Biomedical & Pharmacology Journal Vol. **10**(1), 401-405 (2017)

Ulcerative Lesions of the Oral Cavity – An Overview

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http://dx.doi.org/10.13005/bpj/1122

(Received: December 08, 2016; accepted: March 10, 2017)

ABSTRACT

Oral ulcers, although very common entity in dental clinics can be very challenging to diagnose because of their diversity in etiology and presentation.Oral mucosal ulcers range from ulcers due to minor local trauma to significant diseases such as bacterial, viral and fungal infections, malignancy and other systemic illness. Oral ulcers are diagnosed based on the patient's history,clinical appearance, site, duration and frequency and the underlying systemic condition Furthermore, histopathology also aids in a definitive diagnosis for the majority of ulcerative lesions.As the list of ulcerative lesions in the oral cavity is quite extensive, the focus here will be on the most common lesions.The etiology,clinical aspects and the diagnosis of the common ulcers are discussed.

Keywords: Ulcerativ lesion. cavity, diagnosis, Oral ulcers.

INTRODUCTION

Oral ulcers are one of the most common complaints of the oral mucosa.A loss or break in the continuation of surface epithelium or mucous membrane that extends into lamina propria. Oral ulcers are confirmed by the underlying systemic condition such as the nature, site, duration and frequency.

Local factors

Traumatic ulcer

Physical traumatic ulcers are more common in oral cavity. Mainly due to sharp tooth,ill-fitting dentures,rough fillings ,fractured restoration,orthodontic appliance,sharp foreign body,bitting[1].Appears as yellow base with erythematous borders & heals in 7 -14 days if cause is removed .

Radiation / chemotherapy

Chemotherapy and radiation therapy overthrough the healthy balance of bacteria in the mouth and may lead to changes in the lining of the mouth and the salivary glands, which make saliva. This affects the healthy balance of bacteria. These changes may cause mucositis manifest as multiple areas of painful mucosal erythema,ulcers & sloughing.These complications can lead to other problems such as dehydration and malnutrition[2].

Chemical & thermal injury

Ulcer is due to aspirin , sodium perborate, cocaine or smoking crack cocaine (e.g., on the palate).Hydrogen peroxide, Chlorhexidine, Listerine, are the commonly used dental medicaments by patients that can cause mucosal damage.Chemical injury usually manifests as, superficial white, wrinkled appearance.Exposure

time increases,cause necrosis and the affected epithelium becomes separated from the underlying tissue and can be desquamated and leaving erosions. Histopathological examination shows features of coagulative necrosis[3]. If the chemical injury is involved with a salivary gland duct, it might end up with transient obstructive sialadinitis[4] and end up with permanent obstruction, chronic sialadinitis and may require surgical excision of duct/gland[5]Thermal injury is. most commonly on the palate & tongue.Arise due to hot foods or liquids which shows an erythematous area of vesicles which can later transform into an ulcer.

Infections

Bacterial

Tuberculosis

Tuberculosis (TB) is a chronic granulomatous infectious disease due to Mycobacterium tuberculosis[6].Tuberculosis can either be primary or secondary and can involve any part of the body. The oral cavity is an unusual site and almost due to secondary infection. These lesions manifest as non healing ulcers, nodules, fissures, verrucous proliferation, erythematous patches or plaques, indurated lesions, or as jaw lesions[7].The dorsal surface of the tongue is more commonly involved[8]and appears as undermined edges and a yellow granular base with minimal induration is seen.oral lesions follow lung lesions.Other sites such as gingiva, floor of the mouth, palate, lips, buccal folds, tooth sockets, and jaw bones[9,10].

Syphilis

Syphilis is an infectious venereal disease caused by the spirochete *Treponema palladium*, which are virulent to humans,and which are members of the order Spirochaetale. Syphilis may be acquired (common) or congenital (rare). Acquired syphilis is classified as primary, secondary and tertiary.Primary and secondary cause ulcer.

Viral

Herpes simplex infection

Herpes simplex ,an acute infectious disease commonly affecting man,with exception of viral respiratory infections.Two types of HSV: HSV - 1 & HSV – 2 . HSV-1 infections affect the face and mouth ; HSV-2 infections occur genitally. Both viruses may cause recurrent disease Transmitted directly by contact with body fluids. Seen in immovable mucosa. Within few days ,the mouth becomes painful and the gingival is intensely inflamed appears as edematous and erythematous Mainly affects lips,tongue,buccal mucosa,palate,pharynx and tonsils. Lesion appears as small vesicles,which are thin walled,surrounded by inflammatory base are formed .These vesicles rupture and form shallow,oval shaped discrete ulcers and covered by with grayish white or yellow plaque and surrounded by an erythematous halo and cause extremely painful ulcers.The ulcers may vary in size measuring millimetres or centimetre in diameter.They heal spontaneously within 7 – 14 days and leave no scar.

Chicken pox

An acute viral disease caused by Varicella – Zoster virus is similar to herpes simplex virus,occurring in children. Most common in winter and spring months. Transmission is by air-borne droplet or direct contact with active lesions .Most common sites are vermillion border of the lips and palate followed by buccal mucosa resembles aphthous ulcers.Lasts 7-10 days .The lesion begins as 3- 4 mm,white ,opaque vesicles that rupture to form 1 to 3 cm ulcerations.

Hand,foot & mouth disease

It is an epidemic infection caused by the

Primary Syphilis - Chancre	Secondary Syphilis – Mucous patch
Appears 3 wks after the infection	Appears after the primary infection
Lips, tongue,gingiva ,tonsils	Highly contagious
Single,indurated ,non painful ulcer	Multiple, painless,greyish white plaque overlying an ulcerated surface surrounded by erythematous zone
Spontaneously heals in 4-6 wks	Tongue,gingiva ,buccal mucosa
-	Neighbouring ulcer fuse – Snail track ulcer

enterovirus 71 and by A16,A5,A9,A10,echovirus 9.Smal ,multiple ulcers preceded by vesicles,commonly seen in children,highly contagious which is self limited.lesion might be scary &recovery is less than a week. In add to that patient may develop ulcer in cutaneous region.Mainly affects hard palate,tongue and buccal mucosa. The lesions of the disease are raised,discrete,whitish or yellowish to dark pink solid papules or nodules,surrounded by a narrow zone of erythema. A sore mouth with refusal to eat and the tongue may become red and edematous.

HIV Infection

Acquired immunodeficiency syndrome is caused by the human immunodeficiency virus (HIV). Characterised by immuno suppression.Caused by HIV -1 and HIV – 2. It is a nononcogenic human retrovirus and it belongs to a lentivirus group type III.Mode of transmission is by sexual,infected body fluids such as blood and blood products and breast milk. Saliva is not a significant route of transmission of HIV. Infection can be transmitted vertically from mother to child.Wide spectrum of oral ulcerative lesions.Develop deep necrotic ulcers of unknown etiology .HHV-8 DNA - detected within such ulcers.HIV disease may have ulcers similar to those of recurrent apthous stomatitis.

Fungal

Mucormycosis

Mucormycosis (zygomycosis) is a rare, aggressive, invasive fungal infection that usually afflicts immunosuppressed patients[11].Most common 3rd invasive fungal infection,following aspergillosis and candiadiasis and also found in autopsies of hematologic patients.occur in soil & manure,Which is very common in diabetic pts & it represents a necrotic lesion of the palate.Mode of spread throughdirect extension or through blood vessels and lymph vessels.other sites involved are buccal mucosa,upper and lower lip,mandible. Rhinocerebral mucormycosis is the most common type and its extension to the orbit and brain is quite usual[12]. Intraorally,ulcer with raised erythematous borders with surface of the ulcer appearing black and necrotic with areas of denudation is seen. Often associated with traid of symptoms,Uncontrolled diabetes mellitus,periorbital infection, meningo encephalitis.

Systemic factors

Gastrointestinal disease

Crohns disease

Crohns disease is a granulomatous inflammation of the intestine & aiso involves the oral cavity of unknown etiology.Present as linear ulcers & hyperplastic folds of the buccal and labial vestibules which may mimic denture induced hyperplasia. Fissuring of the tongue . extremely rare, pyostomatitis vegetans is an oral type of Crohn's disease that results in multiple abscesses, pustules, and ulcers in the oral cavity. Crohn's sufferers will develop painful sores in the mouth, known as aphthous ulcers. These oral ulcers usually appear during a flare-up of intestinal inflammation[13].

linical features of recurrent apthous stomatitis

	Minor	Major	Herpetiform
Age of onset	10-19	10- 19	20- 29
Numbers of ulcer	1-5	1-10	10 – 100
Sites	Lip,cheek ,tongue	Palate,pharynx	Floor of the mouth,pharynx, palate,gingiva
Size of ulcers (mm)	<10	>10	1-2 but often coalse
Duration in days	10-14	→30	10-30
	Small yellowbase surrounded by erythematous border and heals without scarring	Single large ulcer,heals with scarring	Multiple shallow ulcers,pin head shaped,painful ulcerS

Ulcerative colitis

Pyostomatitis vegetans is an uncommon inflammatory disease of the oral cavity.Occurs in upper & lower anterior vestibule.Sometimes hard & soft palate ,tongue involvement is uncommon.Many small projections show tiny pustules beneath the epithelium,which liberate purulent material when ruptured.These leaves areas of ulceration,which may coalesce into form an large areas of necrosis known as snail track ulcerations.Palatal lesion appeared as multiple apthous ulcers[14].

Mucocutaneous

Lichen planus

It is a common mucocutaneous disease.Oral lesions may accompany or even precede the appearance of skin and genital lesions.Seen in adulthood, and children are rarely affected. usually observed in nervous, 'highly strung' people (Shaler 1983). Mainly due to stress and T cell mediated condition and other causes includes trauma, malnutrition and infection. It can occur anywhere in the oral cavity. The buccal mucosa. tongue, and gingiva are the most common sites, whereas palatal lesions are uncommon. They are usually symmetrical and bilateral lesions or multiple lesions in the mouth. Andreasen (1968) histopathologically divided oral lichen planus into six types: reticular, papular, plaque-like, erosive, atrophic, and bullous. The reticular, papular, and plaque-like forms are usually painless and appear clinically as white keratolic lesions. The bullous , atrophic, and erosive forms are often associated with a burning sensation and in many cases can cause severe pain[15].

Erythema multiforme

Caused by mycoplasma pneumonia,herpes simplex virus,drugs like sulphonamides & penicillin . Severe form of EM – stevens johnson syndrome which is characterized by crusted ulcers on vermillion border of lip followed by buccal mucosa ,tongue,lips,palate & extremities .

Systemic erythematosus

Lupus erythematosus is an autoimmune disease involving both humoral & cell mediated immune system.2 forms – Discoid & Systemic of which SLE present as ulcer on palate. Erythematous rash,seen over malar processes & the bridge of the nose.This Butterfly distribution is associated with SLE.

Malignancy

Squamous cell carcinoma

90% of all cases caused by tobacco.Due to pipe smoking,present on the vermillion border of lip to 1 side of the midline.Ulcer due to chronic irritation on the lateral & ventral border of tongue.Indurated ulcer with raised borders. smoking,alcohol indurated ulcer of varying size present on 1 side of midline .Due to chewing of tobacco & betal nut,dental irri &cheek biting.Present as induration & infiltration of deeper tissues.

Miscellaneous

Necrotizing sialometaplasia

It is a rare, self limiting, variably ulcerated, benign, inflammatory process, predominantly affecting salivary tissue.The importance of the lesion is that it may be mistaken for a malignancy and lead to inappropriately radical surgery. The vast majority (80%) of cases affect the minor salivary glands of the palate, while other sites include retro-molar pad, gingiva, lip, tongue and cheek. The condition has also been reported in major salivary glands. A sub-acute variant has also been described. association with other tumours, specifically: Warthin's tumour, Abrisokov's tumour, carcinoma of the lip, rapidly growing mesenchymal malignancy and salivary gland tumours.The lesions may 1 occur bilaterally and metachronously. When ulceration occurs, it usually remains superficial, but a single case of full-thickness necrosis of the palate has been reported.The lesion heals spontaneously over a period of two to twelve weeks. Drug therapy with intra-lesional steroids appears to offer no benefit on recovery time of the lesion or associated anaesthesia[16].

Recurrent aphthous stomatitis

The term "aphthous" is derived from a Greek word "aphtha" which means ulceration. Recurrent aphthous stomatitis (RAS) is one of the most common painful oral mucosal conditions seen among patients. These present as recurrent, multiple, small, round, or ovoid ulcers, with circumscribed margins, having yellow or gray floors

and are surrounded by erythematous haloes, present first in childhood or adolescence[17].Due to genetics,trauma,tobacco,drugs,hemantinic acid, Sodium lauryl sulfate - containing toothpaste[18].

CONCLUSION

The diversity in causes of oral ulceration can be a challenging to task .Hence through knowledge of presentation of the ulcer together with the signs and symptoms of the disease can help the clinician to provide a proper management

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