Reviewer's report

Title: Dexmedetomidine on tracheal extubation in deeply anesthetized adult patients after otologic surgery: a comparison with remifentanil

Version: 3
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Reviewer: Jeff E. Mandel

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This is a prospective, randomized, concealed allocation comparison of extubation quality using remifentanil vs. dexmedetomidine during otologic surgery. The primary endpoint is a subjective assessment of extubation conditions, but there are no validated objective criteria for extubation, and the study is adequately powered to detect the differences.

Major compulsory revisions:

1) P6 L10-12 I'm not clear on why one patient was excluded from analysis. Certainly the patient was extubated at some point, and hopefully the conditions were assessed. You should either state your criteria for deep extubation (respiratory rate, minute ventilation, etc.) in the methods and indicate that only patients who met these criteria were included, or include the patient in the analysis.

2) P6L26 How was “regular respiratory pattern” assessed? Either state criteria, or that this was the subjective assessment of the blinded observer. Since you make the point that a regular respiratory pattern is important, it is necessary to inform the reader what to look for.

3) P9L25-28 I'm not sure this is a limitation of your study, unless you have reason to believe the results would be different in the lateral position.

4) P9L28-29 This issue is more complicated, and probably needs more explanation. You feel that a regular respiratory pattern during bandage application is an essential clinical endpoint for safe deep extubation. I might take the position that a BIS of 50 during bandage application is a more important criteria. These criteria have not been compared, and neither has been validated. You have shown that ventilatory pattern is a useful criteria for both remifentanil and dexmedetomidine. Since we don’t know whether BIS-guidance during deep extubation is affected by remifentanil to a greater or lesser extent than by dexmedetomidine, we cannot extend your results to that criteria. Thus, the limitation of your study is the lack of a validated criteria for deep extubation.

5) An inherent limitation of studies such as these is that they reflect choices that we make as anesthesiologists on “what is safe”. I perform the vast majority of my otologic cases with propofol-remifentanil TIVA and an LMA, and remove the LMA when the patient is awake. Someone else might employ profound paralysis during extubation and massive doses of sugamadex. We cannot distinguish the safety of any of these techniques with a sample of 25 patients per group. Thus, I
would avoid making any claims that the technique is safe, because we have no comparator group. All we can conclude from your result is that dexmedetomidine has advantages over remifentanil during deep extubation when you give enough of it.

Minor revisions:
P3L15 “freedom from” instead of “free of”
P3L16 strike “available”
P4L10 Define difficult airway, remove “smoke” (you have already stated you excluded patients with a history of smoking)
P4L12-15 “ASA standard monitors” would suffice.
P5L13 How was respiratory rate measured?
P6L17 “no coughing on extubation”
P6L18 “coughing” instead of “cough episodes”
P6L19 “coughing on”
P6L25-27 “tendency for”, “to maintain”, “cuff deflation”
P7L17 “The [main, primary, most important (choose on)] result”
P7L20 “prolonging”
P7L25 “are undesirable” instead of “is the least desirable feature”
P7L29 “for airway reflexes to” instead of “airway reflex should”
P7L30 “resume”
P8L16 “is”
P8L20 “deflation”
P8L24 “more rigorous” is incorrect. Do you mean “greater”? 
P9L7 “requested” instead of “claimed for”
P9L12 “fewer” instead of “less”
P9L13 “may be attributable to” rather than “contribute”
P9L16 “observe”
P9L19 I don’t think “well fastened” is what you mean. Perhaps “well fasted”? 
P9L23 “large” or “major”, not “tough”

Level of interest: An article of importance in its field

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 declare that I have no competing interests