

Case Report: Anaesthetic Management of a Patient Posted for Total Laryngectomy

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Abstract: *Laryngectomy is always a difficult surgery both for surgeon and anaesthesiologist. The condition can get worse when such patients appear with advanced-stage laryngeal cancer, requiring a definitive surgery along with thyroid gland resection. Apart from anesthetic obstacles in managing the disturbed anatomy, management of difficult airway during the perioperative period can be a huge challenging task. Carcinoma larynx creates unique airway problems in which mask ventilation and laryngoscopy may be difficult. Airway management is a very critical factor that needs priority. We are reporting a case posted for hemithyroidectomy and laryngectomy where we anticipated a difficult airway pre-operatively. Thyroidectomy and laryngectomy in patients with laryngeal tumour can be smoothly and effectively carried out by using C-MAC guided flexometallic ET tube intubation followed by low tracheostomy instead of elective tracheostomy.*

Keywords: Propofol, CMAC Video-laryngoscope, tracheostomy, Portex tracheostomy tube

1. Introduction

In patients with laryngeal cancer, it is generally suggested that en-bloc resection of tumor along with resection of half of the thyroid gland on the same side of laryngeal cancer should be done. Apart from anaesthetic difficulties in managing the deranged anatomy, management of difficult airway during the peri-operative period can be a huge tough task. Such radical dissection can cause numerous surgical and anesthetic challenges during the perioperative period. [2] Managing airways is of prime importance in such patients both during intraoperative and postoperative period. [3] We are reporting a case posted for hemithyroidectomy and laryngectomy where we anticipated a difficult airway pre-operatively.

2. Case Presentation

A 55 year old male patient came to the ENT OPD with complaints of difficulty in swallowing, voice change and inspiratory stridor for past 3 months posted for total laryngectomy under General Anaesthesia. In the pre-anaesthetic evaluation, no co-morbidities, no allergies were stated.

2.1 Anaesthesia Management

Patient was shifted to the OT, and standard monitors Electrocardiogram, Noninvasive Blood Pressure monitoring, Pulse Oximetry were connected. 18G IV cannula secured on

the dorsum of the left hand. During preoperative evaluation with videolaryngoscope laryngeal inlet, vocal cords are relatively free. After discussing with ENT surgeon we decided to do intubation with help of CMAC videolaryngoscope, as conventional laryngoscopy may cause bleeding due to injury to growth. Patient was preoxygenated with 100% O₂ for 3 minutes with 8 lit/min of O₂, induced with injection Propofol 2mg/kg, injection succinylcholine 2mg/kg IV given for relaxation and intubated with 7 mm ID Flexometallic Endotracheal tube (ETT) with CMAC Videolaryngoscope [figure 2] and connected to mechanical ventilator.

Anaesthesia was maintained with O₂, N₂O, sevoflurane and atracurium besylate. Laryngectomy was performed [figure 3]. Flexometallic endotracheal tube reinserted through the tracheal stoma [figure 4]. After completing the procedure, the endotracheal tube was replaced with Portex 8mm Tracheostomy tube [figure 5, 6].

Good post-operative care was given in RICU with intravenous fluids, nasogastric feeds. Tracheostomy care with regular suctioning and downsizing done. Oral suctioning avoided as it may cause an oesophageal fistula. Recovery was good [figure 7]. On day-15 tracheostomy tube was removed and patient was explained about tracheostomy stoma care and he was advised for a Speech therapy consultation.



Figure 1



Figure 2



Figure 3



Figure 4



Figure 5



Figure 6



Figure 7

3. Discussion

Difficult airway management is of major concern for anaesthesiologist. Such challenges can be regularly encountered during neck surgeries such as thyroidectomy, laryngectomy, parathyroidectomy, oral surgeries, and various syndromes involving head and neck. Thyroidectomy and laryngectomy are difficult surgical procedures both in terms of surgeon's and anaesthesiologist's perspective. Two procedures done simultaneously adds enormous difficulties particularly if such patients have any associated comorbidities. These procedures need careful handling of the

patient and meticulous planning for surgical and anesthetic interventions. The patency of glottis is maintained by consciousness. Complete obstruction of glottis may happen after induction of anesthesia due to relaxation of pharyngeal and laryngeal muscles.

Laryngeal cancer is one of the common cancers of neck region which are known for its notoriety in spreading to adjoining structures and creates difficulty in breathing and deglutition. Invasion of the thyroid gland by laryngeal cancer has been reported in 1-30 percent of cases. Total or subtotal thyroidectomy has been a matter of debate, but in this case, it

was decided to go for total laryngectomy and hemithyroidectomy. Oropharyngeal and neck lesions at all times pose airway problems during induction and endotracheal intubation. Management includes formulation of different plans preoperatively to reduce the morbidity and mortality associated with difficult airway management.

In this case, the difficult airway trolley was prepared ready for both anticipated and unanticipated airway problems. The decision to perform endotracheal intubation with the help of C-MAC videolaryngoscope was made after a pre-anesthetic checkup and after discussing with the ENT surgeon [figure 1]. Though fiberoptic intubation stays the gold standard, its availability and clinical expertise in its use are two big drawbacks. Patient was induced with propofol adequate relaxation was attained with succinylcholine then patient was intubated with 7mm flexometallic ET tube with help of C-MAC videolaryngoscope. The use of armoured flexometallic ET tube was very helpful, as the curvature of the PVC tube can obstruct the airway during surgery. Post-operatively these patients need even more vigilant care due to the high occurrence of potential complications associated with laryngectomy tracheostomy and care of tracheostomy is added problem.

The possible complications may include but are not limited to pain, nausea and vomiting, hemorrhage, thyroid storm, recurrent and superior laryngeal nerve injury, hypothyroidism, pneumothorax, tracheomalacia, and laryngeal oedema. The recovery of the patient was adequate with no incidence of nausea or vomiting. Intra-operative administration of IV ondansetron 4mg has effectively offered an antiemetic action for a prolonged period. Recovery was good. On day-15 tracheostomy tube was removed and patient was explained about tracheostomy stoma care and he was advised for a speech therapy consultation.

4. Conclusion

Thyroidectomy and laryngectomy in patients with laryngeal tumour can be smoothly and effectively carried out by using C-MAC guided flexometallic ET tube intubation followed by low tracheostomy instead of elective tracheostomy.

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