



Laryngeal Mask Airway Prevented Pulmonary Aspiration in an Obese Patient with Massive Gastric Regurgitation

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Laryngeal mask airway (LMA) is used for airway management in anaesthesia and in emergency medicine. The LMA plays a helpful role in management of situations where manipulation of the head or neck for endotracheal intubation is difficult or unsuccessful¹. Aspiration of gastric contents with LMA occurs in 2 per 10000 patients². It is almost similar to tracheal intubation in elective patients with the incidence of 1.25 per 10000 patients³.

It is totally accepted that classic laryngeal mask cannot protect lungs from regurgitated stomach contents because it sits only in pharynx without insertion to the trachea and suctioning cannot be performed through it⁴.

Most of case reports concern aspiration with laryngeal mask^{4,5}. In contrast, we report that classic LMA prevented aspiration of gastric contents in an obese patient even with massive gastric regurgitation.

Case Report:

A 66 year old man, ASA II, was admitted for elective laminectomy due to L4-L5 vertebral canal stenosis. In preoperative evaluation he had severe truncal obesity (BMI 36 kg/m²) and large neck circumference (47cm). He did not have any history of gastroesophageal reflux. In airway examination, Mallampati class III was estimated. The patient and his accompany were informed of potential difficult airway. Vital signs and paraclinical studies were normal.

In the operating room, the patient was premedicated with 2mg midazolam, 10µg sufentanyl and 10 mg morphine. After pre-oxygenation by mask for 3 minutes 450 mg sodium-thiopental (STP) was administered but all successive attempts to ventilate the patient even by four hand face mask ventilation and Geudel airway was unsuccessful, so 2 mg/kg succinyle choline was rapidly infused intravenously, to go through rapid sequence intubation. laryngoscopy with Macintosh metallic blade #3 and # 4 revealed grade 4 of Cormack and Lehane, which was not improved by head manipulation



and BURP manoeuvre. Endotracheal intubation was failed twice with and without using the stylet. A gum elastic buggie was tried two times which went through the oesophagus. Arterial saturation decreased to 65% and proseal LMA was not available. Then classic LMA No.5 was inserted successfully, its cuff was inflated with 20 ml air and fixed. End tidal carbon dioxide was elevated at this time. Unfortunately, the patient developed massive regurgitation of gastric content which was aggressively sucked nasally and orally. We induced the patient in a head down tilt position. After stabilization, spontaneous ventilation maintained with 100% oxygen and isoflurane. Flexible fiberoptic laryngoscope was inserted through nasal cavity. There was no fluid or material in trachea and nasal intubations was done by Armored tube No.7 after Laryngeal mask airway was removed.

In post-operation follow up, the patient had no signs or symptoms suggesting aspiration pneumonia. Physical examination of chest, temperature, CBC and chest X-ray were normal, without any significant post-operation change.

Discussion:

We had an obese patient who was anticipated to have both difficult airway and full stomach. According to American society of anaesthesiologists' recommendation, the airway management of choice for this patient was awake fiberoptic endotracheal intubation. But we were not certain that awake fiberoptic tracheal intubation which required intense laryngeal, pharyngeal, tracheal sensory block or sedation, could prevent pulmonary aspiration. So we planned rapid sequence endotracheal intubation for his airway management. But this challenging condition obliged us to use laryngeal mask airway.

About five years ago, Keller and colleagues stated about twenty case reports of gastric content aspiration in relation to LMA that 19 of them were with classic LMA, they report three more cases in their own series, as well⁴.

It seems that there is a general concern about pulmonary aspiration associated with LMA. However LMA can be a practical barrier at level of upper oesophageal sphincter if it is placed appropriately⁶. In one meta-analysis of published literature on the LMA to 1993, no increased risk of aspiration with LMA was found comparing to tracheal intubation². Recently Bernardini and his colleagues after analysis of 65712 procedures concluded the same findings⁷.

Abdi and co-workers report pulmonary aspiration during difficult airway management of a morbid obese patient with LMA⁵. Meanwhile Brain noted that obesity can increase risk of pulmonary aspiration⁸.

This case report describes difficult airway management of an obese patient with massive regurgitation. Despite the large amount of regurgitated gastric contents, classic LMA in association with aggressive oropharyngeal suctioning and tilted head down position and active laryngeal closure reflex protected lung from aspiration in our case. Although we do not recommend applying LMA in a patient who is at risk of gastric content regurgitation, but it may be inevitable to use it in an emergency airway management.



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