



UNANTICIPATED DIFFICULT AIRWAY IN ROUTINE SURGERY CASE

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ABSTRACT Sometimes situation may arise when even well trained anaesthesiologist finds difficulty in ventilating the patient with bag-mask or difficulty in tracheal intubation or both.

We are reporting a case with no anticipation of difficult airway with can't ventilate situation. Male patient of 47 years of age was posted for Lumber Laminectomy in prone position under G.A. in prone position Routine pre-anaesthetic check up was done. The clinical history and physical examination findings did not indicate any finding which can anticipate difficult airway. On arrival in O.T. monitoring including Pulse oximeter, E.C.G. NIBP, EtCO₂ were connected. Ringer Lactate was started after I/V cannulation. I/V Propofol 100 mg was given, patient went into apnoea and there was stony hard feel on squeezing the bag for bag-mask ventilation. It was observed on Laryngoscopy that anterior surface of Epiglottis (Upper view of Epiglottis while patient lying down) had prominent blood vessels and upper margin of epiglottis was touching posterior wall of pharynx, which was leaving very little, almost no space for air to pass to larynx. Possibly this was thought to be reason for stony hard bag. The patient was intubated after lifting the epiglottis with styleted tube, the case was conducted in prone position. The subsequent anaesthesia and surgical procedures were uneventful.

KEYWORDS : Unanticipated airway Difficulty, Difficult airway

INTRODUCTION

Difficult airway is the clinical situation where a conventionally well trained anaesthesiologist finds difficulty in ventilating patient with bag-mask, difficulty in tracheal intubation, or both. The difficult airway is a complex interaction between patient factors, the clinical settings, and the skill of the practitioner.

We came across a case with no anticipation of difficult airway with can't ventilate scenario.

Description Of Case

A male patient 47 years (60 KG. weight) was admitted with complains of pain in lower back pain and was diagnosed to be suffering from Lumber Canal Stenosis. He was planned for Lumber Laminectomy under G.A. and to be operated in prone position.

Routine pre-anaesthetic check up did not reveal any H/O chronic respiratory disease, No H/O bronchial asthma or breathlessness, No H/O snoring. No H/O of IHD/ cardio-vascular disease, No H/O sleep apnoea, No previous H/O surgery under G.A. No history or finding suggestive of congenital disease states (e.g., ankylosis, degenerative osteoarthritis, subglottic stenosis, lingual thyroid or tonsillar hypertrophy. He was not taking any medication. On physical examination neck movements were found to be normal; his Mallampatti Grade was Gr. I. Teeth in upper and lower jaws were normal. Relationship of Maxillary and Mandibular incisors during jaw closure was normal. The shape of palate was normal. No upper airway pathology or anatomical anomaly could be identified by conducting a pre-procedure physical examination. General physical examination did not reveal any abnormal finding.

His routine PAC check up Blood Hb was 9.6 Gm % his urine examination and other routine investigations were normal. X-ray chest was normal. ECG did not show any sign suggestive of IHD.

On arrival in O.T. routine monitoring equipments including Pulse oximeter, E.C.G. NIBP, EtCO₂ were connected. After inserting 20 G I/V cannula Ringer Lactate was started. Patient was pre-oxygenated for 3 min with face mask and was given Inj. Glycopyrolate 0.2 mg, Inj. Midazolam 1.0 mg I/V, Inj. Fentanyl 100 micro gm I/V as premedication. He was given I/V Propofol 100 mg for induction of anaesthesia. Patient went into apnoea. The IPPV with bag-mask was attempted. There was stony hard feeling on squeezing the bag even after inserting Guedel's airway. The depth of anaesthesia was adequate

for allowing insertion of airway. Attempt to ventilate by other anaesthesiologist also failed. The Succinyl Choline was not given due to inability to ventilate with bag mask and patient was patient was made conscious. The SpO₂ was being monitored continuously, which remained above 90% throughout.

When patient was fully awake and was following the verbal requests fully, re-assessment of airway was done again on O.T. table while patient remained fully conscious. The neck movements and Mallampatti grade were re-confirmed and found according to PAC assessment.

Patient was able to open mouth widely. Since the patient was to be operated in prone position, the endo-tracheal intubation was necessary to maintain airway during surgery.

With above findings, it was decided to make one more guided attempt for induction and intubation.

The patient was pre-oxygenated for 3 min and 100 mg of Propofol I/V was given. The loss of eyelash reflex was noted. Patient went into apnoea again, bag mask ventilation was not possible again and stony hardness of bag was felt. With previous findings of airway examination in mind, 75.0 mg of succinyl choline was given and Guedel's airway was inserted. Still it was not possible to ventilate the patient. Immediately laryngoscopy was done to attempt intubation. The epiglottis was found to be longer and slightly wider. It was observed that anterior surface of Epiglottis (Upper view of Epiglottis while patient lying down) had few prominent blood vessels and upper margin of epiglottis was touching posterior wall of pharynx, which was leaving very little (almost nil) space for air to pass to larynx. Possibly this was thought to be the reason for stony hard feeling of bag on ventilation. Larynx was not visible on conventional view.

Immediately intubation with styleted E.T. tube was attempted, it was possible now to lift the epiglottis with help of styleted tube and intubation was done successfully. After confirmation of bilateral air entry in chest, I/V Atracurium 25 mg was given and patient was maintained on N₂O- Oxygen Isoflurane mixture and intermittent Atracurium, with controlled ventilation. At the end of surgery residual Neuro-Muscular block was reversed with Neostigmine- Glycopyrolate mixture.

Since there was no other predictable general clinical risk factor that

may cause an adverse impact on ventilation. The patient was planned to be extubated after he became conscious with intact airway reflexes and started following verbal requests of opening eyes, opening mouth, protrude tongue and raise arms, and had stable haemodynamics.

The anaesthesia and surgical procedures were uneventful.

Post operative ENT evaluation also revealed same findings. The video-laryngoscopy could not be performed due to economic status and unwillingness of patient. Post operative recovery was also uneventful.

DISCUSSION

The airway management is essential for conduction of intra-operative anaesthesia, sometimes challenging and life threatening situation arises when patient cannot be intubated and ventilated and alternate strategies are not ready for this type of unanticipated emergency situation.

“Can't intubate- can't ventilate” is an emergency life threatening situation in operation theatre during induction of anaesthesia. It is a frightening situation for the entire airway handling team. The reported incidence is 0.01 to 2.0 in 10,000 cases. [1]

There has been lot of advancements in assessment and management of airway but still the cases of difficult airway management in O.T. are being reported. This is probably because of low predictive value of estimation of airway difficulty with currently available techniques [2]. It accounts for 1-28% of all the mortalities related to anaesthesia. Needle cricothyrotomy followed by trans-tracheal jet ventilation or surgical cricothyrotomy are the recommended final life-saving treatments in the CVCI emergency as suggested by both the American Society of Anesthesiologists (ASA) and the Difficult Airway Society.[3,4]

Heinrich S, et al concluded that the general incidence of difficult laryngoscopy in pediatric anesthesia is lower than in adults. Their observations are that the risk of difficult laryngoscopy is much higher in patients below 1 year of age, in underweight patients and in ASA III and IV patients. [5]

Serocki G et al compared conventional blade laryngoscopy with video-assisted blade laryngoscopy and the GlideScope in Management of the predicted difficult airway and concluded that the video laryngoscope and GlideScope in particular may be useful instruments in the management of the predicted difficult airway. [6]

The adverse outcome associated with the difficult airway includes damage to teeth, airway trauma, unnecessary surgical airway, cardiac arrest, brain injury and even death.

For predicted difficult airway, ready availability of different types and sizes of airways, availability of Combitube, video laryngoscope, fibre-optic bronchoscope and preparation for retrograde guided intubation are vital. The other strategies are new alternative airway devices like ProSeal Laryngeal Mask Airway (LMA) and cuffed oro-pharyngeal airway.

A pre-planned pre-induction strategy for difficult intubation includes the consideration of various interventions designed to facilitate airway management, should difficult airway situation arises. These include (1) Awake intubation, (2) Video-assisted laryngoscopy, (3) Intubating stylets or tube-changers, (4) Superaglottic Airway for ventilation (e.g., LMA, laryngeal tube), (5) SGA for intubation (e.g., ILMA), (6) rigid laryngoscopic blades of varying design and size, (7) fiberoptic-guided intubation, and (8) lighted stylets or light wands.

During routine airway examination in PAC check up of our patient, no significant warning to anticipate airway difficulty and no predictor factor for difficult bag and mask ventilation were detected. Therefore no standby fibre-optic bronchoscope or crico-thyrotomy set was kept available.

CONCLUSION

The difficult airway with Can't intubate- Can't ventilate scenario can arise in any patient without anticipation hence due precautions should be taken and standby arrangements to meet sudden emergency should be kept ready. In such unexpected situation experienced help and special equipment may not be immediately available and general

anaesthetic has usually been administered. Our recommendation is that long acting muscle relaxant should always be administered after ascertaining easy bag mask ventilation during short acting muscle relaxant apnoea like succinyl choline apnoea. It should be ascertained that there is at least one trained additional anaesthesiologist who is readily available to help in difficult airway management.

The backup airway management plans should be kept ready in operation theatres. All anesthetists must also be trained in emergency invasive methods of securing airway like emergency crico-thyrotomy with cannula insertion, use of intubating bougies and jet ventilation techniques.

Foot notes:

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Conflict of Interest: None

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