

Management Of Trismus In Patients With Oral Submucous Fibrosis Using Coblation: An Innovative Technique

Kulbhushan Bali
Varun Kumar. K.B
B. Viswanatha
Chandana .M

Department Ent & Head And Neck Surgery,
Sri Madhusudan Sai Institute Of Medical Sciences And Research, Muddenahalli, Karnataka India

Abstract:

The etiology of Oral submucous fibrosis (OSF) has not yet established fully, but may be related to betelnut chewing, in the late stage it leads to progressive restriction of maximum mouth opening. Many medical and surgical options have been tried for relief of trismus with little success rates. In this study 3 patients with trismus from a rural area were treated successfully using coblation. This technique is being reported for the first time in the management of trismus due to OSF

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I. Introduction:

Oral submucous fibrosis (OSF) was first reported by Schwartz in 1952 among five Indian females from Kenya and he coined the term 'Atropical diopathica Mucosae Oris'. In 1953, Joshi named it as 'Submucous fibrosis' [1,2].

It is a chronic oral mucosal disease. It is one of the pre malignant conditions of the oral cavity with a malignant transformation rate of 4.2% [3]. Initially it presents as blanching of the oral mucosa with a marble-like appearance [4]. In later stages, presents with dense fibrosis extending into the underlying muscles, fibrous bands in the buccal mucosa. It causes progressive restriction of maximum mouth opening. This results in problems with oral hygiene, speaking, and chewing [5,6].

II. Materials & methods:

Three patients (2 female and 1 male, in the age group 40 to 50 years) with restricted mouth opening underwent coblation surgery (Table -1). All of them had a restricted mouth opening with difficulty in chewing and eating food (Figure -1).

Table 1: showing patient details

No	Gender	Occupation	Symptoms	Habits
Patient 1	Female 45 yrs	House wife	Burning sensation in the mouth – 6 months Progressive restriction of mouth opening – 3 months	Tobacco, aracnut chewing - 20 yrs
Patient 2	Female 36 yrs	House wife	Burning sensation in the mouth – 9 months Progressive restriction of mouth opening – 2 months	Tobacco, aracnut chewing - 18 yrs
Patient 3	Male 32 yrs	Driver	Burning sensation in the mouth – 6 months Progressive restriction of mouth opening – 1 months	Tobacco, aracnut chewing - 10 yrs Frequent alcohol consumption – 9 yrs



Fig 1. Photograph showing restricted mouth opening

Fibrous bands in the oral cavity were released with coablation wand under general anesthesia (figure-2). Immediately following surgery, there was a partial improvement in trismus(figure-3).



Fig 2. Photograph showing releasing fibrous bands in the oral cavity with coablation wand

In the immediate post operative period patients were given prenatal antibiotics, analgesic and antiseptic gel application in to the oral cavity. After 24 hrs after surgery patients were advised mouth opening exercises using Heister mouth gag (figure-3).



Fig 3. Photograph showing mouth opening after releasing fibrous bands in the oral cavity

Patients were discharged after 3 days. Patients were discharged and they were started on Vitamin B-complex, Vitamin C. They were advised to continue using Heister mouth gag (figure -4) for 9 weeks.



Fig 4. Photograph showing Heister mouth gag

They were followed for a total period of 9 months. At the end of 3 months they had adequate mouth opening and they didn't had difficulty in chewing food. All were advised to stop beetle nut and tobacco chewing.

III. Discussion:

The etiology of OSF has not yet been fully proved, but may be related to betelnut chewing, capsaicin, auto- immunity, allergies, genetic predisposition, and chronic vitamin and micronutrient deficiencies [7,8]. It is closely associated with betel nut chewing [9].

Various modalities of medical and surgical treatments have been tried for OSF but with unsatisfactory and inconsistent results. Medical treatment includes local hydrocortisone injection, hyaluronidase, and vitamin and iron supplements. Surgical treatment includes split-thickness skin grafting following bilateral temporalis myotomy or coronoidectomy, nasolabial flaps and lingual pedicle flaps depending on the extent of involvement and KTP-532 laser were used [10].

In the present study coblation wand was used under general anesthesia to release the fibrotic bands in the oral cavity. Coblation is a type of radiofrequency ablation. Radiofrequency energy is passed through isotonic sodium chloride and it produces a plasma field. By coblation the medium is dissociated into free sodium ions, which causes destruction of intercellular bonds and thus tissue dissociation [11,12]

This study was done in a medical college hospital in a rural area. The use of coblation technique in the management of trismus due to OSF is being used for the first time.

IV. Conclusion:

Coblation technique can be used safely in the management of trismus in patients with OMSF. Results are satisfactory and it can be done in rural hospital also, where coblation equipments are available

References:

- [1] Ahmad MA, Ali AS, Chaubey KK. Epidemiological And Etiological Study Of Oral Submucous Fibrosis Among Gutkha Chewers Of Patna, Bihar, India. Journal of Indian Society Of Pedodontics And Preventive Dentistry 2006;24(2): 84-89.
- [2] Moger Ganapathi, Shashikanth MC. Oral Submucous Fibrosis In a 12-Year-Old Boy - A Rare Case Report. JIDA 2011;5(1):124-25.
- [3] Muller S, Tilakaratne WM. Update From The 5th Edition Of The World Health Organization Classification Of Head And Neck Tumors: Tumours Of The Oral Cavity And Mobile Tongue. Head Neck Pathol. 2022;16(1):54-62.
- [4] Yang PY, Chen Y, Wang Y, Sun Y, Yuh C, Chang Y. Malignant Transformation Of Oral Submucous Fibrosis In Taiwan: A Nationwide Population Based Retrospective Cohort Study. J Oral Pathol Medicine: Official Publication Int Association Oral Pathologists Am Acad Oral Pathol. 2017;46(10):1040-5.
- [5] Raonr, Villaa, Morecb, Jayasingherd, Kerrar, Johnsonnw. Oral Submucous Fibrosis: A Contemporary Narrative Review With A Proposed Inter-Professional Approach For An Early Diagnosis And Clinical Management. J Otolaryngol Head Neck Surg. 2020;49(1):3.
- [6] Sharma SR, Chavan S, Karjodkar FR, Sansare K, Bharathi S, Singh S. Correlation Of Clinical Features In Oral Submucous Fibrosis : A 9-Year Retrospective Study. Ethiop J Health Sci. 2022; 32(1):137-44.

- [7] Chen,H.M.;Shih,C.C.;Yen,K.L.;Wang,S.M.;Kuo,Y.S.;Kuo,M.Y.P.;Chang,C.P.Facial Candida Albicans Cellulitis Occurring In A Patient With Oral Submucous Fibrosis And Unknown Diabetes Mellitus After Local Corticosteroid Injection Treatment. J. Oral Pathol.Med.2004,33,243–245.
- [8] Jiang, X.W.;Zhang, Y.; Yang, S.K.; Zhang, H.; Lu, K.; Sun, G.L. Efficacy Of Salvianolic Acid B Combined With Triamcinolone Acetonide In The Treatment Of Oral Submucousfibrosis.Oralsurg.Oralmed.Oralpathol.Oralradiol.2013,115,339–344.
- [9] Lai,D.;Chen,H.;Lin,L.The different treatment methods for oral submucous fibrosis.Int.J.Oralmaxillofac.Surg.1999,28(Suppl.1),66.
- [10] Chrisdesouza,²udaypawar,³pankajchaturvedi.
Precancerous lesions of oral cavity and otolaryngology clinics: An international journal, May-September 2009;1(1):7-14
- [11] Derkay CS, Madden BR. Innovative Techniques For Adenotonsillar Surgery In Children: Introduction And Commentary. Laryngoscope 2002,112(8 Pt 2 Suppl 100):2
- [12] Belloso A, Chidambaram A, Morar P, Timms MS. Coblation Tonsillectomy Versus Dissection Tonsillectomy: Postoperative Hemorrhage. Laryngoscope 2003,113(11):2010–20