The Use of Pharyngeal Throat Packs in Dental Anesthesia

The insertion of a pharyngeal throat pack (PTP) has historically been thought to prevent aspiration and ingestion, reduce postoperative nausea and vomiting (PONV), and stabilize the airway during general anesthesia by preventing leakage and maintaining tidal volume.[1]

However, some evidence has emerged in recently to suggest PTPs may not deliver on all the purported effects and may actually be harmful. Powell et al[2] showed that a PTP does not act as an effective barrier against blood ingestion during orthognathic surgery. Furthermore, they also indicated that a PTP had no positive or negative effect on PONV but may increase postoperative sore throat.[2] Faro et al[3] reported results that were similar to those of Powell's study, namely that PTP use did not prevent PONV but was associated with more significant throat discomfort. That same study also demonstrated a significant increase in postoperative dysphagia in the PTP group vs the control group (no PTP). Pabst et al[4] also reported a significantly increased rate of dysphagia, postoperative sore throat intensity, and foreign body sensation in the treatment group that received a PTP.

Most importantly, PTPs can be forgotten, which often leads to fatal airway obstruction following extubation.[4] Several ideas have been proposed to prevent inadvertent retention of PTPs, but unfortunately,[5–7] no universal solution has been identified to date. Nevertheless, PTPs are still routinely used in many intubated general anesthesia cases within the dental anesthesia field.[1,8] But because of the findings of the aforementioned recent studies and the risk of accidental PTP retention, there is now momentum to revisit the use of PTPs in many areas.

Although PTPs may not deliver on all the expected effects, they do have several notable benefits that we feel justify their continued use during intubated general anesthesia for dentistry and oral surgery. One of the main reasons for using a PTP in dental anesthesia is to prevent dental foreign bodies (eg, tooth fragments, restorative fillings, crowns, orthodontic brackets, dental implants, and other potential contaminants) from passing into the hypopharynx and being swallowed or aspirated by a patient after extubation. Moreover, the PTP seals the pharyngeal space and thus helps stabilize the airway during general anesthesia. This may be especially useful when mechanically ventilating pediatric patients with cuffless tracheal tubes or for procedures requiring frequent dynamic head position changes for surgical access. Although Powell et al[2] showed that a PTP does not effectively prevent blood from entering the stomach, it seems that a PTP can help reduce the volume of blood ingested. There is also no question that use of a cuffed endotracheal tube fails to completely prevent fluids from being aspirated.

It also seems likely that much of the reported postoperative sore throat or dysphagia associated with PTP use is directly related to how the PTP is placed. Rough insertion of a PTP can easily damage the delicate soft tissues of the hypopharynx and cause throat discomfort. PTPs should instead be inserted gently using appropriate instruments, such as Magill forceps, and then packed around the tracheal tube with care.

Many strategies have been created to help reduce the risk of accidental retention of a PTP. Some surgeons put a clamp on their gown as a reminder to remove the PTP at the end of the case. Checklists not only should be used but also should include PTP-in and PTP-out time stamps. Dental anesthesiologists can assist with confirming removal of the PTP prior to extubating a patient as well. Implementing a combination of these strategies should greatly reduce the risk of PTP being accidentally left behind.

Despite the new research that has brought into doubt many of the purported historical positives from PTP use, we believe that the benefits of a PTP far outweigh the potential negatives. However, based on this new evidence, some may opt not to insert a PTP for dental and oral surgery intubated general anesthetic cases, depending on the nature of the specific procedure or surgery. If a PTP is not used, we feel it necessary to perform a careful laryngoscopy before extubation to ensure that the airway is clean and that no dental foreign objects are present.

We are currently preparing a Japan-US comparative study on the actual use of PTPs in dental anesthesia (Research Ethics Committee of Kanagawa Dental University approval number 941). Dental anesthesiologists in both countries are invited to participate in the study.

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