

Traumatic Laryngeal Mask Airway Insertion cause A Severe Pulmonary Aspiration of Blood Case Report and Review of the Literature

Ibrahim Zahran, MD,JBA*

A patient who had an unusual and severe bleeding due to traumatic laryngeal mask airway insertion. In this case the bleeding caused a life - threatening complication .It demonstrates that the laryngeal mask airway (LMA) failed to protect the lower airway in the present case.

Bahrain Med Bull 2001;23(2):100-1.

Laryngeal mask airway (LMA) insertion is not infrequently complicated by pharyngeal trauma and bleeding. Previous studies have reported the presence of blood in the upper airway following Laryngeal mask airway insertion but the amount of the blood was not reported to be significant.

THE CASE

A 55 year old male has been admitted for a high ligation of varicose vein to the right limb. Preoperative examination was good and all investigation including platelets count, INR were within normal limits. Following induction with propofol 160mg and fentanyl 100µcg. LMA size 4 was inserted uneventfully at the first attempt. The LMA had been lubricated, inflated with 5 ml of air, once positioned in the hypopharynx inflation was completed with 20 ml of air and the patient was allowed to breathe spontaneously. Anesthesia was maintained with isoflurane 1%, O₂ 40% and Nitrous Oxide 60%, Monitoring included continuous ECG, end tidal Co₂ , pulse oximetry and noninvasive blood pressure measurement at five minute interval .Anaesthesia proceeded uneventfully for the first 45 minutes, pulse oximetry remained above 97%. There were no episodes of straining, coughing or any evidence of airway obstruction, other parameters were within normal limits.

Towards the end of the surgical procedure, sudden appearance of pink - stained frothy fluid inside the laryngeal mask was seen. On auscultation of the chest bilateral crepitations were heard. A presumptive diagnosis of pulmonary oedema was made, The LMA was removed and the trachea was intubated, the patient was ventilated with 100% O₂, resulting in O₂ saturation 99%. During laryngoscopy a small amount of fresh blood was seen in the oropharynx and between the vocal cords, blood gas analysis showed normal value, chest x-ray showed clear lung fields with no evidence of pulmonary oedema, tracheal suction showed diminish amount of fresh blood. Sixty minutes following the onset of signs, spontaneous respiration had returned, he was alert and had a normal cough reflex, no further tracheal blood had been aspirated and the decision was to extubate. Following extubation the patient coughed forcefully and

* Department of Anesthesia
King Hussein Medical Center
Amman - Jordan

expelled a long fibinous blood- stained mass, immediately his respiratory pattern returned to that seen prior to anesthesia.

Twenty-four hours later an ENT consultation was done and showed normal pharynx. The mass was sent for histopathological investigation and was reported to be a grey - brown coloured spongy cast of the trachea and bronchi measuring 240 mm in length and up to 14mm in diameter .The specimen comprised blood clot, squamous epithelium, mucus, and the blood clot showed no evidence of organization.

We believe that as the respiratory difficulty began after induction of anesthesia based on the clot histology, the most likely source of the cast is the bleeding from the small laceration in the pharynx . The cause of bleeding is due to the insertion of the laryngeal airway.

DISCUSSION

This case gives us a number of issues relating to the use of LMA. The first feature is that trauma of the pharynx following LMA insertion can lead to a significant airway bleeding and obstruction. Previous studies have been reported the presence of the blood in the upper airway following LMA insertion. A study by Brimacombe explored various method of LMA insertion¹. In this study the airway were fibreoptically examined through the LMA after its insertion. Blood in the larynx was found in 7 of 120 patients, but the amount has not been documented. In another study, Dingley investigated the incidence of sore throat following LMA insertion². In 22% of cases, blood was found in the pharynx after removal of the LMA. Again the amount of blood present has not been reported. The studies of Brimacombe and Dingley demonstrates that bleeding caused by laryngeal mask insertion is not uncommon. This case report represents an extreme example.

The second feature is the LMA does not necessarily prevent soiling at the lower airway, especially if the mask is malpositioned^{3,4}, significant amount of blood may be able to pass the laryngeal mask cuff and reach the trachea and bronchus.

Finally, this patient may has been successfully managed with fibreoptic examination of the airway following discovery of the blood, intervention with removal of the clot through a rigid bronchoscope.

CONCLUSION

Insertion of the laryngeal mask airway is a simple technique but it can cause a serious complications as in this case. The laryngeal mask airway failed to protect the lower airway from soiling. Significant amounts of blood were able to pass the laryngeal mask cuff and reach the trachea and bronchi.

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