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A modified Bailey’s manoeuvre for supraglottic airway continuum using LMA Protector™

We read with interest the case series by Tan and coworkers,^[1] and we would like to make some comments.

The role of supraglottic airway devices (SADs) is widely recognised in international guidelines.^[2]

We strongly support the use of SADs as intubation aids (especially when poor tolerance to apnoea is expected). We encourage the use of a flexible bronchoscope (FB) inspection through SADs for vocal cords function and status before extubation, particular for thyroid surgery. The need for eventual re-intubation with bronchoscopic assistance could be easily and safely managed through an in-situ SAD, and we believe further benefits may be achieved with laryngeal mask airway (LMA)-Protector™ (LMA-P – Teleflex Medical, Athlone, Ireland) in this specific setting.

Due to the manufacturing material (silicone) and device flexibility, LMA-P is highly adaptable, and we recently introduced LMA-P-oxygenated and -visualised

intubation procedures in obese patients. Intubation is always performed using a FB with a pre-mounted tracheal tube connected to oxygen source aiming to extend safe apnoea time and minimise desaturation during airway instrumentation [Figure 1]. We also use LMA-P for smooth extubation, but differently from Tan’s report,^[1] as we adopt a modified Bailey’s manoeuvre leaving the LMA-P in place through the duration of the anaesthetic procedure.

First, we noticed that some combination of LMA-P and endotracheal tubes sizes and manufacturers might make the LMA-P removal procedure difficult or at risk of inadvertent extubation, despite the use of stabiliser-rod or Magill forceps. We emphasise

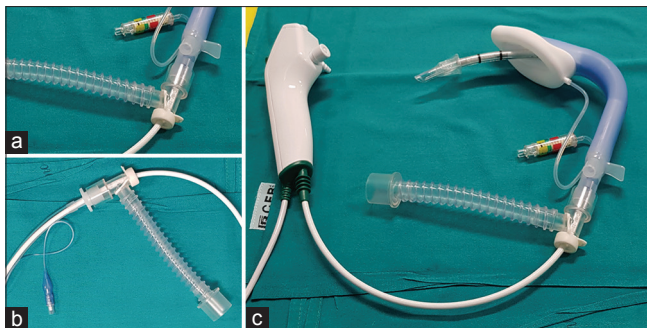


Figure 1: LMA-Protector (LMA-P)-oxygenated and -visualised intubation procedure: (a) detail of catheter mount connected to endotracheal tube (ET) passed into LMA-P with disposable bronchoscope inside ET; (b) detail of bronchoscope-catheter mount – ET connection; and (c) final assembly to perform intubation through LMA-P. At any time during intubation, ET cuff may be inflated and ventilation provided through catheter mount connected to respiratory circuit

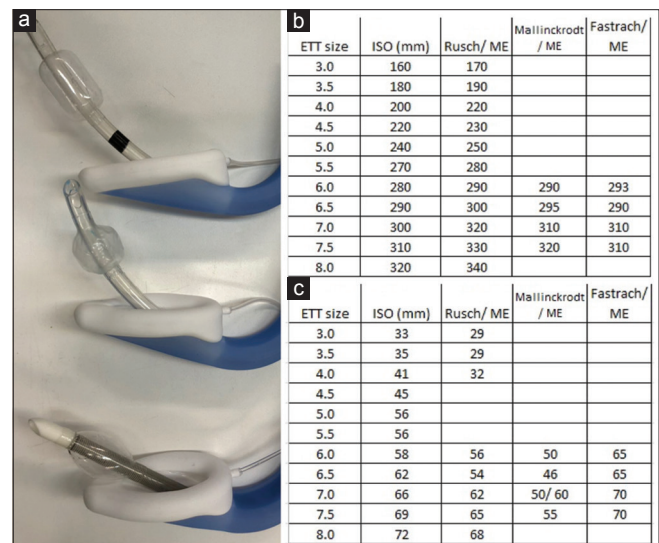


Figure 2: (a) Note different lengths of same size (7.5) endotracheal tube (ET) through a #4 LMA Protector™ (LMA-P); from up to bottom, Teleflex (Teleflex Medical, Athlone, Ireland), Smiths (Smiths Medical, Minneapolis, MN, USA), and LMA-Fastrach™ (Teleflex Medical, Athlone, Ireland) reinforced silicon-tipped ET. In all cases, ET connector (not visible) was stopped at LMA-P connector, (b) minimum length of different sizes/brands ET, and (c) maximum distance from tip to maximal end of cuff of different sizes/brands of ET

the evidence that even the same-size endotracheal tubes might have different lengths and relatively different tracheal cuff positions with respect to tube's tip [Figure 2].

Apart from avoiding inadvertent extubation, leaving LMAP in place might also offer extra-protection against potential (micro)-aspiration, thanks also to the posterior chamber reservoir acting as a further defence line. The tracheal tube's cuff represents a valuable but not absolute defence against pulmonary fluids' penetration, especially in head and neck surgery.^[3]

Additionally, leaving the LMAP in place reduces airway instrumentation in the pre-extubation phase, with no need to reinsert the mask behind the endotracheal tube in place.

LMAP has often been shown to be challenging to insert, and the presence of an endotracheal tube could make it more difficult and a source of extra-stimulation for the patient (whereas the purpose of the Bailey's manoeuvre is to minimise extubation-related stimulation). This is why we suggest Tan and coworkers to consider this alternative technique.

We would also like to remark the benefit of waking up the patient with the LMAP in-situ, thanks to its 'stenting' effect on the upper airway, which is known to be at risk of collapsibility and obstruction, especially in obese or sleep apnoea patients.^[4]

We would encourage use of embedded cuff monitor instead of inflating LMAP with a standard manufacturer's recommended pressure of 60 cmH₂O. This way, inadequate anaesthetic plan or cuff malpositioning/folding might also be detected.^[5] In this perspective, we observe that in Figures 1a, 2a, and 2c of Tan's report,^[1] the LMAP cuff seems somewhat a little overinflated, either the LMAP's position is not deep enough in upper oesophageal sphincter, as epiglottis and vocal cords plan appear a little squeezed by a probably supra-distended cuff.

As a final remark, we agree on the need for a smooth extubation strategy in case of thyroid surgery, but we would like to underline some *caveat*: the Bailey manoeuvre has been originally described to support smooth emergence from anaesthesia,^[6] but it cannot

be recommended as a safe extubation strategy whenever a difficult airway was encountered. In the case of glottic or subglottic pathology or issues (oedema, iatrogenic intubation-related trauma, tracheal stenosis etc.), limited or poor SADS' performance has to be predicted or expected.^[7] Fibre-optic control through the LMAP might also be considered before the removal of the endotracheal tube so as to assess the presence of a laryngeal oedema that could compromise airway patency immediately after extubation. In these cases, an extubation over an airway exchange catheter or a dedicated (staged) extubation set may be preferable.^[7]

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Conflicts of interest

Massimiliano Sorbello: Research and development and preclinical testing of the LMA Protector™. Paid Consultancy with Teleflex. Cory Gaconnet: Research and development and preclinical testing of the LMA Protector™. Paid Consultancy with Teleflex. Marcus Skinner: Research and development and preclinical testing of the LMA Gastro™ and LMA Protector™. Paid Consultancy with Teleflex. Gerardo Cortese: The author declares no conflict of interest.

**Massimiliano Sorbello¹, Gerardo Cortese²,
Cory Gaçonnet³, Marcus Skinner⁴**

¹Anesthesia and Intensive Care Clinic, AOU Policlinico Vittorio Emanuele, Catania, ²Anesthesia and Intensive Care, AOU Città della Salute e della Scienza, Torino, Italy, ³Department of Anesthesiology, Naval Medical Center San Diego, San Diego, California, USA, ⁴FANZCA, Department of Anaesthesia and Perioperative Medicine Royal Hobart Hospital, Hobart, Tasmania, Australia

Address for correspondence:

Dr. Massimiliano Sorbello,
Viale Vittorio Veneto 109, Catania - 95127, Italy.
E-mail: maxsorbello@gmail.com

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