

## OPINION

# Suctional Hyperplasia of Tongue as a Consequence of Tongue-sucking Habit

<sup>1</sup>Dinesh F Swamy, <sup>2</sup>Elaine S Barretto, <sup>3</sup>Sapna SR Dessai, <sup>4</sup>Kathleen M D'Souza

## ABSTRACT

We report our clinical opinion on the cause of a tongue lesion referred to us as a diagnostic dilemma with a chronic painful raised erythematous midline lesion on the dorsum of the tongue that was unresponsive to conventional antifungal treatment. The patient, a 10-year-old child, was found to have a deep palatal vault and the lesion was identified to be caused due to a habitual suction force applied repetitively by the tongue against the palatal vault. Simple reminder appliance therapy consisting of a removable appliance produced habit cessation and relief for the lesion from suctional force and was sufficient to produce spontaneous resolution of the lesion. Our case illustrates a tongue lesion with an unlikely habit-related cause. In our opinion, this fact may be of use to other dentists to consider among the existing differential diagnoses available for isolated red lesions occurring on the dorsum of the tongue.

**Keywords:** Humans, Tongue abnormalities, Tongue diseases and diagnosis, Tongue habits and adverse effects.

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## INTRODUCTION

A variety of habits have been documented to produce deleterious effects on oral hard and soft tissues. The extent of damage produced depends on the frequency, duration, and intensity of the habit. While dentists are well versed with the typical features of commonly prevalent habits, such as thumb-sucking and tongue-thrusting as well as their management, habits that occur less frequently may be unfamiliar to clinicians at large. To this end, this article intends to report a recently encountered case which

proved a diagnostic and therapeutic challenge for several clinicians, and which ultimately was resolved by treating the underlying repetitive habit.

## CASE REPORT

A 10-year-old male presented to the Department of Pedodontics and Preventive Dentistry, Coorg Institute of Dental Sciences, India, complaining of a lesion on dorsum of the tongue since previous 11 months. He complained of pain, irritation, and burning during meals, especially while eating spicy foods. Prior to presentation, the patient had sought treatment with various general dentists at several instances. He was advised to change his toothbrush and brushing technique, given diet restrictions regarding spicy or hard food, and was later treated with iron supplements, vitamin B complex, topical antifungals, systemic antifungals, and topical corticosteroids. However, as the lesion did not resolve, the patient was referred to our institution.

On examination, an ovoid, elevated and flattened, firm swelling measuring about 0.5 cm × 0.5 cm located in the anterior two-thirds of tongue in the midline was noted. The lesion was tender to touch and erythematous (Fig. 1A). There were no contributory findings in the dentition or oral mucosae. During examination, the presence of a high arched palate (Fig. 1B) was noted, and both child and parent gave a positive history of the child constantly spending time during the waking hours holding the tongue as if sucking on a lozenge. On further questioning, this habit was dated by the parent as being definitely performed in the last 18 months at a minimum, and possibly even earlier. The patient had good general health and guardians did not report any history of systemic disease or immunocompromised status. Routine blood examination was within normal limits and peripheral blood smear did not reveal any hematological findings suggestive of anemia or any derangements in differential counts.

We hypothesized that this could be a case of an unusual habit of "tongue sucking" that was resulting in a deleterious effect on the dorsum of the tongue. The habitual character was confirmed by the absence of such activity during sleep time, as reported by the parent. As the lesion could be secondary to the habitual sucking action, it was deemed that habit correction was necessary, and

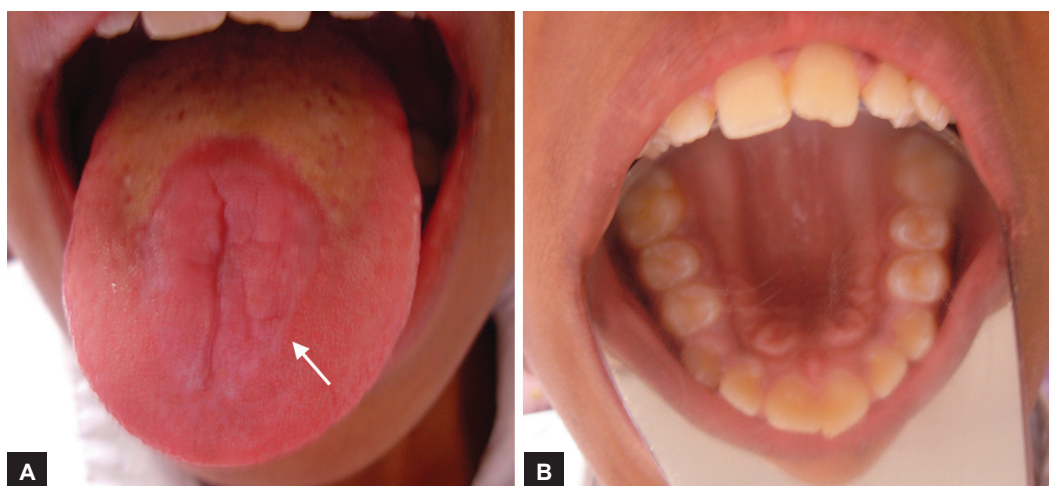
<sup>1-4</sup>Lecturer

<sup>1,2</sup>Department of Pedodontics and Preventive Dentistry, Goa Dental College and Hospital, Bambolim, Goa, India

<sup>3</sup>Department of Oral Medicine, Goa Dental College and Hospital Bambolim, Goa, India

<sup>4</sup>Department of Prosthodontics, Goa Dental College and Hospital, Bambolim, Goa, India

**Corresponding Author:** Dinesh F Swamy, Lecturer, Department of Pedodontics and Preventive Dentistry, Goa Dental College and Hospital, Bambolim, Goa, India, e-mail: dswamy@gmail.com



**Figs 1A and B:** (A) Intraoral view showing lesion on dorsum of tongue (B) Corresponding the deep vaulted palate

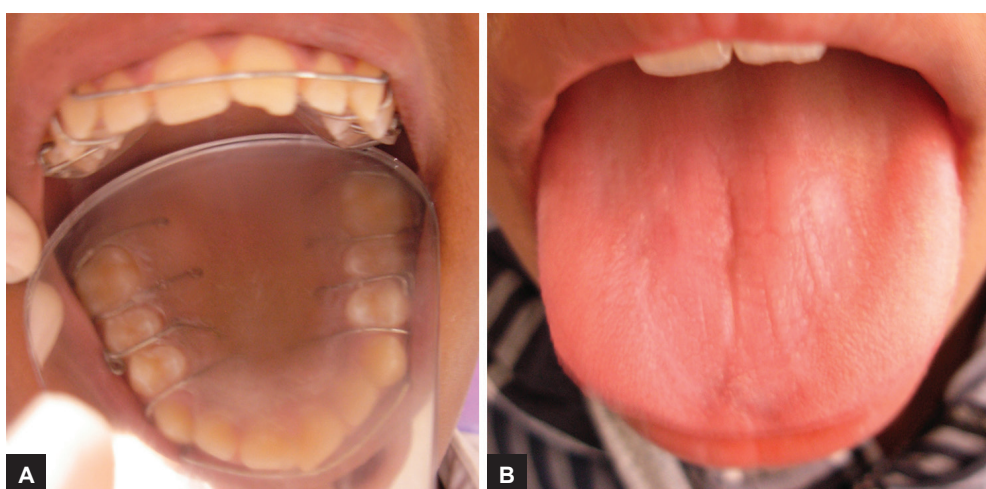
was a prerequisite for resolution of the lesion. A removable palatal acrylic plate (Fig. 2A) was delivered with the intention of reducing suction forces of tongue with hard palate by reducing depth of palate, as well as acting as a reminder for habit cessation. The patient was instructed to wear the appliance at all times when awake, except during meals, and report for review after 2 days, 1 week, 2 weeks, and thereafter every 2 weeks.

After 1 week, the lesion showed signs of partial resolution and had completely regressed by the time of 2-week recall (Fig. 2B). The patient was motivated to continue wearing the appliance beyond resolution of the lesion for a period of 1 month, by which time habit cessation had occurred. Both parent and patient were counseled to be deliberately conscious about resumption of the habit, and were asked to report at monthly intervals for a duration of 3 months during which time there was no reported resumption of the habit and no recurrence of the lesion.

## DISCUSSION

Lesions on the dorsum of the tongue are produced by various conditions. Of these, lesions that affect the entire dorsum of the tongue, such as cases of benign migratory glossitis or manifestations of vitamin deficiency are seen somewhat regularly in clinical practice, whereas isolated red lesions confined to the midline occur with lesser frequency and merit a different group of differential diagnoses.<sup>1-4</sup> Some of the suspected diagnoses for such cases may be median rhomboid glossitis, chronic atrophic candidiasis, chronic pseudomembranous candidiasis, irritation fibroma, mucocoele, granular cell tumor, tertiary syphilis, lingual thyroid, transient lingual papillitis, scarlet fever or group I streptococcal oropharyngitis, drug reaction, and possibly even squamous cell carcinoma.<sup>5-7</sup>

Both chronic atrophic candidiasis and chronic pseudomembranous candidiasis respond to oral antifungal drugs and furthermore even medial rhomboid glossitis is



**Figs 2A and B:** (A) Intraoral view showing removable appliance for reminder-therapy; (B) Intraoral view after 2 weeks of appliance use showing lesion resolution

thought to have a candidial etiology.<sup>8</sup> All three are known to produce glossodynia. As our patient was previously treated, but unresponsive to topical antifungal therapy (Nystatin, oral suspension, 400,000–600,000 IU/q.i.d. for 14 days) as well as systemic antifungal therapy (Fluconazole, tablet, 200 mg [day 1], thereafter 100 mg daily for 14 days) of any fungal etiology was ruled out.

Syphilis, scarlet fever or streptococcal oropharyngitis, psoriasis, or any drug reaction were ruled out based on anamnesis. Peripheral smear did not reveal any picture of iron deficiency anemia and other nutritional deficiencies, such as vitamin B1, B2, B6, and B12 were ruled out based on the empirical multivitamin therapy, which patient had already received. Diagnoses of mucocoele and lingual thyroid and granular cell tumor were reserved in case of unsuccessful appliance therapy, where the next course of action would have been lesion biopsy followed by histopathology. However, these were unnecessary.

By recreating a more ideal contour of palatal surface with a removable appliance, developing a profound negative pressure between the tongue dorsum and the hard palate was made more difficult to accomplish. Appliance therapy was also a reminder to the child to become conscious of the impulse to suck and discontinue the act of tongue sucking as a result of the obstruction to this act. Whitaker and Singh<sup>9</sup> had opined on a similar etiology related to the habitual tongue position in cases with median rhomboid glossitis. Kessler<sup>10</sup> has also reported a case where the tongue lesions exactly corresponded in shape and extent to the areas of pressure exerted by the tongue during speech and deglutition.

According to our reasoning, the epithelial breakdown and signs of inflammation seen on the tongue were a result of the deleterious action of the tongue-sucking habit exceeding the healing potential of the mucosa of the tongue. Hence, relieving the lesion from the repetitive suction force exerted on it permitted healing to supercede the deleterious actions of the habit leading to spontaneous resolution of the lesion. Appliance therapy was prolonged beyond the spontaneous resolution of the lesion up to 1 month to ensure that habit cessation was achieved. In our case, the child patient was self-motivated to cease the habit as well as comply

with the instructions for appliance wear, as the child was distressed by the pain and irritation caused by the lesion during eating. However, in other cases with lesser motivation or issues of compliance, habit cessation may take longer or may require more aggressive attempts at reminder appliance therapy.

## CONCLUSION

To the existing differential diagnoses available for isolated red lesions occurring on the dorsum of the tongue, a habit-related cause may also be included among the possible causes. Our case illustrates how simple treatment consisting of habit cessation and relief for the lesion from suctional force by means of removable appliance reminder therapy is entirely sufficient to result in spontaneous resolution.

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