

Use of Diode Lasers in Treatment of Oral Submucous Fibrosis: A New Concept in Surgical Management

Correspondence

Dr Harish Saluja

Department of Oral & Maxillofacial Surgery,
Rural Dental College,
Loni(Bk), Taluka: Rahata,
District: Ahmednagar 413736.
Maharashtra, India

ABSTRACT

Oral submucous fibrosis is chronic, insidious disease affecting the oral cavity and sometimes the pharynx and rarely the tongue. A 20 year old patient with oral submucous fibrosis was treated with contact diode laser under local anesthesia and was followed up for 6 months. Diode lasers offered excellent results and had many advantages over conventional surgical treatment.

Key Words: Diode Laser, Oral Sub mucous Fibrosis, Local Anaesthesia, Surgical treatment

Dr Harish Saluja

Senior Lecturer, Department of Oral & Maxillofacial Surgery,
Rural Dental College,
Loni(Bk), Taluka: Rahata,
District: Ahmednagar 413736.
Maharashtra, India
Email: harry_saluja@yahoo.co.in

INTRODUCTION

Oral Submucous fibrosis is a well known clinical entity since the time of "Sushruta" as 'Vidari' [1]. This condition is predominantly found in the Indian subcontinent. Joshi in 1953 was the first person to describe this entity in India. The highest incidence is found in the state of Kerala with an overall prevalence rate of 2.5% in various states of the country. JJ Pindborg defined it as "an insidious chronic disease affecting any part of the oral cavity and sometimes the pharynx. Although occasionally preceded by and /or associated with vesicle formation, it is always associated with juxta epithelial inflammatory reaction followed by a fibro elastic change of lamina propria, with epithelial atrophy leading to stiffness of oral mucosa and causing trismus and inability to eat" [2].

The onset of the condition is insidious and the most common initial symptom is burning sensation experienced on eating spicy hot food or on intake of hot beverages. Early signs are blisters, ulcerations or recurrent stomatitis. Excessive salivation, defective gustatory sensation, regurgitation and nasal resonance are rarely encountered. Restricted tongue movements are seen in advanced cases. Submucous fibrosis typically affects the buccal mucosa, lips, retromolar areas and the soft palate. Occasional involvement of the pharynx and esophagus is seen. Once present, oral submucous fibrosis does not regress, either spontaneously or with resection of

betel quid chewing [3].

There is no definite treatment for this condition. The various treatment modalities are mainly medical, surgical, or a combination of both. Conservative/medical modality is the treatment of choice in patients with mild to moderate limitation in mouth opening. The medical line of treatment includes usage of gold [4], iodides, hyaluronidase, placental extract, and steroids like hydrocortisone and triamcinolone, vitamins, iron supplements [5].

Whereas surgical treatment is the method of choice in patients with marked limitation of mouth opening or in patients not responding to the conservative management [6]. Many surgical modalities like dermal graft [7], tongue flap [8], nasolabial flap [9] etc. are in vogue to cover the surgical defect created by transection of fibrous bands in oral mucosa.

Considering the limited success of the various treatment modalities and being aware of the fact that surgical treatment is the only palliative treatment having a fixed, limited target of relieving the trismus to enable the patient to overcome the morbidity, there is perpetual quest for the newer surgical protocols.

We report a case of oral submucous fibrosis treated with contact diode laser under local anesthesia for transection of fibrous bands.

Dr Sanjay Asnani

Senior Lecturer

Dr (Mrs.) Uma Mahindra

Professor & Head

CASE REPORT

A 20 year old male patient was reported in the department of oral and maxillofacial surgery with a chief complaint of limited mouth opening since last 3 years and burning sensation on consumption of hot and spicy food. A detailed history was taken regarding tobacco chewing habit and dietary habit. It was revealed that patient consumed tobacco in the form of quid since last 5 years and also consumed excessive chillies. On examination fibrous bands were palpated on the right and left buccal mucosa extending up to the retromolar region. His preoperative mouth opening was recorded and was 18mm (Fig 1). Biopsy was taken under local anaesthesia to confirm oral submucous fibrosis. After confirmation of biopsy report treatment was explained to the patient and transection of fibrous bands was done by diode laser (Biolase, 890nm wavelength) on contact mode under local anaesthesia and the raw area was not grafted and was allowed to epithelize on its own (Fig 2). Patient was kept on oral antibiotics and analgesics for 5 days and post operative physiotherapy exercise was started after 48 hours, at least for 7-8 times in a day at the interval of one hour. Patient was told to continue the exercise for a period of one year. Mouth opening was recorded at the interval of 1 week, 1 month and 6 months. A significant improvement in mouth opening was recorded at the end of 6 months and it was around 4cm (Fig 3). Healing of the surgical site was completed in 4 weeks and also there was relief from burning sensation.



Fig. 3. Mouth opening at the end of 6 months

DISCUSSION

Oral submucous fibrosis is an established precancerous condition with increased prevalence in the Indian subcontinent. An estimated 2.5 million people suffer from this disease in India³. Prevalence rates of OSMF ranging from 0 to 17.6 % have been reported in various population subsets. Although Oral submucous fibrosis is identified and documented in literature for more than sixty years, its etiology is still obscure. Betel nut chewing habit is the dominant etiological factor as majority of the patients are habituated to betel nut chewing in one form or the other.

The onset of the disease is insidious and is often of 2 to 5 years duration. The most common initial symptom is burning sensation of the oral mucosa, aggravated by spicy food. Vesiculation, excessive salivation, ulceration, altered pigmentation, recurrent stomatitis, defective gustatory sensation, and dryness of the mouth have also been indicated as early symptoms

The treatment of oral submucous fibrosis is a challenging task for a clinician. All the documented treatment modalities, ranging from medicinal treatment to surgical treatment are purely symptomatic in nature and total cure of the disease is still elusive. Different authors have suggested variety of treatment modalities and have claimed success rates; still there is no universally acceptable protocol for the management of OSMF. This is mainly due to the fact that the etiology of the disease is not fully understood and the disease is progressive in nature.

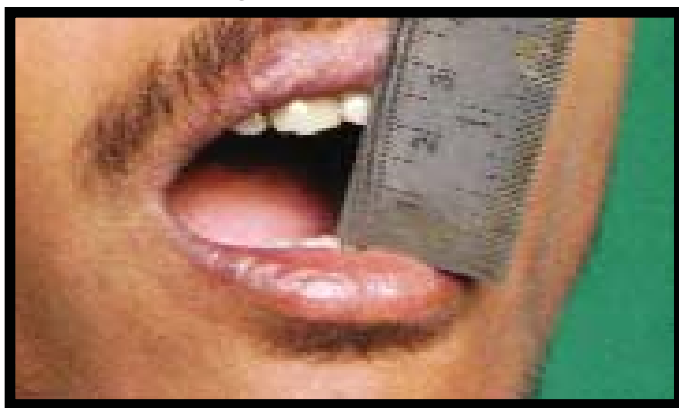


Fig. 1. Pre operative mouth opening



is to relieve the symptoms which include hampered function in the form of trismus, burning sensation in mouth, difficulty in mastication, deglutition and speech. Relieving such type of symptoms makes it a more difficult surgical problem. Surgeon should not only aim to relieve trismus but also should monitor for malignant transformation of this condition.

Recently, diode lasers have been used for excision of soft tissue lesions in oral cavity; also have been used for gingivectomies, curettage of the pockets, debridement of the root canals, for carrying out frenectomies, bleaching, etc. But there is very little literature available regarding their role in treatment of oral submucous fibrosis. In present case transection of bands was done by contact diode lasers under local anaesthesia and it offered good results. There was significant improvement in mouth opening at the end of 6 months. Diode laser offered several advantages over conventional surgical procedures like

- 1) The procedure done is a minor outpatient procedure under local anesthesia.
- 2) Haemostatic nature of the surgery which allows surgery to be performed more precisely and accurately because of increased visibility and accessibility of the surgical site.
- 3) Decreased post operative pain and swelling.
- 4) Causes a reduction in bacterial counts thereby promoting quicker, more predictable healing with minimal post operative infection and inflammation.
- 5) Leads to healing with minimal scarring.

The only disadvantage of this technique is availability and its cost effectiveness.

Diode contact laser system can be used to

rehabilitate grade III and early grade IV cases of OSMF. However, further more research is required for this system. A large sample size and long term follow up would give better insights for its use.

REFERENCES

1. Mukherjee AL. Oral submucous fibrosis. A search for etiology. *Ind J Otolaryngology* 1972; 24: 1: 11-5.
2. Gupta SC. "Mist" an etiological factor in oral submucous fibrosis. *Ind J Otolaryngology* 1978; 30: 1: 5-6
3. Shahid R, Aziz. Oral submucous fibrosis: case report and review of diagnosis and treatment *J Oral Maxillofac Surg.* 2008; 66: 2386-2389.
4. Marawetz G, Katsikers N, Weinberg S, Listrom R. Oral submucous fibrosis. *J Oral Maxillofac Surg.* 1987; 16: 609-614.
5. Borle RM, SR Borle. Management of Oral Submucous Fibrosis: A conservative approach. *J Oral Maxillofac Surg.* 1991; 49: 788-789.
6. J N Khanna, N N Andrade: Oral submucous fibrosis: a new concept in surgical management. Report of 100 cases. *Int. J. Oral Maxillofac. Surg.* 1995; 24: 433-439
7. Yen D. J. C. "Surgical treatment of submucous fibrosis". *Journal of Oral Surgery*, September 1982; 269-272.
8. Golhar S, Manohar MN, Narkhede S. Tongue flap in oral submucous fibrosis. *Ind J Otolaryngol.* 1989; 41: 104-107.
9. Kavarana N.M. and H.M. Bhatena. "Surgery for severe trismus in submucous fibrosis". *British Journal of plastic surgery* 1987; 40: 407-409.