Management of unanticipated difficult airway

Rajendrakumar Bolabandi., Bhageshwar Patel

Department of Anaesthesia, Al- Ameen Medical College, Vijayapura, Karnataka, India

Abstract

Unanticipated difficulty with endotracheal tube intubation may result in catastrophic outcomes, including cerebral anoxia and death. Even the most thorough assessment of the airway may not detect the possibility of difficult intubation and every anaesthetist should have a predetermined plan for dealing this situation. Alternative methods of managing the airway should be initiated after two or three unsuccessful attempts at intubation. This case report discusses the lacunae in airway assessment and the strategies adopted for sucessesful intubation in an unanticipated difficult airway.

Keywords: airway evaluation, difficult laryngoscopy, topical airway anaesthesia, awake intubation.

Introduction

Safe management of an unanticipated difficult airway is utmost important. It is nightmare for anaesthesiologist who despite adequate Pre-Anaesthetic Evaluation of airway encounters unanticipated airway difficulty. Here is a case report of difficult intubation due to anatomical factors and deficiency of thorough airway evaluation resulting in inadequate visualisation of vocal cords (Cormack and Lehane Grade 3a-b)

Case report

A male patient aged 36 years came with history of fall from coconut tree at a height of about 20 feet. Pt was treated for spinal shock soon after injury. Orthopaedic consultation was done a week later. On investigation CT revealed a fracture dislocation at T9-T10 with complete transaction at T10 with quadriplegia. Instrumentation was planned for providing quality life.

Pre-Anaesthetic evaluation (PAE) was done and airway appeared clinically normal. Laboratory investigations were within normal limits. Patient was kept nil by mouth for eight hours. Patient was premedicated with inj. glycopyrrolate 0.02mg/kg, inj. pentazocine 30mg, and inj. midazolam 2mg. Inj ranitidine 150mg and inj. metaclopramide 10mg was also given. After preoxygenation, GA was induced with propofol 1% 15ml, injection atracurium in dose of 0.75mg/kg IV. Laryngoscopy was done with McIntosh blade 4 after adequate muscle relaxation and to our surprise vocal cords were not visible. At second attempt after mask ventilation, only the tip of the epiglottis was visible. Cricoid pressure was given by an expert assistant, still vocal cords were not visualised. For the third time with external laryngeal pressure Cormack and Lehane scale did not improve. DAS guidelines plan C was made use by passing supraglottic airway (LMA) to ventilate the lungs[1-2] Once breathing attempts started reversal was given and safely extubated, case was abandoned. We informed the patient attenders regarding failure to intubate and may be referred to higher center where Fiberoptic bronchoscope is available, but patient and patient's attenders refused to go and we were left with option of tracheostomy and secure the airway or try another attempt with thorough airway assessment. ENT opinion was taken for perilaryngeal and vocal cord evaluation and was found to be normal. It was planned to intubate awake under topical anaesthesia. (difficult airway cart was kept ready with stand by ENT surgeon). The patient airway was re - evaluated taking care to elicit hidden history and detail airway examination. Patient gave history of undergoing previous dental surgery three years back and unilateral dentures were instituted which appeared so natural and patient did not reveal during earlier evaluation. Upper lip bite test was of grade 2 and the ratio of the distance from angle of the mandible to mentum and temporomandibular distance was also more than 1.4. Mouth opening was 2 fingers on operated side and 2½ fingers on non operated side (Figure-1). These lacunaes in airway assessment led to the situation of unanticipated difficult airway which otherwise would have been an

Address for Correspondence:

Dr. Rajendrakumar Bolabandi

Professor and HOD, Department of Anaesthesia, Al- Ameen Medical College, Vijayapura, Karnataka, India

E-mail: bolabandisuguna@yahoo.com

anticipated difficult airway. Fibreoptic bronchoscope is the gold standard for securing difficult airway. Since it was not available, we had to make use of available gadgets, techniques and skills. The other option to intubate was retrograde intubation, cricothyrotomy and finally tracheostomy to secure airway. As seen in the images patient was successfully intubated under topical anaesthesia with the help of gum elastic bougie, McCoy blade and external laryngeal pressure[3]

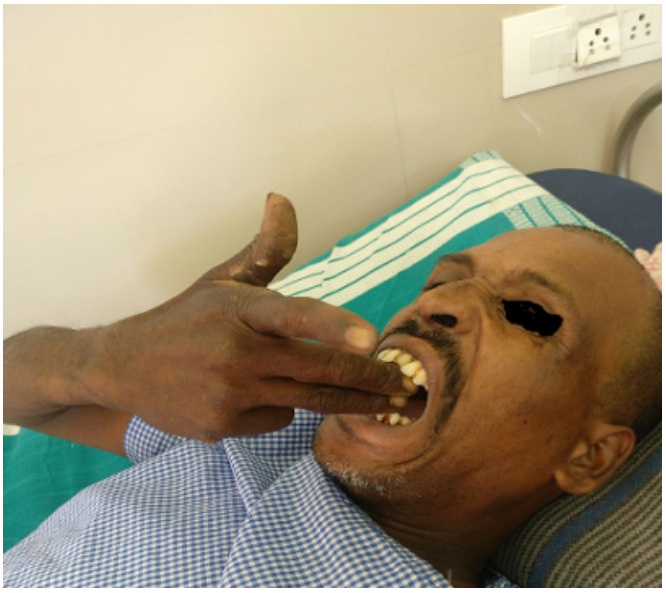

Figure 1: Mouth opening was 2 fingers on operated side and 2 ½ fingers on non operated side

Discussion

Most of the unanticipated difficult intubations are managed satisfactorily but problems with tracheal intubation can cause serious tissue damage and are the principal cause of hypoxaemic anaesthetic death and brain damage. Management of an unanticipated difficult tracheal intubation must therefore concentrate on maintenance of oxygenation and prevention of airway trauma.

In this unique case report, the change in patient's airway management indicates that the patient's airway anatomy has changed within past three years after dental surgery with custom-fit dentures not giving suspicion of previous surgery. The case demonstrates the need for thorough history taking, vigilant clinical airway evaluation, need for alternate airway strategy and dispels the assumptions made by some that previous uneventful management predicts uneventful airway management in future. The above mentioned factors were main cause for unanticipated difficult intubation[4].

Conclusion

Unanticipated difficult airway due to lacunae in history taking, patient not revealing the previous history of mandibular surgery 3 years back with denture which was custom made which was totally missed on PAE which was later realised as anticipated difficult airway and intubation was done successfully with better meticulous planning, technique, skills, expertise and usage of simple airway gadgets.

Learning Points:

The airway anatomy of individuals can change with previous trauma and airway surgeries, hence thorough airway assessment is essential and we must be familiar with the usage of modern and advanced life saving airway gadgets.

References

1. *Parmet JL, Colonna-Romano P, Horrow JC, Miller F, Gonzales J, Rosenberg H. The laryngeal mask airway reliably provides rescue ventilation in cases of unanticipated difficult tracheal intubation along with difficult mask ventilation. Anesth Analg 1998 Sep;87(3):661-5.*
2. *Handrson JJ, Popat MT, Latto IP et al. Difficult Airway Society guidelines for management of the unanticipated difficult intubation. Anaesthesia. 2004 Jul; 59(7):675-91.*
3. *Knill RL. Difficult Laryngoscopy made easy with a BURP. Can J Anaesth. March 1993;40(3):279-282.*
4. *Zeng Z, Tay WC, Saito T, Thinn KK and Liu EH. Difficult Airway Management during Anaesthesia: A Review of the incidence and solutions. J of Anaesthesiol Crit Care. 2018;1(1):5.*

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