



Anaesthetic Management of A Case of A Bilateral Temporo Mandibular Joint Ankylosis Secondary to Congenital Stuck Disc with left Frontal Intracerebral Space Occupying Lesion.

KEYWORDS

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ABSTRACT *The temporo mandibular joints are highly specialized bilateral joints comprising an articulation between temporal bone and mandible. It is a synovial hinge joint. Among the various causes of bilateral TMJ ankylosis congenital variant - stuck disc is common. Patients with bilateral TMJ ankylosis is a difficult airway situation with a severely restricted mouth opening, near total trismus and uncooperativeness while securing airway, in awake state. Awake fiberoptic nasal intubation remains a gold standard method for intubation in such cases. Blind nasal intubation, retrograde intubation and tracheostomy are other alternatives, but are associated with significant morbidity. However in all methods of awake intubations patient cooperation is required. We are presenting a case of bilateral temporo mandibular joint ankylosis secondary to congenital bilateral stuck disc with 5 mm mouth opening in a 30 year old female, who was posted for craniotomy and excision of frontal ICSOL. In this scenario the management of airway becomes a challenge and the patient was intubated successfully by awake fiberoptic nasal intubation and surgery continued with an uneventful recovery.*

INTRODUCTION:

patients with cranio facial disorders can challenge the anaesthetologist for securing airway. The TMJ ankylosis with restricted mouth opening presents with difficult intubation scenario. Hence anaesthetologist should prepare for advanced airway management and requires close observation in post-operative period.

CASE REPORT:

A 30 year old female patient with bilateral TMJ ankylosis was admitted in neuro surgery department ASRAM Medical College Eluru, West Godavari Dist, AP, for excision of frontal ICSOL (Meningioma). During pre-anaesthetic check-up, the history reveals patient had restricted mouth opening since birth. No history of trauma present. For the last few years the patient is taking diet with spoon in increased frequency and patient is not nutritionally compromised.

On examination patient was 68kg and height of the patient was 148 cm.pulse rate was 80 per min and supine blood pressure was 126/82 mm Hg on right arm. No history of other congenital abnormalities present. No history of surgery, allergies, bronchial asthma, epilepsy, jaundice, and diabetes. No history of blood transfusion. Systemic examination was normal. Patient complaining of headache and blurring of vision for which she was subjected to MRI Brain and diagnosed as having meningioma. Patient was very apprehensive.



Xray of normal individual showing patient with restricted mouth Subluxation TMJ when mouth opened.

Opening .

AIRWAY ASSESMENT

EXTRA ORAL: No Facial asymmetry
No hypoplastic mandible
Upper lip bite class 3
No receding mandible

INTRA ORAL: Mouth opening 5 mm
Mallampati grade 4
No loose or buck teeth



local anaesthesia with 4 %xylocaine with adrenalin for both nostrils

AIRWAY: Mouth opening was 5mm
TMJ movement restricted
Neck movements normal
Thyromental distance 6
Patency of both nostrils normal

Patient was subjected to X- ray bilateral TMJ with closed and opened mouth. Diagnosed as congenital bilateral stuck disc. All other lab investigations were with in normal range. The patient and patient relatives were counselled regarding nature of difficult airway and its management,

options like awake fiberoptic, blind nasal, tracheostomy and retrograde intubation. Informed consent was taken from both patient and patient relatives. The difficult airway management plan was discussed and decided to proceed with awake fiberoptic nasal intubation. The patient was accepted under ASA 1 expecting difficult intubation and risk consent was taken.

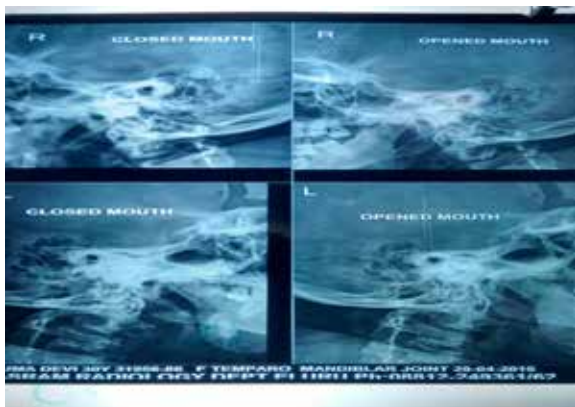
The patient was kept on nil per oral night before surgery and given 0.5mg alprazolam as patient was very apprehensive. 0.1% xylometazoline nasals. On the morning of the surgery patient shifted to operating room. An intravenous line with 18G secured and two drops of 0.1% xylometazoline instilled in both nostrils. Nebulization given with one in four lakh 2% lidocaine. Two drops of 0.1% xylometazoline instilled in both nostrils. Nebulization given with one in four lakh 2% lidocaine. Nasal pack with 4% lignocaine with adrenaline given for 3minutes. The patient was premedicated with glycopyrrolate 0.2mg IV, midazolam 2mg IV, fentanyl 100mcg and propofol 20mg stat. The patient was kept in spontaneous ventilation with light sedation.

Superior laryngeal nerve block was performed. The patient's skin was cleaned with 5 % betadine solution. The cornu of the hyoid bone was located below the angle of mandible. The nondominant hand was used to

displace the hyoid bone with contralateral pressure, bringing the ipsilateral cornu and the internal branch of the superior laryngeal nerve

nearer. Then 25G needle was inserted and 2 ml of 2% lidocaine without adrenaline was then injected after negative aspiration of blood. Same method was also repeated for the other side also.

Transtacheal block for recurrent laryngeal nerve was also carried out after the cricothyroid membrane was located in the midline of the neck. After sterile skin preparation, the overlying skin was anaesthetized. Then a 22 G needle on a 10 ml syringe with 4 ml of 2% lidocaine without adrenaline was passed perpendicular to the axis of the trachea and pierces the cricothyroid membrane. After the aspiration of air freely into the syringe, instillation of local anaesthetic was performed. This was followed by violent cough which facilitates the spread of local anaesthetic



X ray of bilateral TMJ showing stuck disc

through out the tracheal mucosa. Glosopharyngeal nerve block could not be performed as mouth opening is not adequate.

The patient was planned to proceed with flexible fiber-

optic bronchoscope in sedated condition as patient is very apprehensive with spontaneous respiration. Before introducing the fiberoptic bronchoscope into the nostril 2%xylocaine jelly was applied to both the nostrils and the bronchoscope. The fiberoptic intubation was attempted by Storz probe with a suction port and an oxygen port through the left nostril. Patient was intubated with 6.5 mm flexometallic nylon reinforced tube and fixed at angle of mouth. Confirmation by visualization of carina at the tip of the ET tube and visualization of right and left main bronchi.

Intubation was confirmed with bilateral chest auscultation and by EtCO₂. ET tube was then connected with breathing circuit. Then inj. propofol 80 mg i.v followed by inj. vecuronium 5 mg was administered and anaesthesia was maintained with O₂:AIR (50:50) with isoflurane. The patient was hemodynamically stable through-out the surgery.

Duration of surgery was 5 hours with minimum blood loss. After the excision meningioma the patient's reflexes were returned and



Pictures showing superior laryngeal and trans tracheal nerve blocks

nasopharyngeal and oropharyngeal suction was done. The neuromuscular blockade was reversed with neostigmine (3mg) and glycopyrrolate (0.6mg)i.v and after gaining complete consciousness and reflexes the patient was extubated. The recovery room anaesthesia was smooth and uneventful. Then the patient was shifted to the post anaesthesia recovery room. The patient's vitals were within normal limits the patient maintained a patent airway



Fiberoptic nasal intubation and stable post operative condition of the patient.

DISCUSSION

Always the TMJ ankylosis is challenging for any anaesthesiologist in terms of securing the airway. The TMJ ankylosis patients are anticipated to have difficult intubation because of reduced mouth opening, limited protrusions of their jaw also mandibular hypoplasia can lead to difficult mask ventilation. Normally patients with bilateral TMJ ankylosis present with severely reduced mouth opening for which intubation with conventional methods like direct

laryngoscopy is not possible. Different methods like fibre optic bronchoscopy, tracheostomy, blind nasal intubation, retrograde are now a days used for these patients. Fiberoptic assisted airway intubation and video assisted fiber optic intubation in temporomandibular joint ankylosis has also been tried.

Awake fiberoptic intubation with regional block in difficult airway is regarded as a safest approach but it needs patients Cooperation. The topical anaesthesia of airway improves patients acceptance of an airway by blocking airway reflexes. Awake intubation needs patients co-operation, local blocks for nerves of larynx and topical anaesthesia for upper airway. There is a chance of severe laryngospasm or inability to pass endotracheal tube. Nebulization with 10% Lignocaine also provides topical anaesthesia. Anticholinergic agents reduce secretions.

Temporomandibular joint ankylosis results in restricted mouth opening which could be unilateral or bilateral. In bilateral TMJ ankylosis facial symmetry is maintained. Bilateral TMJ ankylosis also features as bird faced deformity, receding chin, narrow maxilla, protruding upper incisors with nil or few mm mouth opening. Untreated cases may lead to the following complications malnutrition which becomes an indication for surgery, facial asymmetry, and respiratory distress, and poor oral hygiene, carious or impacted teeth. Increased airway resistance & cor pulmonale may occur.

Transnasal fiberoptic guided intubation under sedation or under the influence of inhalational anaesthetics with patient on spontaneous respiration is the safest approach of intubation. Retrograde intubations difficult to perform if mouth opening is less than 5mm Tracheostomy was the last option only in emergency when all other approaches failed. Tracheostomy has its own advantages & disadvantages. Surgical airway should be kept reserved for failed intubation. In emergency situation cricothyroidotomy provides effective ventilation.

CONCLUSION

In this case we intubated the patient successfully with the use of fiberoptic bronchoscope with local nerve blocks having the patient sedated throughout the procedure. No difficulty faced throughout the procedure. Considering the nature of difficulty in the airway of this case we think awake fiberoptic bronchoscopic intubation is the safest of all the method available.

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