Reviewer’s report

Title: A randomised, controlled crossover comparison of the C-MAC videolaryngoscope with direct laryngoscopy in 150 patients during routine induction of anaesthesia

Version: 4 Date: 22 November 2010

Reviewer: Richard Cooper

Reviewer’s report:

Discretionary revisions:

Page 8, line 14/legend for Figure 5a): suggest changing “extralaryngeal manipulation” to the more commonly used phrase, “external laryngeal manipulation” or BURP. If the two terms are being used interchangeably, I would recommend one or the other.

The terms “highly limited” and “impeded” views are vague and should be replaced with a specific CL grade (eg CL> 2B), in the text, not just in the comments to the reviewers.

Table 1: again—reclination is not a word in my dictionary. The term appears again in the new Table 1. Is this the same as atlanto-occipital extension?

Table 2: suggest changing “impeded” view to sub-optimal or CL> 2

Table 3: were the anesthesiologists offered choices of specific concerns (eg comfort, guidance, glottic exposure)?

Minor essential revisions:

Please confirm (and explicitly state) whether the views referred to with the C-MAC all pertain to those on the monitor, not direct viewing while all references to DL pertain to the Heine laryngoscope. Use of the C-MAC as a direct laryngoscope is mentioned in the Background making statements about the C-MAC view ambiguous. Please clarify the meaning of the statement, page 6, 5 lines from the bottom, “…anesthesiologist was requested to identify the best achievable Cormack-Lehane view…with direct Macintosh and C-MAC videolaryngoscopy.”

It remains unclear which patients received BURP. From figure 5a, it would appear that when BURP is permitted, there was almost no difference between the CL views with the exception of a small percentage of CL. From Table 2, it appears that there were 3/150 CL IV views. If BURP alone was performed on those patients, did they all remain CL IV views?

The statement that the C-MAC is unique in that it can provide a direct and indirect view was correct at the time the manuscript was originally submitted.
However, in October 2010, both Aircraft Medical (McGrath Mac™) and Verathon Medical (GlideScope Direct™) introduced Macintosh-style VL blades. Neither device has been investigated, to the best of this reviewer’s knowledge. These recent products might be acknowledged in a footnote.

Major Compulsory Revisions:

I do not wish to debate the safety of the stylet or tube-guide, which is widely regarded as standard practice; in much of the world, a styletted ETT is part of the “rapid sequence induction”; the technique is taught to medical students and respiratory therapists who are definitely not regarded as “highly experienced staff.” I do not think that the majority of the journal’s readers will regard avoidance of a stylet as a safety advantage, particularly if it reduces the number of required intubation attempts. I would request a statement in the Discussion that “avoidance of a stylet” may be regarded as a safety issue but this matter is debatable. It would be helpful if the authors indicated clearly whether the tube guide was used as a recessed stylet (not protruding beyond the tip of the ETT) or like an Eschmann Tracheal Tube Introducer, wherein the introducer protrudes several cm beyond the tip of the ETT. Perhaps, this is the crux of our disagreement but the manuscript is unclear.

I am also inclined to disagree with the authors’ contention that intubation should be performed with the direct view if possible. Although for the moment this issue has not been fully explored, I suspect that more force may have to be applied to the laryngoscope when a direct view, rather than the monitored view is used. Again, I would not take major issue with this point since for the moment, it remains speculative, but the Discussion would be enhanced if this matter is briefly stated.

My opinion regarding the cause of the palatopharyngeal injuries has been conveyed as clearly as I know how and there seems to be a fundamental disagreement, which is fine. I would however, encourage the author to bring to the attention of the reader the possibility that these injuries may be a consequence of blindly inserting the ETT into the pharynx and might very well occur with our without a stylet or with or without a modified Macintosh blade. (In teaching intubation with the C-MAC, I still insist on direct observation of the insertion of the ETT insertion into the oropharynx.)

**Level of interest:** An article whose findings are important to those with closely related research interests

**Quality of written English:** Needs some language corrections before being published

**Statistical review:** No, the manuscript does not need to be seen by a statistician.
Declaration of competing interests:

I have received equipment from competing companies (Aircraft Medical, Verathon), a speaker's honorarium from Aircraft Medical and travel expenses from Verathon Medical. I was a former investor in Verathon Medical but have no current financial interests in any of these companies.