

A Custom Medicament Confiner and Lip Deflector for Oral Ulcers

Chauhan Manish R¹, Raguram Ganesan²

1- Associate Professor (M.D.S), Department of Prosthodontics and crown and bridge, Government Dental College and Hospital, Mumbai. 2-Assistant Professor (M.D.S), Department of Prosthodontics and crown and bridge, Nair Hospital Dental College, Mumbai, India.

Correspondence to:

Dr. Chauhan Manish R, Associate Professor (M.D.S), Department of Prosthodontics and crown and bridge, Government Dental College and Hospital, Mumbai. Contact Us: www.ijohmr.com

ABSTRACT

Many dermatological conditions present with ulcerative and vesiculobullous lesions affecting the oral mucous membrane. The treatment often involves the use of topical medicaments. However, repeated occlusal trauma or friction may delay or prevent healing. Hence, deflection of lip away from teeth to prevent trauma becomes a necessity. Confinement of the topical agent is also difficult due to the turbulent nature of the oral cavity. This report describes the construction of a simple custom medicament confiner and lip deflector for two patients presenting with ulcers on the lower lip.

KEYWORDS: Lip deflector, Recurrent aphthous stomatitis, Medicament confiner, Acrylic appliance

INTRODUCTION

Many dermatologic diseases present with oral manifestations involving the mucous membranes such as recurrent aphthous stomatitis, erosive lichenplanus, pemphigus vulgaris, bullous pemphigoid.¹ Several ulcerative and vesiculobullous conditions afflicting oral mucosa can be symptomatically treated with topical or systemic medicaments. However, topical drug therapy is complicated by the turbulent oral environment. Maintaining long-term contact between high concentrations of topical agents and oral mucous membranes is extremely difficult. Hence, there is a need for a dental appliance which can confine the medicament to the concerned area. Two cases of recurrent aphthae have been described where construction of a simple appliance helped in the healing of the ulcers.

CASE REPORT

Case Report 1

A 34-year male patient reported with an ulcer on lower lip since 12 days. The patient gave a history of burning sensation and acute pain due to repeated, accidental lip biting while eating. The lesion began with mucosal erosion leading to a progressive increase in the size of the ulcer. Intraoral examination revealed the presence of a solitary aphthous ulcer on labial mucosa in the region of lower right lateral incisor and canine approximately 6mm x 8mm in size (Fig No.1). The patient was applying a topical antiseptic ointment for the same since the second day. However, the size gradually kept increasing. Occlusal examination revealed that the incisal edges of lower right lateral incisor and canine were in contact with the ulcer at rest and constantly rubbing against it during movement. The edges were attrited and sharp. The patient also complained of an undesirable spread of the medicament on adjacent tissue due to the changing nature of oral cavity.



Fig 1. Ulcer corresponding to lower right lateral incisor and canine

It was concluded that the sharp edges were leading to constant trauma thereby preventing healing of the ulcer. Hence, fabrication of a removable resin appliance which would deflect the lip away from the teeth as well as confine the intraoral medicament to the concerned area was planned.

Method: Maxillary and mandibular impressions were made in irreversible hydrocolloid (Tropicalgin, Zhermack, Italy) and poured in dental stone (Kalabhai Dental Private Limited). Autopolymerizing clear acrylic resin was used to fabricate a removable appliance covering incisal half of 41, 42, 43 and 44 on lingual aspect and extending till the sulcus labially. This was done to completely deflect the lip away from the teeth. A concave reservoir was created on the labial surface corresponding to the location of ulcer so that the medicament could be placed and retained for effective application (Fig No.2). Draping of the appliance by the lip mucosa provided the necessary seal which helped in containing the medicament without displacement. The interdental areas provided effective retention to the

How to cite this article:

Chauhan MR, Raquram G. A Custom Medicament Confiner and Lip Deflector for Oral Ulcers. *Int J Oral Health Med Res* 2016;3(1):98-100.



Fig 2. Customized medicament carrier with concave reservoir labially

prosthesis. The patient was trained to apply chlorhexidine gluconate gel (Hexigel, IPCA) in the concave reservoir (Fig No. 3) and use it topically 3-4 times a day (Fig No 4) and recalled after three days for follow-up. The ulcer had almost completely healed (Fig No 5).



Fig 3. Application of medicament



Fig 4. The acrylic appliance in situ

Case Report 2

A 36-year male patient reported with ulcers on lower lip on the left side since 10 days. Intraoral examination revealed the presence of two erythematous minor



Fig 5. Healed ulcer

aphthous ulcers on labial mucosa in the region of the lower left lateral incisor (Fig No 6). The ulcers were approximately 5-6mm in width, approximately corresponding to the width of the mandibular lateral incisor. Examination revealed that the ulcers were formed due to constant rubbing of sharp incisal edge of lower left lateral incisor which would also delay normal healing of the ulcers.



Fig 6. Ulcers corresponding to the lower left lateral incisor

A removable resin appliance similar to that in the first patient (Case Report 1) was fabricated. The appliance covered 31,32 and 33 and reservoir for medicament was created labially. The patient was told to wear the appliance even at night.

DISCUSSION

The prevalence of oral aphthous ulcers has been variably reported by several authors depending on annual or lifetime prevalence and the population surveyed.²⁻⁴ Lips and buccal mucosae are the most common sites of ulcerations.³ The average healing period varies from 10 days for minor aphthae to about six weeks for major aphthae.^{5,6} Ulcers on labial mucosa often are subjected to repeated friction or occlusal trauma. Hence, healing may be prolonged in some cases. Although several factors such as genetics, stress, drugs, hematinic deficiency and hormonal changes have been associated with the

occurrence of RAS, there is no definitive curative treatment for the same. Hence, it is obligatory to provide symptomatic treatment including control of pain.

Various topical and systemic agents such as immunosuppressive agents, immune enhancement drugs, antibiotics, antiseptics, diet supplements and topical anesthetics have been used in the treatment of RAS. Recently, low-level laser therapy has also been used because of its local anti-inflammatory action.⁷ The confinement of these locally acting agents is difficult. A dental appliance can be an effective means of controlling biting of oral mucosa, prevention of trauma and confining the topical agent. The appliance can be in the form of a soft mouth guard, oral screen, lip bumper, etc. The design of the prosthesis or appliance should be determined by the location, severity and nature of injury. The use of extensive appliances is not warranted when the affected area is small.

Considering these factors, a small acrylic shield was created which simultaneously acted as medicament confiner and lip deflector. This appliance was good enough to prevent further trauma and thereby facilitate healing of the existing lesion. However, if there is an underlying cause such as persistent lip or cheek biting habit, then the treatment may involve counseling, biofeedback, relaxation techniques, and hypnosis or psychiatric treatment.⁶

The presented appliance is conservative, simple to wear, comfortable and effective. It can be designed and modifications can be done according to the need of the patient.

CONCLUSION

A simple method has been described to fabricate multi-

functional resin prosthesis to aid in the treatment of aphthous ulcer. The prosthesis can be made chairside using common materials available in the dental operator. It is inexpensive and does not require much time. The use of such appliances can be extended to other mucosal lesions such as erosive lichenplanus where a local and effective application of topical drugs is necessary.

REFERENCES

1. Shafer WG, Hine MK, Levy BM. Textbook of Oral Pathology. 7th ed. Elsevier; 2012.
2. Rivera-Hidalgo F, Shulman JD, Beach MM. The association of tobacco and other factors with recurrent aphthous stomatitis in an US adult population. *Oral Dis.* 2004;10:335–45.
3. Mustafa J. Abdullah. Prevalence of recurrent aphthous ulceration experience in patients attending Piramird dental speciality in Sulaimani City. *J Clin Exp Dent.* 2013;5: e89–e94.
4. Patil S, Reddy SN, Maheshwari S, Khandelwal S, Shruthi D, Doni B. Prevalence of recurrent aphthous ulceration in the Indian Population. *J Clin Exp Dent.* 2014;6: e36–e40.
5. Ship JA. Recurrent aphthous stomatitis. An update. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod.* 1996;81:141–7.
6. Preeti L, Magesh KT, Rajkumar K, Karthik R. Recurrent aphthous stomatitis. *J Oral Maxillofac Pathol.* 2011;15:252–6.
7. Aggarwal H, Singh MP, Mathur H, Sowmya GV. Comparative study between low-level laser therapy and topical corticosteroids in aphthous ulcers. *Oral Surgery, Oral Medicine, Oral Pathology and Oral Radiology.* 2014;117: e364.

Source of Support: Nil
Conflict of Interest: Nil