Postoperative sore throat prevention: Is there an evidence or is it much ado about nothing?

Dear Editor,
The incidence of postoperative sore throat (POST) is estimated to be to 62% following general anesthesia. Young patients, females, prolonged surgeries with postoperative ventilation, underlying lung diseases, traumatic intubations, use of double-lumen endotracheal tubes, intubation without using neuromuscular blockade, and high cuff pressures are a few of the causes of POST. Use of gum elastic bougie and stylet in difficult intubations could possibly aggravate POST if any other factors are also coexisting. Surprisingly, evidence reveals that the expertise of the anesthesiologist performing tracheal intubation has no influence on the incidence in adults, but it could be a reason in children as size of tube used, smooth intubations come with experience.[1]

A sore throat could be experienced due to a number of pathologies such as pharyngitis, laryngitis, tracheitis, cough, hoarseness, dysphagia, or irritation due to the throat pack used. The use of nitrous oxide has been implicated to have unfavorable experiences in terms of POST because of its propensity to diffuse in the cuff and thus precipitate POST. Use of oversized tubes, uncuffed tubes, and head/neck surgeries are responsible for POST in children. It is recommended to use

References

1. Lukito AA, Pranata R, Huang I, Thengker A, Wirawan M. Fracture of the port catheter and migration into the coronary sinus: Case report and brief review of the literature. Clin Med Insights Case Rep 2019;12:117954761983228. doi: 10.1177/1179547619832282.

2. Leitman M, Vered Z. Foreign bodies in the heart. Echocardiography 2015;32:365-71.

3. Tabatabaie O, Kasumova GG, Eskander MF, Critchlow JF, Tawa NE, Tseng JF. Totally implantable venous access devices: A review of complications and management strategies. Am J Clin Oncol 2017;40:94-105.

4. Kapadia S, Parakh R, Grover T, Yadav A. Catheter fracture and cardiac migration of a totally implantable venous device. Indian J Cancer 2005;42:155-7.
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a cuffed tube whenever possible in children and to monitor cuff pressure (between 20 and 30 cm water).\[3\]

Use of supraglottic airway devices (SGAs) has been implicated with lesser POST. However, evidence suggests that there is a negligible difference in the incidence of POST between first- and second-generation SADs, with the exception of the use of i-gel which could be due to the absence of an inflatable cuff.\[7\]

Inflating the SGA cuff after securing the device has been shown to reduce the incidence when compared with inserting an inflated SGA. ProSeal SGA has an incidence of 33% POST when introduced without introducer and 25% with an introducer. A cuff pressure of up to 60 cm water is recommended for SGA.\[4\] The second-generation SGA including ProSeal and the preformed cuff SGA I-gel is better tolerated compared the first-generation ones. Researchers have used lidocaine jelly, betamethasone gel, water, water-based gels for lubricating SGA prior to insertion. However, the studies show that nothing is superior and is also limited by the small sample size in studies done. The various considerations for POST in adults are similar in children. Cuff pressure monitoring is recommended when using cuffed SGA in children and a pressure less than 40 cm water is suggested.

Currently, there is no dearth of literature trying to explore how to prevent POST, which is the best agent (systemic, topical, instillation in cuff), the ideal dose, the better airway device (endotracheal tube or SGA).\[5\] The topical agents include lidocaine, magnesium sulfate, ketamine, corticosteroids (betamethasone, triamcinolone, fluticasone, budesonide), glycyrrhizin (licorice), non-steroidal anti-inflammatory drugs (benzyamine spray or gargles), lozenges (containing amyl-m-cresol, azulene, and dexpanthenol). A recent meta-analysis suggests that lidocaine as a topical gel, spray, or a preinduction nebulization is ineffective in preventing POST\[8\].

Authors concluded that agents like magnesium sulfate, NSAIDs, corticosteroids, and licorice are reasonably effective in preventing POST with variable duration of efficacy which depended on the duration of surgery, and experience of the clinician involved. On the contrary, a systematic review, and meta-analysis of randomized controlled trials by Lam et al. suggested that when used for inflating cuff of endotracheal tube, both the alkalized and non-alkalized lidocaine may prevent and alleviate POST including postintubation-related emergence phenomena.\[7\]

Most of the randomized studies had some or the other limitations making it difficult to extrapolate the results into practice. The reasons are absence of analysis of certain pertinent data like comparison of cuff pressures, variable surgeries, non-standardized assessment of POST (binary scale, i.e. yes/no, use of various point scales like 0–4), and timing and time frames of assessment of POST), dose variability of various agents used. This is the reason why recent systematic reviews and meta-analysis have also suggested to conduct well-designed, adequately powered study using various alternatives to suggest the ideal agent for POST prophylaxis.

To conclude, prevention of POST still remains a grey area in the practice of anesthesia due to heterogeneity of patients, type of surgeries, route and dose of medications used, and lack of standardization in the assessment of POST.

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References
1. El-Boghdady K, Bailey CR, Wiles MD. Postoperative sore throat: A systematic review. Anaesthesia 2016;71:706-17.
2. Calder A, Hegarty M, Erb TO, von Ungern-Sternberg BS. Predictors of postoperative sore throat in intubated children. Pediatr Anesth 2012;22:239-43.
3. de Montblanc J, Ruscio L, Mazoit JX, Benhamou D. A systematic review and meta-analysis of the i-gel (®) vs laryngeal mask airway in adults. Anaesthesia 2014;69:1151-62.
4. L’Hermite J, Dubout E, Bouvet S, Bracoud LH, Cuvillon P, Coussaye JE, et al. Sore throat following three adult supraglottic airway devices: A randomised controlled trial. Eur J Anaesthesiol 2017;34:417-24.
5. Singh NP, Makkar JK, Cappellani RB, Sinha A, Lakshminarasimhachar A, Singh PM. Efficacy of topical agents for prevention of postoperative sore throat after single lumen tracheal intubation: A Bayesian network meta-analysis. Can J Anaesth 2020;67:1624-42.
6. Wang G, Qi Y, Wu L, Jiang G. Comparative efficacy of 6 topical
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pharmacological agents for preventive interventions of postoperative sore throat after tracheal intubation: A systematic review and network meta-analysis. Anesth Analg 2021 Apr 22. doi: 10.1213/ANE.0000000000005521. Epub ahead of print.

7. Lam F, Lin YC, Tsai HC, Chen TL, Tam KW, Chen CY. Effect of intracuff lidocaine on postoperative sore throat and the emergence phenomenon: A systematic review and meta-analysis of randomized controlled trials. PLoS One 2015;10:e0136184.

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Dear Sir,

COVID‑19 disease had been declared a pandemic by the World Health Organization in March 2020.[1] Critically ill intubated COVID‑19 patients develop increased airway resistance and require bronchodilator therapy either due to obstructive airway disease or due to acute bronchospasm. The delivery of inhaled bronchodilators can be facilitated either by nebulizers or metered‑dose inhaler (MDI). Nebulizers are popularly used for bronchodilator delivery in mechanically ventilated patients but studies have shown that MDI is as effective as nebulizers for bronchodilator delivery.[2] Moreover in COVID‑19 patients, there is an increased risk of SARS‑CoV‑2 infection to health care staff due to aerosolization which may require management of these patients in negative pressure isolation rooms. Many experts prefer in‑line MDIs in such patients. During pandemic times the in‑line MDIs are difficult to acquire because of increased demand and high cost. To overcome this issue, we are using syringe‑actuated MDI for COVID‑19 patients.

We load MDI canister in the barrel of 50 ml Luer lock syringe with the tip placed into the nozzle of the syringe and the plunger of the syringe placed back into the barrel so that the syringe is actuated by depressing the syringe plunger. We tightly attach the Luer connection of the syringe to the Luer port of 15 mm–22 mm fixed elbow connector [Figure 1]. The mode of ventilation is changed to volume control mode; aerosol delivery is achieved by depressing the plunger of the syringe and actuating the syringe just before the start of inspiration. This is followed by an inspiratory hold maneuver. This procedure can be repeated as many times as required. The syringe can be left in place to avoid ventilator disconnection and positive end expiratory pressure loss.

There are various advantages of MDI over nebulizer such as ease of administration, reduced cost, more predictable drug dosing, and less risk of aerosolization. Use of nebulizers in mechanically ventilated patients may lead to volume loss and this could lead to dangerous hypoventilation which may not be detected by alarm function because ventilators may falsely detect bias flow as minute ventilation. Also, expiratory volume measurements may not be reliable as nebulizers may damage the expiratory transducer.[3]

The bronchodilator therapy

Figure 1: MDI canister in the barrel of 50 ml syringe with the tip placed into the nozzle of syringe and connected to an elbow connector via Luer lock

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