



FIBRE OPTIC INTUBATION AND SUB MENTAL FLAP RECONSTRUCTION IN CASE OF ORAL SUBMUCOUS FIBROSIS WITH MINIMAL MOUTH OPENING.

Prashansa Gaikwad^{1*}, Ruchika Tiwari², Shilpa Srivastava³, Sohini Gupta⁴, Hardik Gupta⁵

¹Post graduate resident, department of oral and maxillofacial surgery, Mahatma Gandhi dental college and hospital.

²Professor, department of oral and maxillofacial surgery, Mahatma Gandhi dental college and hospital.

³Reader, department of oral and maxillofacial pathology and microbiology, Mahatma Gandhi dental college and hospital.

⁴Post graduate resident, department of oral and maxillofacial surgery, Mahatma Gandhi dental college and hospital.

⁵Post graduate resident, department of oral and maxillofacial surgery, Mahatma Gandhi dental college and hospital.

***Corresponding Author:** Dr. Prashansa Gaikwad,\

*Post graduate resident, Department of Oral and Maxillofacial Surgery, Mahatma Gandhi Dental College and Hospital, Jaipur, Rajasthan, India, "Siyon House," plot number: 48, Sambhaji nagar, Jalgaon- 425001, Maharashtra, India, Email: prashansagaikwad24@gmail.com

Abstract:

Oral submucous fibrosis (OSMF) is mainly associated with betel nut and tobacco chewing and is a premalignant condition of buccal mucosa. Inflammation, increased deposition of submucosal collagen and progressive fibrosis of the submucosal tissues resulting in marked rigidity which increasingly limit mouth opening are characteristic features of OSMF. This case report discusses the anaesthetic and surgical management of a 25year old male patient with 08mm mouth opening who was operated with submucosal fibrectomy and reconstruction with submental artery flap.

Keywords: Oral submucous fibrosis, fibreoptic intubation, reduced mouth opening, submental flap.

Introduction:

Oral submucous fibrosis (OSMF) is a condition in which there is slow progressive development of fibrous bands beneath the oral mucosa associated with secondary mucosal atrophy. It is believed to be a collagen disease. Its onset is insidious. There is chronic local irritation, inability to open the mouth or limited opening of the oral cavity in OSMF patients. The patients generally struggle in consuming normal diet and maintaining good oral hygiene. They require general anaesthesia for trismus correction, resection or reconstructive surgery for coexisting oral malignancies or other unrelated surgeries. ¹ They have a difficult airway as OSMF hinders regular laryngoscopy and intubation of the trachea. When encountered with an anticipated difficult airway, there should be an appropriate plan for airway securing. In OSMF cases fibreoptic intubation being the gold standard, the ultimate choice is tracheostomy. Here we present a case of OSMF successfully managed by

fiberoptic intubation followed by surgical excision of fibrous bands and reconstruction of the defect with submental artery flap.

Case report:

A 25year old male, weighing 54 kgs, presented with a complaint of progressive inability to open the mouth in the last 6 months. He gave history of constant irritation of left buccal mucosa. Patient gave history of gutka, betel nut chewing and cigarette smoking since last 6 years. Past medical history was insignificant. Examination revealed a mouth opening of 08mm (Figure: 2), thick fibrotic bands were palpable intra orally in left buccal mucosa extending up to left retromandibular trigon region. Complete intra oral and airway examination was not possible due to restricted mouth opening. A diagnosis of OSMF was made based on the history and the examination findings. He was subsequently posted for resection of fibrotic bands and reconstruction with submental artery flap.

The patient was explained about the procedure and written informed consent was obtained. General examination showed she was conscious, oriented and vitally stable. Systemic examination was found to be normal. All routine investigations were normal limits. Patient was kept fasting for 6 hours before surgery. No pre-operative sedation was given. The patient was pre medicated with injection amoxiclav 1.2grams, injection pantoprazole 40mg and injection TT 0.5ml. Anaesthetic plan for securing airway was awake fibre-optic nasal intubation. On the day of surgery, after giving lignocaine viscous gargles, nebulization was done with 4ml of 4% lignocaine. Nasal packing was done with roller gauge soaked in xylometazoline and 2% lignocaine with adrenaline in both the nostrils. 18G IV cannula secured and crystalloid solution started. Oxygen was started with Venti mask at 5litres/minutes.

Difficult airway cart was kept ready including that for emergency tracheostomy. During surgery multipara monitors were connected for continuous monitoring of heart rate, blood pressure, oxygen saturation, electrocardiogram and end tidal CO₂. Injection ondansetron 4mg IV, Injection fentanyl 50 mcg IV were given and nasal packing was removed and patient's airway was anaesthetized by application of lignocaine spray 10%. Superior Laryngeal nerve block with Injection Lignocaine 2%, 2ml given on both the sides. Transtracheal instillation with Injection Lignocaine 2% 2ml administered. FOB was loaded with a 6.0 mm endotracheal tube. After informing to the patient the bronchoscope was inserted through a nostril and advanced towards laryngeal inlet. The fiberscope was negotiated through the vocal cords and positioned above carina. Lubricated endotracheal tube was threaded over the FOB, and FOB was removed. ET tube was attached to the breathing circuit and its position was confirmed by movement of reservoir bag and capnography. After checking bilateral air entry and Injection propofol 80mg IV, Injection vecuronium 4mg IV were given, ET tube was fixed. Patient was maintained on 50% oxygen, 50% nitrous oxide, isoflurane and intermittent injection vecuronium IV and injection fentanyl IV.

As of surgical management, the fibrous bands were released in respect to left buccal mucosa, following by extraction of 27 and 28 teeth. Marking for left side submental artery flap was done, (Figure: 3). Ipsilateral facial artery and vein were identified and ligated. Level Ia and Ib lymph node were resected and sent for histopathological examination. Flap raised anteriorly and vertically and inset was done on defect site of left buccal mucosa and secured with vicryl 2-0 suture, (Figure: 4,5). Buccal pad of fat was placed at the posterior end of the defect site and was secured using vicryl 2-0 suture. Betadine wash was given, haemostasis achieved. 14 number romovac drain was placed in respect to left side of neck and was secured using mersilk 2-0 suture. Closure was done in layers using vicryl 3-0 and ethilon 3-0 sutures.

After completion of surgery neuromuscular blockade was reversed with injection neostigmine 2mg IV & injection glycopyrrolate 0.3 mg IV. Patient extubated after he was breathing well, obeying

commands and maintaining airway. An uneventful surgery was performed under general anaesthesia and successful anaesthetic and surgical management was done, (Figure: 6).

Discussion:

Oral submucosal is a chronic disease that may affect any part of the oral cavity and at times it may affect the pharynx, leading to stiffness of the oral mucosa causing trismus resulting in progressive inability to open the mouth. ¹ The disease begins with glossitis, stomatitis and vesicle formation. Early lesions appear as a blanching of the mucosa, giving a mottled, marble like appearance, whereas later condition of lesions demonstrate palpable fibrous bands that render the mucosa pale, thick and stiff. Mobility of the tongue may be decreased. The faucillar pillars may also become thick as well as short. At times the condition can spreads to the pharynx and down to the pyriform fossae as well. In severe cases, the patient may have difficulty in swallowing, chewing, and speaking.²

Difficult airway is commonly experienced in OSMF. The easiest and quick assessment of airway can be done with 1-2-3 rule. 1- Mobility of TMJ can be assessed by the ability to insinuate one finger into the TMJ space in front of the tragus during opening and closing the mouth. 2- Space between the jaws for introduction of a laryngoscope blade, giving exposure of the glottis and passage of the endotracheal tube can be assessed by the presence of at least 2cm of interincisal distance. 3- Thyromental distance of more than 3 finger breadth measured between the thyroid notch and the symphysis menti is used to evaluate the space available for displacement of the tongue during laryngoscopy and intubation.²

The fiberoptic intubation plays a key role in the surgical management of the patient. In this case, preparation of patient half hour before surgery with anti-sialagogue glycopyrrolate, mild sedation with midazolam and nebulization and in OT airway block helped to intubate the patient smoothly and successfully without any discomfort. In patients with difficult airway tracheostomy is the next choice in awake state with other options being blind nasal, retrograde intubation.

Conclusion:

The characteristic feature of OSMF is extremely restricted mouth opening and distortion of airway rendering difficult intubation. Airway securing by the awake fiberoptic intubation may be the ideal method but in the situations of non-availability of fiberoptic and to avoid the discomfort of awake intubation this method of local release of bands and direct laryngoscopy can be considered. Thus, this method abolishes the discomfort of awake intubation, tracheostomy scarring and is also cost effective.



Figure: 1- Preoperative clinical photograph of the patient.



Figure: 2- Preoperative mouth opening of 08mm.



Figure: 3 - Marking for Submental flap.



Figure: 4- Submental flap raised.



Figure: 5- Inset of Submental flap at defect site.



Figure: 6- Closure of flap donor site.

References:

1. K. Cheran, A. Thamizh Thendral, "Airway management with awake fibreoptic intubation in a patient having oral submucosal fibrosis posted for intralesional submucosal fibrectomy having one finger mouth opening (10mm)" Volume - 11 | Issue - 07 | July - 2021 | DOI : 10.36106/ijar
2. Rachana N D , Sandhya K, "Oral submucous fibrosis: a simple approach for Intubation" Volume 3 Issue 4, Int J Med Res Health Sci. 2014; 3(4): 1051-1053
3. Maharjan R, Jain K, Batra YK. Submucous Fibrosis secondary to chewing of quids: another cause of unanticipated difficult intubation. Can J Anaesth.2002; 49: 309 – 11
4. Williams K. A, et al. "Combined nebulization and spray as you go topical local anaesthesia of the airway", British Journal of Anaesthesia, (2005) 95: 549-553
5. Woodruff C, et al. "Atomised lidocaine for airway topical anaesthesia in the morbidly obese", Anaesthesia, (2010) 65: 12-17
6. Xue F, et al. "Spray as you go airway topical anesthesia in patients with a difficult airway", Anesthesia & Analgesia, (2009) 108: 536-543
7. Joshi N., et al. An aid to topically anaesthetizing the airway, Anaesthesia, (2008) 63: 1265