



INTEGRATIVE APPROACH TO MANAGEMENT OF UNANTICIPATED DIFFICULT AIRWAY. A CASE REPORT.

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ABSTRACT

Biggest nightmare amongst anaesthesiologists is encountering difficult airway in emergency situations which can lead to serious complications like airway trauma, brain hypoxia and cardiopulmonary arrest. Any delay in management could be fatal. Quick recognition and prompt decision making is very important for reducing the potential of serious injury. The anaesthesiologists may encounter difficulty with anaesthesia administration in mask ventilation or placement of supraglottic airway (SGA), SGA ventilation, laryngoscopy, tracheal intubation or involvement of both ventilation and intubation. Airway complications require effective management at individual and hospital level. Introducing new techniques and analysis of failures encountered in old techniques plays pivotal role in improving outcomes and eradicating avoidable casualties including difficult airway cases.

KEYWORDS :

CASE REPORT

A 32 year male was operated for fracture shaft of femur after encountering with road side accident. The patient was operated under spinal anesthesia and intra-operative period was uneventful. The patient was shifted to post-anaesthesia care unit and vital monitoring was done. After complete regression of spinal anaesthesia, assessed using Bromage scale and stable vitals, the patient was shifted to trauma ward. After 6 hours, the patient developed sudden breathlessness and call to the emergency anesthesia team was sent. On Examination, the patient was not oriented with Heart Rate (HR) of 118 beats per minute, Blood Pressure (BP) of 90/60mmhg, Respiratory Rate (RR) of 30 cycles per minute and an oxygen saturation (Spo2) of 80% on simple face mask with oxygen flow at 15 liter per minute. Pulmonary embolism was suspected and decision to intubate the patient was taken. All vital monitors were attached, Rapid Sequence Intubation protocol followed and intubation was attempted with Miller's size 3 blade. The anaesthesiologist visualized the glottis opening but could not pass 8.0 mm endotracheal tube (ETT). The anaesthesiologist then changed to a 7.0 mm ET tube but was still unsuccessful in passing the tube below the vocal cords. Final attempt was taken to pass boogie through the vocal cords but was unsuccessful. The patient could not be ventilated with SGA or bag mask. Cannot Intubate & Cannot Oxygenate was declared. A surgeon was called from Trauma OT for emergency tracheostomy. For the rescue ventilation, the ET of size 7.0 mm was kept above the vocal cords and ventilation continued. The surgeon attempted tracheostomy but was unsuccessful in first-attempt. On further dissection, it was observed that a subglottic stenosis was present in trachea which was obstructing the passage of endotracheal tube & tracheostomy tube. On further dissection, tracheostomy was performed with 8.0mm cuffed tracheostomy tube and the patient kept on mechanical ventilation. The patient was further managed in the ICU.

DISCUSSION

Subglottic stenosis (SGS) is a constriction below the vocal cords & above the trachea, commonly involving cricoid cartilage ring. SGS commonly occurs after large scarring but other factors are also known to cause stenosis. Subglottic stenosis is of two forms - Congenital Subglottic Stenosis (CSGS) and Acquired Subglottic Stenosis (ASGS)⁽¹⁾. Congenital SGS is present since birth and Acquired SGS develops after birth and most common causes of Acquired

SGS are infection, trauma and long periods of intubation & ventilation. Based on diameter of subglottic stenosis in cross-section, Mayer-cotton classified subglottic stenosis into GRADE I (no obstruction - 50% obstruction.) GRADE II (51-70%) GRADE III (71-99%) GRADE IV (no lumen)⁽²⁾[Fig1]. Endotracheal intubation leads to 90% of SGS cases with 0.9-8% arising from difficult intubation⁽³⁾.

In Unusual cases like this, the cause of SGS is unknown, termed Idiopathic⁽³⁾. Encountering such situations raises concerns regarding management of such unpredictable SGS in future. Here comes the concept of, "Integrative medicine". For effective management of such unpredictable cases, every aspect of medical team should maintain open communication for multibranch approach. Ultraefficient communication is a vital component of successfully addressing this difficult airway patient. For example, collaboration between anaesthesiologists, anaesthesia technician, ICU staff and general surgery team ensuring optimal outcome⁽⁴⁾. Team work like this should be implemented more often in management of cases, emphasizing that the practice of medicine is performed with a "Integrative approach". In a case report by Raghunath N et al, similar difficulties were faced in the management of unanticipated difficult airway during an elective procedure which was managed by team approach. The possibilities of complications increase if no such Integrative approach is followed. This puts the patient at risk and increases the chances of poor management of difficult airway⁽⁵⁾.











Classification	From	To	Endoscopic appearance
Grade I	 No Obstruction	 50% Obstruction	
Grade II	 51%	 70%	
Grade III	 71%	 99%	
Grade IV	No detectable lumen		

Figure 1- Myer-Cotton classification, adapted from Myer et al.

CONCLUSION

The unanticipated difficult airway is anaesthesiologists biggest fear. Multiple factors play role in management of difficult airway like patients factors, co-morbidities, skills of anaesthesiologist & difficult airway preparation. Situations of difficult airway with unknown conditions like SGS, the anaesthesiologist need to head the team of airway care. Management should be by "Integrative approach" to guarantee best possible outcome for patient at all times.

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