

Case Report: Use of Video Laryngoscopy during Code Blue

Tamil Selvan

Abstract: 82-year-old male was brought to EMD in a gasping state by relatives. Pulse: Absent, BP: Not Recordable RR: GPS Spo2: 60% on Room Air CNS: Unresponsive Pupils dilated not reactive to light PA: Soft, non-tender CVS: s1 s2 heard RS: B/L AE Reduced & Crept present. ECG showed Pulseless electrical activity. Code blue was activated CPR was started as per AHA guidelines. Attempted for Advance airway management failed due to difficult airway. Emergency Cricothyroidotomy attempted failed due to short neck, Laryngeal edema. GVL is not available in EMD Informed to OT to get. After multiple attempt ET inserted. ROSE achieved developed Surgical emphysema. Patient sustained brady arrest, CPR was started as per ACLS protocol & continued for 20 mins, CPR was stopped i/v/o futility and declared dead.

Keywords: Video Laryngoscopy, Code Blue

1. Introduction

Tracheal intubation is one of the most commonly performed procedures in the Intensive Care Unit (ICU) & Emergency Medicine Department (EMD). Endotracheal intubation (ETI), considered to be the gold standard in securing the airway, is commonly performed using a direct laryngoscope (DL). In the ICU unlike in the operating room with controlled conditions, a significant proportion of this procedure can be associated with life-threatening complications.^[1]

Respiratory Therapists (RT) are expected to manage the airways of critically ill and injured patients presenting to the EMD. RT are trained, knowledgeable and skilled with a variety of intubation devices. These include both the conventional direct laryngoscope (DL) and GlideScope video laryngoscope (GVL). The intubation techniques of these two devices are considerably different.^[2]

2. Case Report

A 82 year old male was brought to EMD in a gasping state by relatives. He apparently developed breathlessness along with generalized weakness at about 11AM.

Patient had H/O B/L Knee pain (?Arthritis) and was bed ridden for 6 months. He was rushed to the hospital immediately when found unresponsive by wife. On arrival In EMD[at]1.45PM patient was Found Afebrile noise breathing-Obstructed airway. Pulse: Absent, BP: Not Recordable RR: GPS Spo2: 60% on Room Air CNS: Unresponsive Pupils dilated not reactive to light PA: Soft, non-tender CVS: s1 s2 heard RS: B/L AE Reduced & Crept present.

ECG showed Pulseless electrical activity. Hence Code blue was activated and CPR was started as per AHA guidelines. Intubation attempted with ETT no: 8 Very difficult airway (DA) i/v/o active fresh bleeding visualized on D L. Right floor of mouth trauma present, GVL was unavailable in EMD, bag mask ventilation started, Resistance present, laryngeal mask airway (LMA) Inserted, attempt failed. Emergency Cricothyroidotomy (CT) attempt failed because short neck, Laryngeal edema. Informed OT to get GVL, after multiple attempts via DL, ETT was inserted with size of 6.5. CPR was continued and inj. Adrenaline 1mg IV every 2 mins. Inj. Noradrenaline infusion was started[at]30 m/hr. ROSC achieved after 15cycles CPR[at]around 2: 30pm, ECG: showed LBBB. Patient was taken on ventilator Mode: Volume Assist Control (V-A/C): VT: 390ml, Peak flow: 35, PEEP: 12cmh2o: RR: 32bpm, Fio2: 100%, Pplate: 27cmh2o. Spo2 increased to 100%, ABG-s/o severe mixed acidosis, high lactates, hyperkalemia. correction Given.

POST ROSC VITALS:

HR: 116bpm BP: 140/75mmhg RS: Surgical emphysema CVS: s1 s2 Present Pupils: Dilated 3mm NRTL, BSL-170mg/dl. Shift to Icu/v/o Hemodynamic stabilization Cardiac & ENT Review CT-brain, neck, chest after Hemodynamically stable. CXR-chest-Left side EMPHYSEMA, & Multiple rib fractures. AT 1: 50hrs on Patient sustained brady arrest, CPR was started as per ACLS protocol & continued for 20 mins, CPR was stopped i/v/o futility and declared dead at 2: 20hrs.

3. Discussion

Difficult airway manifestation can be done by:

a) **Mallampati class:** Intraoral structures visibility⁽¹⁰⁾

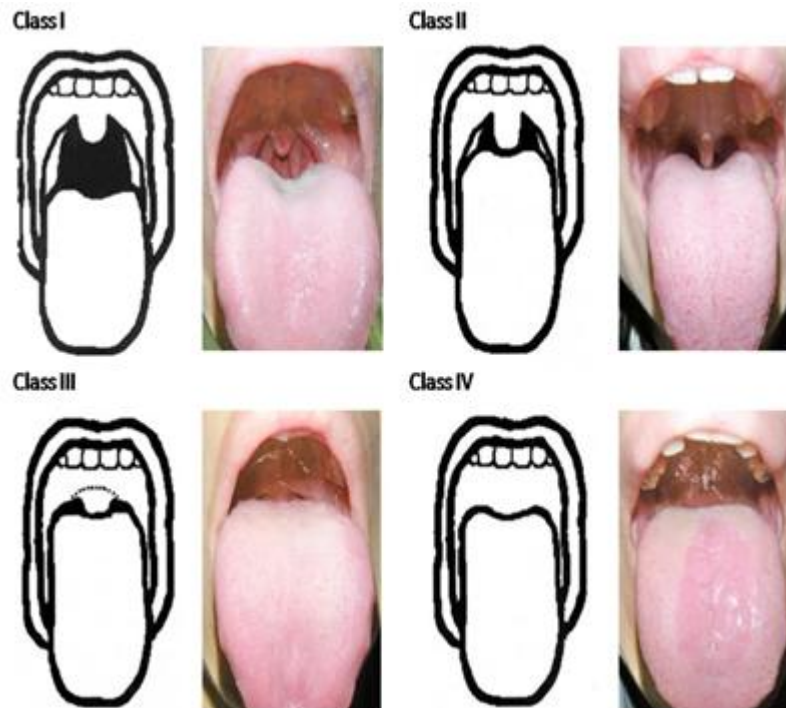


Figure 1: Class I Soft palate, fauces, uvula, pillars Class II Soft palate, fauces, portion of uvula Class III Soft palate, base of uvula Class IV Hard palate only

Difficult intubation = LEMON	Difficult BVM = BONES	Difficult LMA = RODS	Difficult surgical airway = SHORT
Look externally	Beard	Restricted mouth opening	Surgery
Evaluate 3-3-2 rule	Obese	Obstruction	Hematoma
Mallampati score	No teeth	Distorted airway	Obesity
Obstruction	Elderly	Stiff lungs	Radiation distortion
Neck Mobility	Sleep Apnea		Tumor

[9]

MACOCHA Score: This is a simple score developed for ICU patients which has been shown to differentiate between a difficult from a non-difficult airway in ICU patients. [1]

Factor	Points
Factors related to Patient	
Mallampati score iii or iv	5
Obstructive sleep apnea syndrome	2
Reduced mobility of cervical spine	1
Limited mouth opening less than 3	1
Factors related to pathology	
Coma	1
Severe hypoxemia	1
Factors related to operator	
Anesthesiologist	1
Total	12

0=easy; 12=very difficult [1]

The DA has been defined as the clinical situation in which a conventionally trained anesthetist experiences difficulty with mask ventilation of the upper airway tracheal intubation or both. [4]

GVL has enabled a 'look-around-the-corner'. The video technique allows a magnified display on the monitor [5]

Airway management (AM) is often required in the ICU or EMD and frequently in general wards. Hemodynamically unstable, Impending or Respiratory failure, Code Blue patients require emergent airway control. Such situations might be carried out by non-airway specialists and are considered extremely challenging procedures. [6]

The AM has undergone a dramatic transformation since the advent of GVL. GVLs have quickly gained popularity as an intubation device in a variety of clinical scenarios and settings, as well as in the hands of airway experts and nonexperts. Indirect view of the upper airway improves glottic visualization, including in suspected or encountered difficult intubation. [3] GVL actually improves ETI success rates, intubation times, and first-attempt success rates; and thereby a potential replacement to traditional DL. Advanced technology has heralded a wide array of models each with their own strengths, weaknesses, and optimal applications. Such limitations need to be better understood and alternative strategies should be available. The role of VL continues to evolve. Though it is clear VL expands the armamentarium not only for anesthesiologists but also for all healthcare providers potentially (RT) involved in AM. [3]

The management of the unanticipated DA in adults recommend that a VL should be immediately available at all times and that all anaesthetists & RT should be trained and skilled in their use. As per All India Difficult Airway Association 2016 guidelines, a maximum of 3 attempts with a direct or VL is recommended with a consideration to change in device/ technique/operator in between attempts. As per the Difficult Airway Society 2015 guidelines a maximum of 3+1 attempts with direct/VL is recommended in the management of unanticipated DA in adults. [7]

A DA situation Emergency Cricothyroidotomy (ECT) is recommended in most of the guidelines. There are several

problems associated with performing an ECT. With distorted neck anatomy, access to cricothyroid membrane may be limited. Cricothyroidotomy (CT) may be either unsuccessful or may cause serious complications. Soft plastic cannula of CT have a tendency to kink and may limit its long term use, while the more rigid type of cannula can cause damage to the posterior wall. More dreaded complication of the misplaced cannula, which is a real concern in cardiac arrest situations. [8]

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