

## A novel and safe method for oral awake endotracheal intubation

Changsheng Zhang<sup>1</sup>, Massimiliano Pirrone<sup>2</sup>

1. Department of anesthesia, The First Medical Center of Chinese PLA General Hospital, Beijing, China

[powerzcs@126.com](mailto:powerzcs@126.com)

2. IRCCS Fondazione Ca' Granda - Ospedale Maggiore Policlinico (Milano)

[massimiliano.pirrone@yahoo.com](mailto:massimiliano.pirrone@yahoo.com)

Oral endotracheal intubation is a crucial step for the management of respiration in both anesthesia and critical care. However, in some patients with potentially unstable airway or hemodynamics, the intubation process may be risky and challenging. Awake endotracheal intubation may be the technique of choice, but achieving adequate sedation and local anesthesia might be difficult.

In this abstract, we introduce a novel method for awake endotracheal intubation by videolaryngoscopy, which is safe for critically ill patients or patients with difficult airway. The key step of awake intubation is oropharyngeal topical anesthesia, which can be delivered by either oropharyngeal tetracaine spray or oral dyclonine hydrochloride mucilage administration. The detailed technique are as follows. First, sedation was provided by administering intravenous midazolam (0.03 mg/kg) and fentanyl (2 µg/kg) boluses. Then, the patient received topical anesthesia. For patients using tetracaine, they receive oropharyngeal spray (1%) every 2 minutes for three times. For patients using dyclonine, they receive oral administration of dyclonine hydrochloride mucilage 10 mg/10 ml, which the patient is instructed to keep in the oropharynx for three minutes before swallowing. Two minutes later, cricoid puncture was performed, and 2 ml of tetracaine (2%) injected to provide anesthesia of the tracheal mucosa. After another three minutes, the patient was instructed to swallow all the secretions and drug residues in the mouth and intubated with a video laryngoscope. The patient is amnesic of the intubation process, while being calm and able to sufficiently cooperate after endotracheal tube intubation, before sedation begins.



*Detailed oropharyngeal tetracaine spray method: 1. The soft palate was sprayed. 2. The radix linguae was sprayed while the patient was instructed to pronounce ha. 3. The epiglottis was sprayed after exposure through delicate video laryngoscopy.*

When comparing the effects of two oropharyngeal topical anesthesia methods, application of oral dyclonine is associated with fewer pharyngeal secretions, shorter intubation time, minor mean arterial pressure fluctuations, lower extubation bucking and sore throat rate perioperatively than the oropharyngeal tetracaine sprays (1%). For both methods, the observed side effects are rare.