Case Report

Safe Extubation with Totaltrack® Video Laryngeal Mask

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Abstract

The endotracheal tube should be removed as soon as the patient no longer requires an artificial airway, and each intubation should result in an extubation at the end of the procedure. The problem is that every extubation could represent a potential reintubation due to extubation maneuver failure. From a safety point of view, tracheal tube implies that a stable airway condition can become unsafe, thus entering a vulnerable and therefore potentially dangerous situation. Respiratory complications after tracheal extubation are associated with significant morbidity and mortality. Planning for tracheal extubation is a critical component of a successful airway management strategy, and Bailey maneuver has been mentioned for safe extubation. Process improvements in this clinical area are still needed because extubation failure may lead to severe outcomes. TotalTrack® Video Laryngeal Mask (VLM), used as a supraglottic airway device in a variation of Bailey extubation method, allows minimally interrupted ventilation during a Two-Phase extubation plannification.

Key words: Airway, Airway Management, Extubation.

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Introduction

Extubation has an important role in optimal patient recovery after surgery, but, although elective, is often fraught with complications.[1]. Extubation is as important as intubation and requires proper planning, because developing preplanned strategies for extubation improve patient safety and outcomes.[2]
TotalTrack® VLM (Video Laryngeal Mask) (Medcom Flow, Barcelona) allows minimally interrupted ventilation during tracheal intubation and extubation under continuous video guidance [Figure 1].
We report a Two-Phase extubation plannification with TotalTrack® VLM case.

Case Report

A 56-year-old male patient ASA 3, OSA with CPAP, obesity (BMI >35 Kg/m2) and arterial hypertension. Shoulder Arthroscopy scheduled. Our plan was use Totaltrack® VLM in intubation and extubation as supraglottic airway device (SAD) in a variation of Bailey extubation method.[3]
The patient was intubated with Totaltrack® VLM without incidents [Figure 2]. Rigid support was removed [Figure 3], and the cuff of the mask deflated.
When surgery ends, we reconnect Totaltrack´s camera to assess the larynx, reinflate the cuff, and remove the endotracheal tube (ETT) [Figure 4]. Using as a SAD, when spontaneous ventilation was recovered, we wake up the patient, remove the mask and check the absence of incidents.

Discussion

Pre-existing airway concerns, such as difficult mask ventilation, intubation, obesity and obstructive sleep apnoea (OSA) make mandatory a wary extubation. After non-systematic reviews about extubation management (using databases, Google Scholar and expert opinions) the incidence of extubation failure varies between 6% and 47%. Extubation failure and subsequent re-intubations are associated with an overall increase of the mechanical ventilation duration, increased mortality, need for tracheostomy and higher medical costs.

Figure 1: TotalTrack® VLM.

Algorithms recommend an extubation strategy as a logical extension of the intubation process. The extubation planning should prevent hemodynamic and cardiovascular reflex responses, the presence of difficult airway at initial airway management or delayed recovery after the surgical intervention. Successful extubation depends on the ability to tolerate spontaneous breathing without mechanical ventilatory support and the ability to maintain a patent airway once the ETT is removed.

The Bailey method deals with this stage by extubating the patient deep and allowing waking up quietly on a SAD, it also involves a blind technique to place SAD before removing the ETT.

We used Totaltrack® VLM as SAD in Bailey´s maneuver to allow us a viable and safe extubation strategy but with continuous visualisation and uninterrupted ventilation, changing from Deep anesthesia to Superficial anesthesia at the end of the surgery, controlling gradual awakening, seeing the vocal cords, achieving to remove our device once the patient is ventilating correctly.[4]

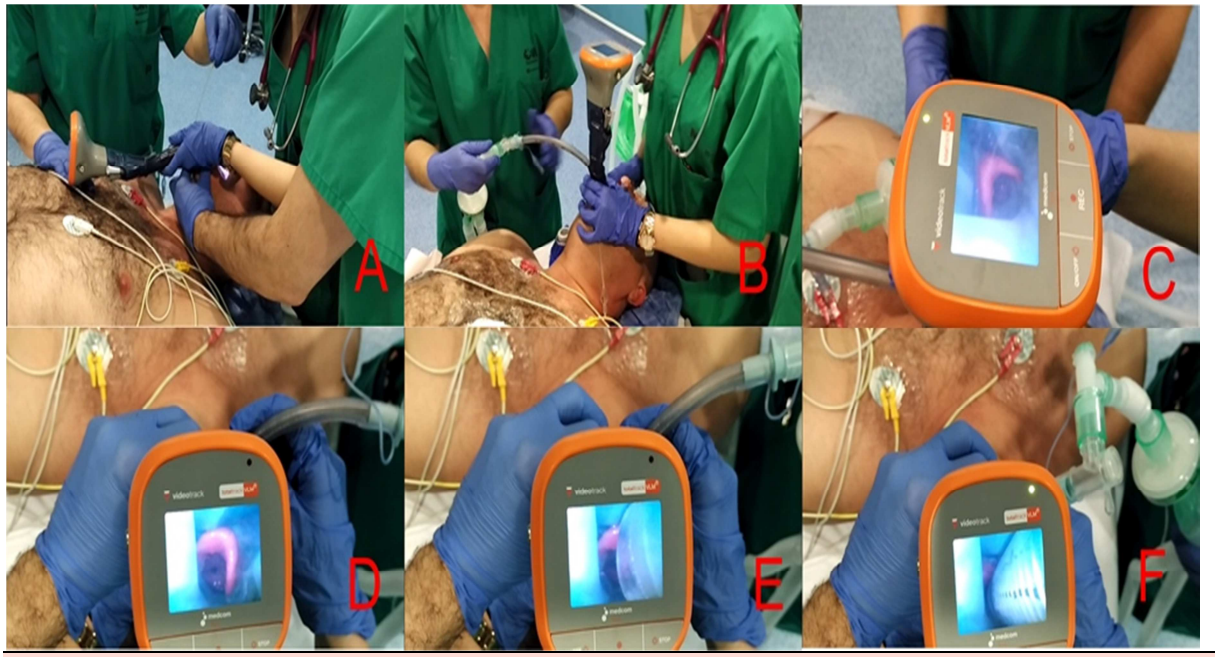

Figure 2: Intubation, A to F.

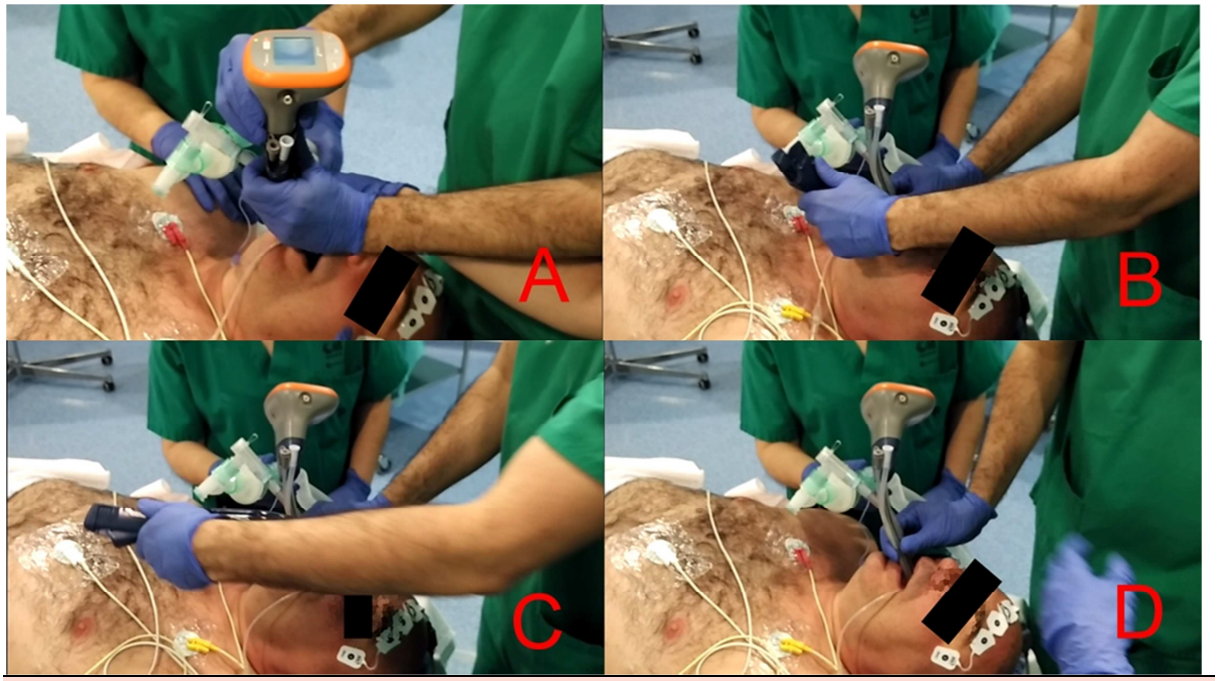

Figure 2: Extraction, A to D.

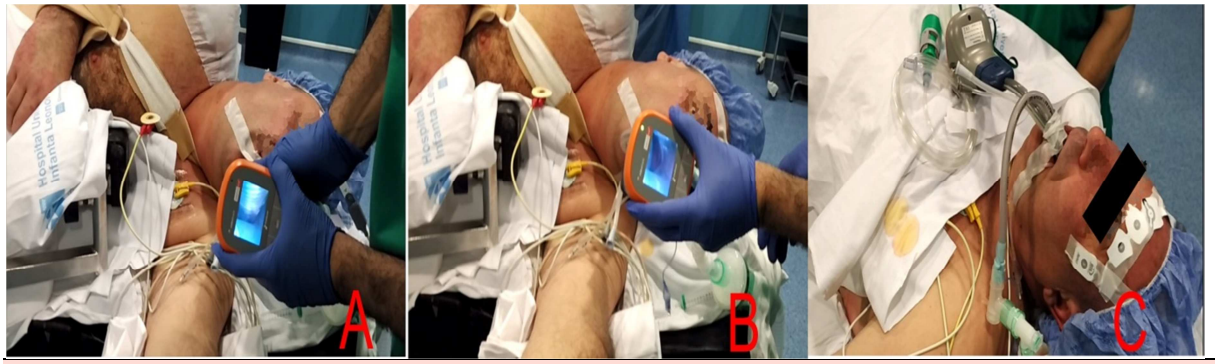

Figure 4: Extubation, A to C.

Conclusion

1. Even if airway management was easy at the intubation, difficulties might appear at extubation.
2. Laryngeal mask exchange is included in extubation guidelines with proven benefits, smoother extubation, with lower haemodynamic disturbances, a lower cough incidence and a better tolerance.
3. Totaltrack® VLM performs a two-phase extubation: removal of the ETT, ventilation through the supraglottic device, and removal of the laryngeal mask.

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