ABSTRACT

Objective: To discuss an algorithm for managing the airway in patients presenting with a King LT in place.

Design: A retrospective single institution case series review.

Methods: This study followed the management of three patients who presented to a tertiary academic medical facility emergency department following placement of a King LT at an outside hospital or in the field. Clinical history at admission as well as each patient’s hospital course was evaluated. We discuss the management of the airway in each of these cases and use these to help design an algorithm for improving outcomes in patients with a King LT in place.

Results: In each of the three cases presented, the Otolaryngology Department was consulted for definitive airway management. In two of these patients, the airway was successfully secured using endotracheal intubation. Only one patient required tracheostomy. We discuss an algorithm for managing these patients to try to avoid tracheostomy, which includes assessing the airway with flexible endoscopy and then proceeding with intubation by Seldinger technique or intubation using a video laryngoscope. In some cases, tracheostomy may still be required.

Conclusions: The King LT is a valuable tool available in the field to help to temporarily secure the airway. Otolaryngologists should have an appropriate airway algorithm for managing patients with a King LT in place in order to minimize the need for a tracheostomy.

CASES

Patient 1: 56 yo F with altered mental status with King LT placed at outside hospital due to failed attempts at intubation. Patient had anterior tongue swelling secondary to the King LT. Examination by anesthesia in the OR demonstrated the main port of the tube in the esophagus, with concerns for loss of airway if tube exchange attempted. Tracheostomy was performed. Patient was decannulated on POD 6, and required outpatient closure of a tracheocutaneous fistula.

Patient 2: 14 yo M in MVC with placement of King LT during transport. Flexible bronchoscopy through the King LT did not allow visualization of the larynx and inability to pass an endotracheal tube over the bronchoscope using Seldinger technique transnasally. Ventilation became difficult and the King LT was removed and a GlideScope was used for intubation. Patient was extubated on POD 13.

Patient 3: 75 yo M who was unresponsive after a fall, had placement of King LT by paramedics. Patient had significant anterior tongue swelling. Examination in the OR through the King LT showed normal laryngeal anatomy, but a tube exchanger could not pass through the King LT into the larynx. The GlideScope was used to visualize the larynx, a bougie was placed after deflation of the cuff and ETT was placed using Seldinger technique.

DISCUSSION

- Placement of the King LT often results in significant soft tissue swelling in the airway, likely from compromise of venous drainage from the tongue, which can make endotracheal intubation challenging. The swelling is often observed to be limited to the anterior tongue and resolves after removal of the King LT.
- Flexible fiberoptic laryngoscopy may be used to determine the location of the King LT in the airway.
- Previous studies have demonstrated an inability to pass a bougie through the King LT ventilation port using cadaver and simulator models, which we experienced on our patients. Placement of a bougie may also be limited by the angle needed to pass through the port into the larynx.
- The GlideScope may be passed next to the King LT to visualize the larynx and a bougie may be placed through the larynx and patient can be intubated by Seldinger technique. The cuff of the King LT may need to be deflated or completely removed to allow adequate visualization with the GlideScope.
- Tube exchange may be most safely performed in the operating room if appropriate equipment is not available in the ER.

CONCLUSIONS

The King LT is a valuable tool available in the field to help to temporarily secure the airway. Otolaryngologists should have an appropriate airway algorithm for managing patients with a King LT in place, with avoidance of unnecessary tracheostomy if possible.

REFERENCES