COVER LETTER

Manuscript Title: Use of LMA Gastro in Oesophagogastroduodenoscopy (OGD) and endoscopic procedures

Dear Editor of Korean Journal of Anaesthesiology,

We are writing to submit the revised manuscript of letter to editor entitled “Use of LMA Gastro in Oesophagogastroduodenoscopy (OGD) and endoscopic procedures” for consideration for publication in your esteemed journal. We describe our initial experiences with the use of LMA Gastro™ Airway patients undergoing upper gastrointestinal endoscopy in our local context. We believe that this manuscript will be of interest to your readers, especially in your upcoming special issue on Airway Management.

This manuscript has not been published and is not under consideration for publication elsewhere. We have no conflict of interests to disclose. All authors of this manuscript have approved and agreed with submission.

Thank you for receiving our manuscript and considering it for review. We appreciate your time and we look forward to hearing from you.

Please contact me at the below address for your correspondence.

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To The Editor,

With increasing complexity and duration of minimally invasive upper gastrointestinal (GI) endoscopy, the need for deeper sedation or general anaesthesia (GA) during these procedures has grown rapidly. The ability to secure the airway while allowing for easy endoscopic access has hence also become more relevant. Sedation during an OGD is not without risks. Deep sedation can occasionally turn into GA, particularly when propofol is used. [1] In fact, sedated patients may have Patient State Index levels associated with GA. Deep sedation can potentially risk airway and respiratory compromise. [1] In a retrospective analysis of 73,029 GI endoscopies, 72% of peri-procedural cardiac arrests were airway management related. [2]

The Laryngeal mask airway (LMA) LMAGastro™ Airway (Teleflex Medical, Athlone, Ireland) is a cuffed peri-laryngeal supra-glottic airway (SGA) with a dedicated endoscopic channel that accommodate a maximum outer diameter of 14mm which suits all standard endoscopes. Its design features also include a channel for oesophageal intubation, a separate
channel with terminal cuff for lung ventilation, an integrated bite block and cuff pressure indicator. It comes in three available sizes - #3 (30-50kg), #4 (50-70kg) and #5 (70-100kg). In a single-arm study in conjunction with Teleflex, Skinner et al. reported no endoscopic insertion failures and a first endoscopic attempt success rate of 95.6% in a group of 300 patients who underwent upper GI endoscopy. [3] In a recent prospective observational study, Terblanche et al. also showed that LMA Gastro™ had an airway insertion success of 99% and first-attempt endoscopy success rate of 93%. The median lowest intra-operative oxygen saturation was 98%. [4].

We describe our initial experiences with the use of LMA Gastro™ Airway in two patients undergoing upper gastrointestinal endoscopy in the local context. Both patients consented to the publication of this study via written informed consent. For both cases, a suitably sized LMA Gastro™ was inserted after standard routine general anaesthesia protocol and GA was maintained with volatile agents.

Case 1 was that of a 65-year-old Chinese man (Height 175cm, weight 58.9kg; BMI 19.23kg/m²) background history of hypertension and recurrent oesophageal cancer with previous Ivor-Lewis oesophagogastrrectomy who underwent OGD and stenting of recurrent oesophageal cancer under GA. An LMA Gastro™ #4 was inserted successfully on the first attempt after induction by a senior anaesthesiologist. The cuff was then inflated with air until the integrated cuff pressure indicator was at the green level which corresponded to a pressure of 60cmH2O on the manometer. The positioning of the SGA was satisfactory with a grade 1 equivalent laryngeal view when checked with a #5.5 flexible bronchoscope. The LMA cuff fitted well around the glottis. Oropharyngeal leak pressure obtained was 38cm H2O. A standard 12mm
OGD scope was inserted through the LMA’s endoscopic channel and the endoscope was seen passing directly into the oesophagus. However, the surgeon was unable to pass the stent delivery system through the oesophageal stricture, thus the paediatric scope was inserted and balloon dilatation with stent insertion was performed. The procedure took one and half hour.

Case 2 was on a 19year old Malay male (Height 178cm, Weight 58.2kg; BMI 18.37kg/ m²) who presented with persistent globus sensation for OGD evaluation. Similarly, a LMA Gastro™ #4 was inserted successfully in the supine position under GA and the cuff was inflated once again to a corresponding pressure of 60cm H2O on the manometer. The LMA cuff also fitted well around the glottis with an OPLP of 37cm H2O. An Olympus GIF-H260 video gastroscope with 9.8mm distal end diameter was then inserted smoothly without any issues. The whole procedure took 45minutes.

There were no unexpected intraoperative and postoperative complications noted for both cases. Both patients also did not report any oropharyngeal discomfort like sore throat or dysphonia and the procedurists had no difficulty in introducing the gastroscope through the LMA Gastro™ lumen. The LMA Gastro™ can also act as a longer version of the oral bite block that is usually used to aid the insertion of the gastroscope and may even help to facilitate the passage of the gastroscope to direct it straight to the upper oesophageal sphincter for an easier route.

Up to date there are still no randomised trials comparing LMA Gastro™ to the usual endoscopic practices. Currently in Singapore, LMA Gastro™ is the only supraglottic airway device available for use in gastric endoscopic procedures... [5]
Having an airway with endoscopic access can potentially help prevent complications of sedation such as loss of airway, hypoventilation, hypoxaemia and pulmonary aspiration while avoiding haemodynamic swings and paralysis associated with tracheal intubation. This is especially important in patients whom sedation is more challenging due to pre-existing medical conditions such as morbid obesity or severe sleep apnoea. It also help to shorten extubation and recovery time when compared to tracheal intubation. Moreover, the LMA Gastro™ can serve as a useful rescue device should the patient's airway be required to be secured midway through the OGD in the lateral position as compared to tracheal intubation which can be challenging in such a position, thus providing a patent airway that is less invasive than a tracheal tube yet more secure than just an oropharyngeal airway.

In conclusion, we report our positive experiences with the new LMA Gastro™ airway in upper gastrointestinal endoscopies. We hope that this report may spur more dedicated research into the advanced uses of LMA Gastro™ such as those in various clinical settings such as emergency situation and high risk groups of patients with ASA physical status III and IV.
References


Diagrams attached

Figure 1. Laryngeal mask airway LMA Gastro™ Airway with patient in left lateral position