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Research Article

DIFFERENTIAL DIAGNOSIS OF LONG TERM TONGUE ULCERS

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ABSTRACT

Oral ulcers is a very common disorder of the oral mucosa. Patients with signs or symptoms of oral ulcers are sometimes referred to gastroenterology clinics, however, in most instances the ulcers does not reflect gastrointestinal disease, some with a chronic non- healing ulcer are advised biopsy. Indeed, a spectrum of disorders can give rise to oral mucosal ulcers ranging from minor local trauma to significant local disease such as malignancy or systemic illness. Lesions of the tongue have a broad differential diagnosis ranging from benign idiopathic processes to infections, cancers, and infiltrative disorders. This article will focus on common ulcerative disorders of the tongue in aspects of their clinical features and differential diagnosis, two case reports with the diagnosis and conservative management for long-term chronic ulcers. The two cases which are reported in this article had a differential diagnosis of Squamous cell carcinoma of the tongue. The clinical picture was craterlike lesion, having a velvety-red base and a rolled, indurated border and most important painless in both cases. Removal of the irritant which was the tooth, rehabilitation of the oral mucosa by lubrication with Cocus Nucifera resulted in the healing of the ulcers. Functional components of Cocus Nucifera are Squaline, tocopherol, phytosterols and other sterols which are all plant steroids.

KEYWORDS : chronic tongue ulcer, non – healing ulcer, traumatic ulcer, Cocus Nucifera.

INTRODUCTION

The human tongue, occupies most of the part in the oral cavity is multi - functional and a uniquely structured organ with a combination of an extensive blood and nerve supply. Owing to its exceptional lymphatic drainage, the infections of this organ may spread to adjacent areas and even to the neck. These features are responsible for greater signs and symptoms in case of infections and lesions of the tongue. On the other hand, its extensive vasculature makes expeditious healing possible.

Lesions of the tongue have a broad differential diagnosis. One of the most common and distressing condition could be a long – standing chronic tongue ulcer. Patients vary enormously in the degree to which they suffer and complain of soreness in relation to oral ulceration.

When a clinician is attempting to complete a differential diagnosis of a clinical ulcer, it helps to separate oral ulcers into two groups[1]:-

Short – term ulcers (those that persist no longer than 3 weeks and regress spontaneously or as a result of nonsurgical treatment)

Persistent ulcers (those that last for weeks and months).

The majority of Traumatic ulcers, Recurrent Aphthous ulcers (RAUs) (except Major Aphthae), Recurrent Intraoral Herpetic ulcers, and Chancres fall into the category of short-term ulcers. Occasionally, Traumatic ulcers, Major Aphthae, ulcers from odontogenic infection, malignant ulcers, Gummas, and ulcers secondary to debilitating systemic disease are classified as persistent ulcers.

COMMON PERSISTENT ULCERATIVE DISORDERS OF THE TONGUE

Recurrent Oral Ulcers

Recurrent aphtous ulcer (RAU), recurrent intraoral herpes simplex (RIHS), major aphthous ulcer (major AU), and herpetiformaphtha (HA).

RAU and RIHS are difficult to distinguish at times. RIHS lesions involve a cluster of small, punctate ulcers, none of which is more than 0.5 cm in diameter, and occurs on mucosa that is fixed to periosteum. On the other hand, RAU involves a yellowish ulcer with smoothly contoured borders measuring between 0.5 and 2 cm in diameter with a narrow erythematous halo and occurring on a loose mucosal surface. Unlike RAU, RIHS lesions often recur in the same location[2]. Frequent sites of RAU are the buccal mucosa and vestibule, lateroventral area of the tongue, floor of the mouth, soft palate, and oropharynx (i.e. on movable mucosa – non-keratinized)[3]. Usually occur as a Erythematous macule or papule; lesion undergoes central blanching followed by necrosis and ulceration, with a Shallow ulcer is 0.5 to 2 cm in diameter; has yellow necrotic center; has smooth, contoured border usually symmetric and circular and has constant red halo[4].

Major RAUs they are quite deep, very painful and persist for months. They often occur in the posterior areas of the mouth. They frequently heal with scar formation because of their depth. Major RAUs are difficult to treat. Patients often suffer from these painful non-healing ulcers for months.

This conclusion is drawn if trauma cannot be implicated and the patient does not have an underlying systemic disease associated with stomatitis or if an odontogenic infection cannot be identified.

Traumatic Ulcer

Traumatic ulcers are easily recognized if the clinician can establish the cause of the physical injury. In some cases the origin or nature of the trauma is obscure; consequently the diagnosis is difficult to establish. At times traumatic lesions, especially those occurring on the tongue, may persist for weeks; these lesions are then counted in the differential diagnosis of persistent ulcers. It is by far the most common oral mucosal ulcer. Causes may be mechanical, chemical, or thermal; the traumatic incident may be accidentally self–inflicted or iatrogenic.

The patient with a Traumatic ulcer complains of tenderness or pain in the area of the lesion, and usually the traumatic agent can be readily identified. Causes could be : lip, tongue or cheek biting (sometimes after the administration of a local

anaesthetic); toothbrush injury; fall while running with an object in the mouth and mouth burnt by hot liquids. Repeated trauma can cause ulceration on the ventral surface of the tongue caused by tooth's sharp incisal edge[5].

Common sites of a Traumatic ulcer are tongue, lips, mucobuccal fold, gingivae and palate. They may persist for just a few days or may last for weeks (especially ulcers of the tongue). They vary greatly in size and shape but seldom are multiple or recurrent, unless they result from ill-fitting dentures. Raised and reddish borders and their yellowish white necrotic surface that can be readily removed are characteristic of these ulcers. In some instances the ulcers conform nicely to the shape of a tooth cusp or a denture flange, or they may be positioned against a sharp edge of a tooth.

Squamous Cell Carcinoma (Oral Cancer)

Squamous Cell carcinoma is the most common persistent ulcer in the oral cavity, usually painless. The classic Ulcerative Squamous Cell Carcinoma is described as a craterlike lesion, having a velvety-red base and a rolled, indurated border. The intraoral ulcer is usually devoid of necrotic material and is situated in the high-risk oval. This region includes the lower lip, floor of the mouth, ventral and lateral borders of the tongue, retromolar areas, tonsillar pillars, and lateral soft palate[6].

CASE REPORT I

A 69 yrs. Old male patient visited The Dental Speciality Clinic with a history of chronic painless ulcer on right lateral border of the tongue, since four months. He also had a history of long standing pain on the palate radiating to the left upper and lower jaw. Patient also complained of a dry mouth.

Medical history was non - contributory.

An oral examination identified a large spindle-shaped ulcer with white keratotic borders of size around 10 mm x 3 mm on the right lateral border of the tongue. (Figure I & II)



Figure I: **Ulcer on the right lateral border of the tongue**



Figure II: **Large spindle-shaped ulcer**

On palpation, area elicited no pain response.

Examination of the rest of intraoral mucosa revealed no other lesions but presence of a highly viscous decreased salivary flow leading to a dry mouth was a clinically relevant finding.

DIFFERENTIAL DIAGNOSIS

Squamous Cell Carcinoma, MajorApthous Ulcer, Traumatic Ulcer.

Clinical features of an Ulcer; indurated border, devoid of necrotic material, on the lateral border of the tongue without any complaint of pain on the tongue, helps us to put Squamous Cell Carcinoma as a tentative diagnosis. Symptoms of weight loss, anorexia were absent in this case.

No pain, no history of recurrence and the presence of a persistent lesion ruled out the possibility of it being a Major Apthous Ulcer.

History of dry mouth with decreased hydration and increased viscosity of saliva, hence, even the smooth margins of molar could be traumatic. Therefore, diagnosis of Traumatic Ulcer was given due consideration in treatment planning. The absence of sharp margins in relation to the lesion excluded the ulcer to be of traumatic origin.

TREATMENT PLAN

Lubrication of mouth by CocosNucifera oil (Coconut oil) as a mouth rinse three to four times a day. Removal of slightest irritation occurring due to dry mouth and borders of the teeth was opted. Extraction of the lower right 2nd and 3rd molar teeth was done under local anaesthesia. Patient was reviewed two days after extraction and the lesion showed signs of healing (Figure III), after two weeks showed complete healing. (Figure IV)



Figure III: **Two days after extraction**

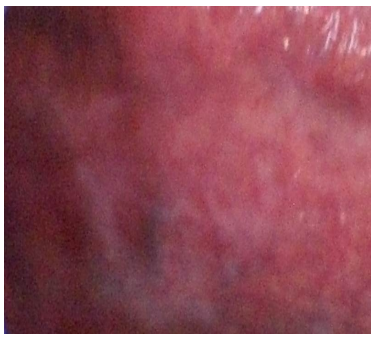


Figure IV: **Two weeks after extraction**

CASE REPORT II

A 71 yrs. Old male patient was referred by a radiologist to the dental speciality clinic with a history of chronic painless ulcer.

Patient had a history of treatment for Multiple Myeloma two years ago.

History of weight loss, loss of appetite was evident.

Oral examination revealed a large round ulcer with white indurated and keratotic borders measuring around 5 mm x 5 mm at the right lateral border of the tongue.(Figure V)

No pain was observed on palpation of the ulcer.

Examination of the rest of intraoral mucosa revealed no other lesions. On biting, right lateral border of the tongue was wedged between the 2nd pre – molar teeth.(Figure VI)



Figure V: **Large round ulcer at the right lateral border of the tongue**



Figure VI: **On biting, right lateral border of the tongue wedging between the 2nd pre – molar teeth**

DIFFERENTIAL DIAGNOSIS

Traumatic Ulcer, Squamous Cell Carcinoma.

History of long – term painless ulcer with a clinical appearance of indurated borders and no necrotic material was suggestive of Squamous Cell Carcinoma. However, on examination of the occlusion, the tongue appeared to be wedged between the 2nd pre-molar teeth and hence suggestive of a Traumatic ulcer.

TREATMENT PLAN

Lubrication of mouth by CocosNucifera oil (Coconut oil) as a mouth rinse three to four times a day. Conservative measures of removal of the source of trauma or irritation to ulcer by extraction of mandibular 2nd pre – molar tooth. Extraction was done under local anaesthesia. Post – operatively, within one week, the ulcerative lesion showed signs of healing and was completely resolved within 2 weeks.

Management of both the cases - Phases of Treatment

1. Identification and removal of etiology :A cause-and-effect relationship must be established not only to make a definitive diagnosis of Traumatic ulcer, but also to identify and eliminate the traumatizing agent.
2. To promote salivary stimulation or use substitutes for lubrication.
3. Detoxification of the system
4. Administration of Antioxidants

Persistent ulcers not responding to this regimen should be recommended for biopsy or surgically excised and closed primarily; the excised tissue must always be microscopically examined, since a persistent ulcer could be a malignant lesion.

The fact that clinical appearance of the ulcer which could have differential diagnosis of malignant lesions could heal with removal of irritation and rehabilitation of the oral cavity with salivary substitutes.

Regular review to monitor the condition of teeth, gingivae and mucosa and to give support and reinforcement of preventive measures is advised.

DISCUSSION (Differential diagnosis of Persistent Ulcers)

Ulcers secondary to systemic disease are usually short term, but they may persist if the predisposing systemic disease is not corrected. They may be confused with any of the shallow persistent ulcers – Traumatic Ulcer, early Squamous Cell Carcinoma, Chancre, and early Mucoepidermoid Tumor. Usually the systemic problem becomes apparent through the history or clinical examination and prompts the proper diagnosis. They are usually painful.

A Traumatic Ulcer can generally be ruled out by establishing the absence of physical injury. Gummata are uncommon oral lesions that occur mostly in the midline of the palate or the midline of the dorsum of the tongue. If the ulcer is reddish brown, has a copper-colored halo, and is shallow and if there is no history of mechanical trauma, the diagnosis is strengthened. Major RAU is a persistent ulcer that may closely resemble a Squamous Cell Carcinoma on clinical examination.

However, two striking features help the clinician rule out the malignancy and make the identification of major RAU: the severe pain and the broad inflammatory (non-velvety red) border[1].

Squamous Cell Carcinoma is the most common malignant ulcer of the oral mucosa. The early lesion may be a painless, shallow ulcer with a velvety red base and a firm, raised border. The healing Traumatic Ulcer, because its base may be filled with reddish-pink granulation tissue, may resemble this early lesion. A lesion is most likely a Squamous Cell Carcinoma, however, if (i) the patient is over 40 years of age, is male, and smokes or drinks heavily; (ii) there is no evidence that the lesion is related to trauma or systemic disease; (iii) the serologic findings are negative, and the presence of spirochetes cannot be demonstrated; and (iv) the lesion is not located on the posterolateral region of the hard palate[1].

The diagnosis of Traumatic Ulcer is primarily based upon the recognition of the traumatic agent and the quick return to normal function after the cause has been removed. Prognosis of Traumatic Ulcer is good and the ulcer heals readily without leaving any noticeable scar.

Typically the lesion begins as an ulcerated area on the ventral surface or lateral borders of the tongue with repeated trauma, it may progress to an enlarged, fibrous mass with appearance of an ulcerative granuloma, if not intervened.

Whenever clinical and histological features suggest of Squamous Cell Carcinoma, a conservative approach to relieve any sort of trauma could be advisable. After the removal of etiology, promotion of salivary stimulation or use substitutes for lubrication are considered.

Salivary proteins plays a very important role in lubrication of the oral tissues. The lubricatory film allows food to travel through the surfaces with minimal friction. Soft tissue repair by constant salivary flow in the oral cavity has also been proved[7].

Lubricating agent used for management of these cases was *Cocus Nucifera* oil (coconut oil). Functional components of coconut oil are Squaline, Tocopherol, Phtyosterols and other sterols which are all plant steroids; Which reduces inflammation, rashes and eczema. It is also called nature's steroid cream.[8]

According to Hartwell (1967-71), *Cocus Nucifera* (Coconut) has got the properties of antifungal, antiviral, bactericidal,

antiseptic, astringent and a remedy of tumours. It also acts as a moisturizer and lends oxidative stability to formulations in which it is used.

According to the C.S.I.R report (1948-76), traces of beta-carotene were reported in coconut.

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