Reviewer’s report

Title: Teaching tracheal intubation: Airtraq is superior to Macintosh laryngoscope

Version: 3  Date: 8 May 2014

Reviewer: Tom Van Zundert

Reviewer’s report:

The authors introduced a new (progressive evaluation) teaching model to medical students how to best intubate both in manikins and in patients.

Authors have to be complimented with their endeavours, which obviously pays off very well as the medical students were able to intubate with a good success rate. The authors used different methods to teach their students: 1) they were instructed on airway management including Cormack-Lehane classification and other facets of airway management such as what is the best position during intubation; 2) a video was provided; 3) the students could observe tracheal intubations. Two techniques were studied: a) the Airtraq laryngoscope; b) the Macintosh laryngoscope and tested on manikins (10 intubations each) and on patients (each student performed 6 intubations on patients). Altogether 26 medical students were included in this study.

The authors suggest that the Airtraq is a NOVEL / NEW (p.3 – line 5 & p.5-line 1 second paragraph) intubation device – It exists already for more than 8 years – that is arguably not novel anymore. The authors refer to 6 references in which the Airtraq was used.

The authors should explain that they actually are using different methods: The Airtraq is a channelled videolaryngoscope using indirect laryngoscopy. The classic Macintosh laryngoscope is used for direct laryngoscopy.

Please explain better why the THIRD intubation attempt with Macintosh DECREASED the success… see page 10 – One would expect the opposite.

Conclusions: Intubation failure is potentially dangerous for patients. If one notices it and makes the necessary correction, there shouldn’t be an adverse outcome for the patients. It is true that anaesthesia is not risk free!

Legends (p.11): There is no need for the two figures as these figures were published before and should be known to the reader.

The items: competing Interests, Author Contribution: should appear on page one.

Minor remarks:

1. Each section should start with a new page: Introduction, Methods, Results, Discussion,…

2. P.5 – line 2: Tracheal intubation is a lifesaving procedure, and an important step…. establishing an artificial airway
3. P.5 – line 8: ... is a good opportunity to master this technique.
4. P.5 – line 12: And main cause – please rephrase:- The main cause of difficulty with classic Macintosh blades and direct laryngoscopy lies in glottis exposure, which requires the alignment of oral, pharyngeal and tracheal axes. [It would be good to refer to Greenland’s studies here on this topic].
5. P.7 – line 9: …used for male adult patients and size ID 7.5 mm for female patients.
6. P.7 – line 13: All students and patients signed a written informed consent to participate in the study.” Should go to the first paragraph of the Methods section.
7. P.7 – line -7: …seconds or it resulted in an oesophageal intubation.
8. P.8 – line 1: should include: attention for positioning, head tilt,…
9. P.8-line – 4: .. which was significantly higher than in the Macintosh group
10. P.8 – line 3: …patients in the Macintosh group required adjusting the view.
11. P.9 – line 5: ... student rated Airtraq AS easier to learn than..
12. P.9 – line 16: greatly # significantly – see also line 19 (omit here greatly) 
13. P.9 – line -3: manikin # manikins
14. P.10 – line 5: …to help novice … # to teach novice personnel TO learn this…
15. References: please correct #6: tracheal
16. P. 13: Table 1. Point 6: Cormack-Lehane GRADE I or II
17. P.13 – point 7: trachea
18. P.13 – last sentence: Failed intubation (i.e. tube not inserted correctly into the trachea within 150 s from the time of picking up the ETT or tube inserted into the esophagus). Please verify the definition.
19. Table 2: Please adjust the table to the journal: No = n why do you put (n=24) after Airtraq and nothing after Macintosh? You give the figures of the Airtraq on 26 – 26 and 22 patients!
20. Table 3: Please correct; Age, yr ; Gender (M:F), n; Mallampati grade I:II, n – add below this table: Data are given as figures +/- SD
21. Table 4: are these CUMULATIVE results for the 1st – 2nd – 3rd attempt? – Please add: Data are given as figures +/- SD

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

Quality of written English:Acceptable

Statistical review:No, the manuscript does not need to be seen by a statistician.