

Case Report

Ca Cheek-Difficult to Ventilate and Intubate for Emergency Exploratory Laparotomy, Lightwand as a Rescue Technique

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Abstract

The anaesthetic management of patient with craniofacial pathology often presents unique challenges because soft tissue and bony abnormalities can affect the airway and influence airway management. In emergency cases having difficult airway it's always a dilemma how to go about the case but in our case of Ca cheek with difficult to ventilate and intubate posted for emergency E-lap, we use Lightwand as a intubating aid successfully. They all had a laryngeal view of Cormack-Lehane grade IV and were impossible to intubate using direct laryngoscopy. We consider that lightwand guided intubation technique may be a useful alternative approach to fiberoptic intubation technique in managing the emergency difficult airway.

CASE REPORT

Our patient 30yr male non diabetic and non hypertensive presented with complains of pain in abdomen since 1 day and vomiting since 3 days was to be taken up for emergency exploratory laparotomy (E-lap) surgery in view of a suspected perforation peritonitis which was confirmed with guarding rigidity on palpation and X-ray abdomen showing gas under the diaphragm.

Patient had an ulcerating mass on his left cheek which opened into the oral cavity. Patient gave history of a swelling in the same place since 1 year insidious in onset gradually progressive painless which over the last 3 months ulcerated to finally open in the oral cavity directly leaving a visible opening of 4cm x 3.5cm with irregular margins. Patient was diagnosed at a speciality hospital to have carcinoma of cheek. Patient denied undergoing any radiotherapy/chemotherapy/surgery for the same. Patient was a chronic tobacco chewer since 15 yrs. Mouth opening was 1 finger.

Baseline vitals were HR of 130 bpm, BP 110/70mm Hg, RR-24/min, sPO2-96% on room air. Mouth opening was restricted to 1 finger because of fibrosis and painful movements. Neck movements were normal. Blood investigations were in normal range except Hb-9.9g%. ABG- pH7.36, pCO2-40, pO2-134mm

Hg, HCO3-23mmol/l. A 18G i.v. cannula was secured in the pre-operative room.

Since the surgery was urgent and an anticipated difficult airway situation was there difficult airway cart was quickly and thoroughly prepared which included facemasks of sizes 2,3,4, oropharyngeal and nasopharyngeal airways, endotracheal tubes flexometallic and portex ranging from 7 to size 8.5, gum elastic bougie, stylet, classic LMAs size 3,4, intubating LMA with stabilizer and armour tubes, lightwand, cricothyroidotomy set, ambu bag, suction catheters. Suction machine was properly checked. ENT surgeons were also called stand by in case a tracheostomy was required. Anaesthesia machine was checked thoroughly and emergency drugs and resuscitation equipment kept ready.

An awake intubation was planned. After explaining due risks to patient and taking a written informed consent, reserving a bed in the ICU patient were wheeled in the OR. Monitors were attached -pulse oximeter, NIBP, ECG. Patient was given supine position.

Preparation was done for awake intubation. Procedure was explained to patient. Patient was cooperative. Bilateral superior laryngeal nerve block with Inj. Lignocaine 2% (2cc on each side), transtracheal block with Inj. Lignocaine 4% (2cc), oral

lignocaine spray 10% to anaesthetize oral cavity and posterior oropharyngeal wall. I.V. lignocaine without preservative 2% (3cc) was given to blunt pressor responses. Gargles were not possible due to open oral cavity.

Using a lightwand passed nasally into the larynx a portex endotracheal tube no.7.5 was slipped over it into the trachea. Lightwand was then removed. Position of the tube was confirmed with capnography and Et CO₂. Cuff was inflated and air entry also confirmed on auscultation. Tube was then secured firmly. Immediately I.V. premedication was given (Inj. glycopyrolate 0.2mg, Inj. midazolam 1mg, Inj. pentazocine 30mg, Inj. ondansetron 4mg, Inj. pantoprazole 40 mg. Patient was induced with Inj. thiopentone 250mg I.V. ventilation was checked once again. Muscle relaxant Inj. Vecuronium 4mg I.V was given and patient put on ventilator. Patient was maintained on O₂, N₂O, Halothane intermittent propofol (70mg) in divided doses and Inj. Vecuronium (1mg).

Intraoperative vitals were in following ranges: HR 100-140/min, NIBP 110/66 - 154/100mm Hg, EtCO₂ 28-40 mmHg. IV fluids- 3 units of crystalloids and 1 unit of Hetastarch 3% was given. Blood loss was 100 ml. about 850 ml of frank pus was drained intraperitoneally. Urine output was 450 ml. A prepyloric perforation was surgically repaired. Inj. Hydrocortisone 100mg I.V. and Inj. Paracetamol 1g infusion was given I.V. Antibiotic Inj. Metronidazole 100cc was given. Suture site was locally infiltrated with Inj. Bupivacaine 0.25% (15cc)

Reversal (Inj. glycopyrolate 0.4mg and Inj. Neostigine 2.5mg) was given at end of surgery when patient had good spontaneous respiratory efforts. Inj. Lignocaine without preservative 2% was again given to blunt the pressor response. Protective reflexes returned but patient was hyperventilating. ABG revealed pH-7.33, pCO₂-47, pO₂-124, HCO₃-19.2. Patient was not extubated. It was planned to continue ventilation electively. Patient was sedated with Inj. Midazolam 1mg and Inj. Clonidine 60mcg. Patient was shifted to ICU on T-piece with O₂ @6L/min.

Post op vitals- HR 110/min, BP-135/95mm Hg, EtCO₂-32. Patient was kept on SIMV+PS mode for 3 days. Chest physiotherapy was given regularly with antibiotics and nebulization. Patient was put on CPAP/PS mode overnight on 3rd night. On 4th day morning ABG was pH-7.41, pCO₂-39, pO₂-184, HCO₃-24. After a proper T-piece trial patient was extubated.



Figure 1 Ca cheek with restricted mouth opening.



Figure 2 Ca cheek with restricted mouth opening.



Figure 3 The correct configuration of the Trachlight together with the endotracheal tube prior to intubation.



Figure 4 Patients vitals on monitors during procedure of intubation.



Figure 5 Monitor showing EtCO₂ waveform confirming tracheal placement of endotracheal tube.

DISCUSSION

This review of our experience with anesthesia in patients with certain craniofacial pathology indicates that the airway can generally be adequately managed. One must be prepared,



Figure 6 Chest Xray PA view shows gas under diaphrag.



Figure 7 Xray abdomen showing.

however, to make repeated attempts to secure the airway if necessary.

All airway management algorithms [10-13] show fiberoptic intubation as the final step in the management of difficult airway. Difficulties and failures do occur occasionally [10,14], and the failure rate of emergency fiberoptic intubation may be as high as 13% [15]. In contrast, lightwand guided intubation using the principle of transillumination has been shown to be a simple technique that is easily learned. Unlike fiberoptic intubation, it is much less likely to be affected by secretions or blood. The lightwand can be cleaned and sterilised readily and is easily transportable to unusual settings. A firm anterocaudal jaw thrust, which is a necessary part of lightwand guided intubation, helps to maintain a patent airway by elevating the epiglottis [16]. Moreover, the precurved lightwand with gentle anterior traction may pull the base of the tongue away from the laryngeal aperture. Therefore, we feel that lightwand guided intubation should be recommended as the first line option in patients who can be ventilated but have a failed laryngoscopic intubation [16,17]. In our practice, lightwand guided intubation

is performed on children of all ages and has become a routine part of pediatric anaesthesia. When faced with a difficult airway or a failed laryngoscopic intubation, we usually use the lightwand guided intubation technique as our first choice and the fiberoptic intubation technique as backup.

CONCLUSION

Our experience in managing the airway in patients with Ca cheek demonstrates that it can be managed successfully and the challenges posed by this are best handled by experienced anaesthetists and team work. Adequate preoperative planning and having the appropriate apparatus available are keys to success.

Finally, we suggest some points for this difficult airway management:-

- (1) Have an organized plan;
- (2) Call 2 or more senior colleagues for help early;
- (3) remain calm;
- (4) Prepare several types of airway devices such as gum elastic bougie, LMA, lightwand and flexible fiberoptic bronchoscope;
- (5) Endeavor to become expert in each new airway device and technique, and practice with a normal airway;
- (6) Preoxygenate the patient with 100% oxygen for at least 5 minutes;
- (7) Avoid use of muscle relaxant before successful intubation in any difficult airway situation.

REFERENCES

1. Hung OR, Stewart RD. Lightwand intubation: I--a new lightwand device. *Can J Anaesth.* 1995; 42: 820-825.
2. Hung OR, Pytka S, Morris I, Murphy M, Stewart RD. Lightwand intubation: II--Clinical trial of a new lightwand for tracheal intubation in patients with difficult airways. *Can J Anaesth.* 1995; 42: 826-830.
3. Hung OR, Pytka S, Morris I, Murphy M, Launcelott G, Stevens S, et al. Clinical trial of a new lightwand device (Trachlight) to intubate the trachea. *Anesthesiology.* 1995; 83: 509-514.
4. Ellis DG, Stewart RD, Kaplan RM, Jakymec A, Freeman JA, Bleyaert A. Success rates of blind orotracheal intubation using a transillumination technique with a lighted stylet. *Ann Emerg Med.* 1986; 15: 138-142.
5. Ellis DG, Jakymec A, Kaplan RM, Stewart RD, Freeman JA, Bleyaert A, et al. Guided orotracheal intubation in the operating room using a lighted stylet: a comparison with direct laryngoscopic technique. *Anesthesiology.* 1986; 64: 823-826.
6. Friedman PG, Rosenberg MK, Lebenbom-Mansour M. A comparison of light wand and suspension laryngoscopic intubation techniques in outpatients. *Anesth Analg.* 1997; 85: 578-582.
7. Holzman RS, Nargozian CD, Florence FB. Lightwand intubation in children with abnormal upper airways. *Anesthesiology.* 1988; 69: 784-787.
8. Davis L, Cook-Sather SD, Schreiner MS. Lighted stylet tracheal intubation: a review. *Anesth Analg.* 2000; 90: 745-756.
9. Xue FS, Yang QY, Liao X, He N, Liu HP. Lightwand guided intubation

- in paediatric patients with a known difficult airway: a report of four cases. *Anaesthesia*. 2008; 63: 520–525.
10. Walker RW. Management of the difficult airway in children. *J R Soc Med*. 2001; 94: 341-344.
11. Crosby ET, Cooper RM, Douglas MJ, Doyle DJ, Hung OR, Labrecque P, et al. The unanticipated difficult airway with recommendations for management. *Can J Anaesth*. 1998; 45: 757-776.
12. Henderson JJ, Popat MT, Latto IP, Pearce AC. Difficult Airway Society guidelines for management of the unanticipated difficult intubation. *Anaesthesia*. 2004; 59: 675–94.
13. Caplan RA, Benumof JL, Berry FA, et al. Practice guidelines for management of the difficult airway: an updated report by the American Society of Anesthesiologists Task Force on Management of the Difficult Airway. *Anesthesiology*. 2003; 98: 1269–77.
14. Rehman MA, Schreiner MS. Oral and nasotracheal light wand guided intubation after failed fiberoptic bronchoscopy. *Paediatr Anaesth*. 1997; 7: 349-351.
15. Delaney KA, Hessler R. Emergency flexible fiberoptic nasotracheal intubation: a report of 60 cases. *Ann Emerg Med*. 1988; 17: 919-926.
16. Davis L, Cook-Sather SD, Schreiner MS. Lighted stylet tracheal intubation: a review. *Anesth Analg*. 2000; 90: 745-756.
17. Agro` F, Hung OR, Cataldo R, Carassiti M, Gherardi S. Lightwand intubation using the Trachlight: a brief review of current knowledge. *Canadian Journal of Anesthesia*. 2001; 48: 592–593.

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