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Attempting tracheal intubation without paralysis

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Lundstrøm and colleagues have conducted a well constructed and carefully reported meta-analysis of studies comparing tracheal intubation without the use of muscle relaxants with conventional relaxant-based methods.¹ They found that avoiding the use of a muscle relaxant increases the risk of difficult laryngoscopy two and a half times (risk ratio (RR) 2.54, 95% confidence interval (CI) 1.53-4.21, $P=0.0003$, difficult tracheal intubation 13 fold (RR=13.27, 95% CI 8.19-21.49, $P<0.00001$) and the risk of upper airway discomfort or injury (RR=1.37, 95% CI 1.09-1.74, $P=0.008$). So far, so good... Then things start to unravel and the all-important last sentence of the abstract states “In a clinical context, one must balance judgements for using an NMBA when performing tracheal intubation”. What? Why?

Possible explanations for a conclusion so far removed from the data lie in the review’s discussion section. The authors remind us that nobody died and that not all difficult tracheal intubations are “clinically important” i.e. threatening to the patient’s life or health. The statistics on difficult laryngoscopy are then undermined by the application of trial sequential analysis (TSA), a methodology primarily intended to strengthen statistical analysis when a completed meta-analysis is updated by new studies. Maybe so. Nevertheless the fact remains that attempting tracheal intubation without prior paralysis increases the risk of difficulty by a factor of 13. The Difficult Airway Society 2015 guidelines on the Management of Unanticipated Difficult Intubation² stress the importance of optimising the first attempt at laryngoscopy “as repeated attempts increase risk of morbidity and mortality. Isn’t that enough? No? Then how about the increased risk of injury?

Finally, we are told that “...large trials with low risk of bias describing upper airway injury and discomfort, and other SAES and mortality are needed”. No they aren’t. We already know that attempting tracheal intubation without muscle relaxants is a bad idea. As a

minimum it worsens laryngoscopy, increases the likelihood of difficult intubation and increases the risk of injury. Won't that suffice? How can we possibly justify pressing on with further research into a methodology that we know to be inferior?³

In a brilliantly titled editorial "Did our brains fall out"⁴ Shafer reminds us of James Oberg who said "You must keep an open mind, but not so open that your brains fall out."

Continued promotion of tracheal intubation in the absence of paralysis despite decent evidence to the contrary is starting to sound like advocacy for a flat earth or homeopathy. In this context, calling for more research amounts to advocacy. We don't need more research, we need to apply what we already know. Specifically, the anaesthetist's best shot at tracheal intubation involves general anaesthesia with paralysis.

Interestingly, the original Cochrane review⁵ (of which the present publication is a summary) ends with a slightly different homily: "In conclusion, in a clinical context, one must have weighty arguments for using or not using NMBA when performing tracheal intubation." Indeed. We have a weighty argument for using paralysis, its omission is injurious to patients.

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- 4 Shafer SL. Did our brains fall out? *Anesth Analg* 2007; **104**: 247-8
- 5 Lundstrøm LH, Duez CH, Nørskov AK, et al. Avoidance versus use of neuromuscular blocking agents for improving conditions during tracheal intubation or direct laryngoscopy in adults and adolescents. *The Cochrane Library* 2017