caused by a failure to decontaminate a laryngoscope handle appropriately between each patient use.' This led to cross-infection and subsequently septicaemia, confirming previous reports

(<http://www.mhra.gov.uk/home/groups/dtsbs/documents/medicaldevicealert/con129221.pdf>).

Third, we trust our institutional decontamination protocols to prevent the possibility of such cross-contamination and delegate this task to the nurses. This again is misleading. Every anaesthesia department, in coordination with the local nosocomial infection prevention committee or the hospital hygiene department, should have a formal, written, updated procedure for decontamination of the laryngoscope handle between each patient use, in the operating room as well as in prehospital and intensive care settings. Such a protocol is not always available<sup>3</sup> and, when present, its application depends on individual members of staff recalling the rules or the 'repaint the fence' process on a regular basis; it is known from human factors studies that this is not always reliable.

Totally disposable laryngoscopes should be discussed in the light of their quality, cost and environmental impact. Improvements in this direction have been published as preliminary reports only,<sup>4</sup> combining a disposable shell and a reusable light unit with a LED bubble and batteries. The cost of such a totally disposable one-piece external shell is in the range of the cost of a single-use metal blade.

The problem highlighted for the laryngoscope handle is also of concern in relation to other non-disposable pieces of equipment in use in the operating theatre. The fibrescope has a unique place and is not used in every case. Moreover, special decontamination protocols as well as traceability are generally adopted after fibroscopy. Conversely, less attention is paid to the cross-contamination hazard associated with screens and keyboards, the cuff of non-invasive blood pressure devices, pulse oximeter sensors and ECG cables, all of which are usually reusable.<sup>5</sup> A recent survey of bacterial and mycological contaminants showed a 34% incidence of contamination of ECG wires, mainly for cables which had been in use for more than 6 months, possibly in relation to an increase in their surface porosity, allowing for more adhesion of germs.<sup>6,7</sup>

Finally, the good news in the study by Howell *et al.* is the immediate and long-lasting antimicrobial efficacy of chlorhexidine. The recommendation to use this agent routinely in addition to cleaning and autoclaving the handle if there is a risk of contamination with *Clostridium difficile*, and also at regular intervals, makes sense and should be adopted because it has proved to be efficient and cost-effective.

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### References

1. Howell V, Thoppil A, Young H, *et al.* Chlorhexidine to maintain cleanliness of laryngoscope handles. An audit and laboratory study. *Eur J Anaesthesiol* 2013; **30**:216–221.
2. Call T, Auerbach F, Riddell S, *et al.* Nosocomial contamination of laryngoscope handles: challenging current guidelines. *Anesth Analg* 2009; **109**:479–483.
3. Esler M, Baines L, Wilkinson D, Langford R. Decontamination of laryngoscopes: a survey of national practice. *Anaesthesia* 2009; **54**:587–592.

4. Grape S, Lujic M, Meunier O, *et al.* Laryngoscopic view and bacterial contamination: a completely vs a partially disposable laryngoscope. 2009 ASA Annual Meeting, A71.  
<http://www.asaabstracts.com/strands/asaabstracts/searchresults.htm;jsessionid=E63FD1FD7794ACEF0314B4F07E71CEF4?base=1&index=1&display=10&highlight=true&highlightcolor=0&bold=true&italic=false>.
5. Brown DQ. Disposable vs reusable electrocardiography leads in development of and cross-contamination by resistant bacteria. *Crit Care Nurse* 2011; 31:62–68.
6. Wild D. ECG cables are common source of contaminants in OR. *Anesthesiol News* 2011; 37:12.
7. Samyn B, Saumande B, Lebas B, *et al.* Cross contamination of reusable anesthesia equipment in the operating room. *Anesth Analg* 2012; 114:S-221.