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Title: Use of the LMA Supreme in pre-hospital difficult airway management		
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Summary:

54 year old trauma patient, attended by the helicopter service in Houston. The patient was unconscious with massive airway bleeding. Access to tracheal intubation was not possible. The LMA Supreme™ was successfully inserted at the first attempted and ventilation with self inflated bag was effective with no leakage. Gastric tube was not used due to urgent need of extrication. The patient was ventilated for 30 minutes, had a cardiac arrest before extrication and died at scene.

Full text:

Use of the Laryngeal Mask Airway Supreme in pre-hospital difficult airway management

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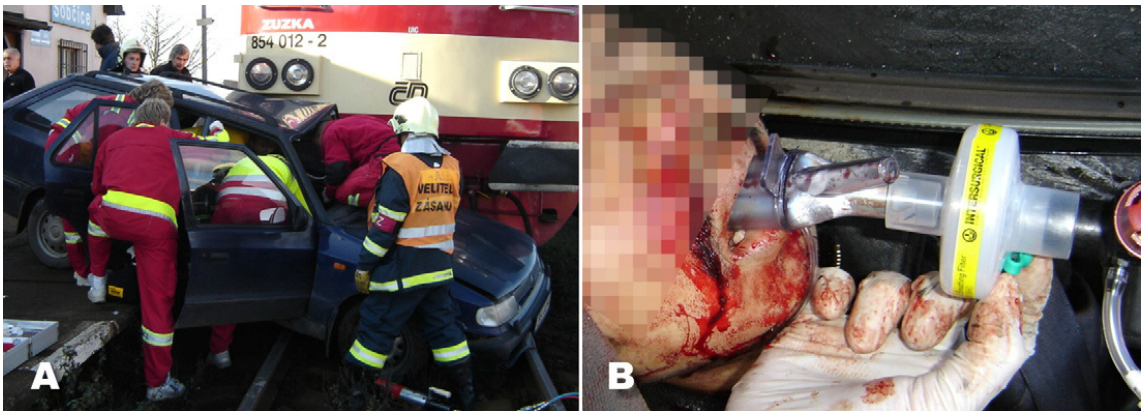

Fig. 1 (A) The scene of a car-train accident. (B) The driver’s head was trapped between the seat and the train bumper. The LMA-S was used immediately to secure the airway.

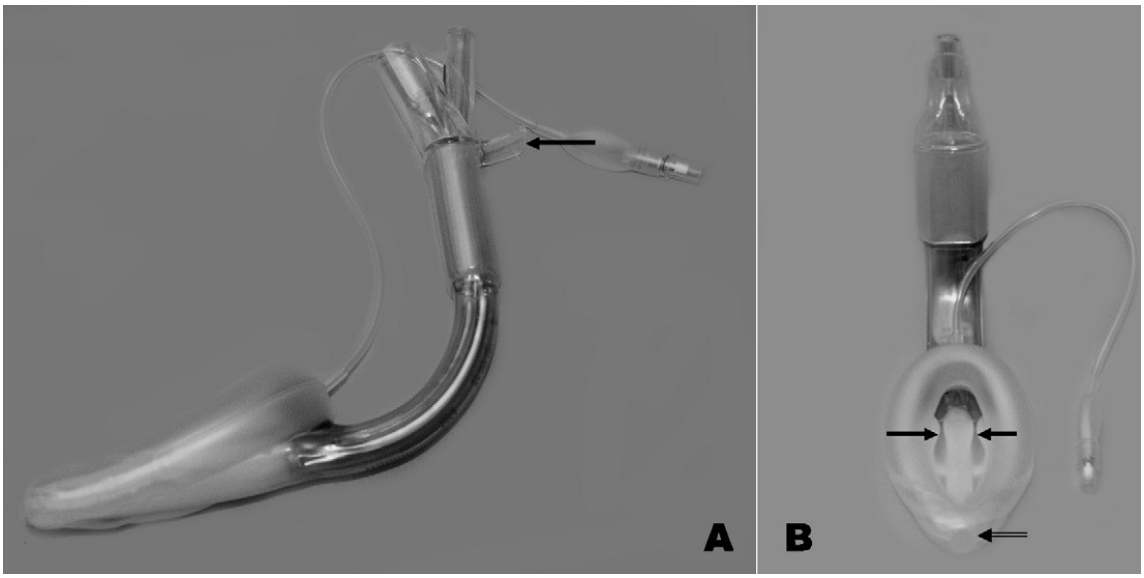

Fig. 2 (A) The LMA-S has a preshaped, semi-rigid shaft that facilitates the insertion of the device from any position. Also, there is a bite block on the proximal end of the shaft and a tab for securing the device in place (black arrow). This tab is also used to determine the correct position of the device inside the airway. (B) The LMA-S has two ventilating ports (black arrows) and a centrally located gastric access port (open arrow) that allows for passage of a 14 French gastric tube.

The Helicopter Emergency Medical Service (HEMS) was dispatched to the scene of an accident (Figure 1). A train had struck a car on the left side, wedging the 54-year-old driver's head between the seat and the train's bumper. The patient was unconscious and breathing spontaneously. There was heavy airway bleeding from severe maxillo-facial injuries and access for tracheal intubation was not possible. The Laryngeal Mask Airway Supreme (LMA-S) was immediately inserted from in front of the patient by the HEMS anaesthesiologist (7 years experience) on the first attempt to manage the patient's airway. Ventilation with a self-inflating bag through the LMA-S was effective with no air leak. The LMA-S protected the larynx from airway bleeding. Controlled ventilation continued for 30 min. The patient had a cardiac arrest before he was extricated and died at the scene. Autopsy showed haemorrhagic brain contusion, multiple skull fractures, and internal bleeding. Establishing a secure airway is difficult in patients with serious head or facial injuries or if they are trapped inside vehicles. Even in experienced hands, direct laryngoscopy and tracheal intubation is difficult or impossible when patient access is limited. The LMA-S is a new, single-use, airway device that is suited for emergency airway management (Figure 2). The integrated gastric access tube of the LMA-S is important because it enables a gastric tube to be passed. The gastric access tube alone of the LMA-S itself may not be an effective evacuation channel during massive regurgitation or vomiting. In our patient a gastric tube was not inserted because of the urgent need for extrication. In a recent study, LMA-S insertion by novice users was successful on the first attempt in 96% of patients (Ferson, scientific abstract at American Society of Anesthesiologists Annual Meeting, October 2007, San Francisco). The HEMS had only recently been provided with LMA-S samples and received manikin training in its use. This case was the HEMS first use in a patient. The LMA-S is a useful alternative to tracheal intubation in settings where tracheal intubation is difficult or where paramedics are not allowed to perform tracheal intubation.

Conflict of interest

Dr. Ferson is one of a group of physicians that serve on the Scientific Advisory Board for the LMA Company. He personally does not receive any compensation. He donates his honorarium to further research, education, and training related to supralaryngeal airways.