

ORAL MEDICINE

INFECTIOUS DISEASES OF ORAL MUCOSA

BACTERIAL INFECTIONS

1- Tuberculosis

Oral tuberculosis is rare and a complication of pulmonary disease with infected sputum. Those with HIV infection are an important group of victims, but *oral tuberculosis is occasionally seen in immune-competent persons* who are usually elderly men with pulmonary infection that has progressed unrecognized or who have neglected treatment.

The typical oral lesion is an ulcer on the mid-dorsum of the tongue, lips or other parts of the mouth are infrequently affected. The ulcer is typically *angular*, with *overhanging edges* and a *pale floor*, but can be *ragged* and *irregular*. It is *painless* in its early stages and *regional lymph nodes* are usually not *affected*.

Management

Diagnosis is confirmed by biopsy, chest radiography and a specimen of sputum. Mycobacterial infection is confirmed by culture or PCR (polymerize chain reaction). Oral lesions subside rapidly if vigorous multidrug antibiotics is given for the pulmonary infection. *No local treatment is needed*.

2- Syphilis

Congenital syphilis is syphilis present in uterus and at birth, and occurs when a child is born to a mother with secondary syphilis. Some infants with congenital syphilis have symptoms at birth, but most develop symptoms later.

Blunted upper incisor teeth known as Hutchinson's teeth , mulberry molars, saddle nose (collapse of the bony part of nose) and hard palate defect all are sign that could been seen in congenital syphilis.

Acquired Syphilis:

Oral lesions have recently been reported in Britain but some may pass unrecognized. There are three types of syphilis which are:-

I. Primary syphilis

An oral *chancre* appears 3-4 weeks after infection and may form on the *lip*, tip of the *tongue* or rarely other oral sites. It consists initially of a firm nodule about a centimeter across. The surface breaks down after a few days, leaving a rounded ulcer with raised indurated edges. This may resemble a *carcinoma*, particularly if on the *lip*. A chancre is typically painless but regional lymph nodes are enlarged, rubbery and separate. *Serological reactions are negative at first*, so the diagnosis depends on finding of *Treponema pallidum* by dark-ground illumination of a smear from a chancre.

II. Secondary syphilis

The secondary stage develops 1-4 months after infection. It typically causes mild fever with malaise, headache, sore throat, and generalized lymphadenopathy, soon followed by a rash and stomatitis.

Oral lesions, which rarely appear without the rash mainly affect the tonsils, lateral borders of the tongue, and lips. They are usually flat ulcers covered by grayish membrane and may be irregularly linear (*snail's track ulcers*) or coalesce to form well-defined rounded area (*mucous patches*). Diagnosis is performed by serological reactions which are *positive* at this stage.

Condylomata lata are raised mucous patches that resemble large flat papilloma may also see in this stage.

III. Tertiary syphilis

Late stage syphilis develops in many patients about three or more years after infection. The onset is insidious and during the latent period the patient may appear well. A characteristic lesion is the *gumma*, which clinically may affect the *palate, tongue, and tonsils*. The gumma can vary from one to several inches in diameter. It begins as a swelling, sometimes with a yellowish centre which undergoes necrosis, leaving a painless indolent deep ulcer. The ulcer is rounded, with soft, punched out edges. The floor is depressed and pale in appearance. It eventually heals with severe *scarring* which may distort the *soft palate or tongue*, and the complications are perforate the *hard palate or destroy the uvula*.

Management

Antibiotics, particularly penicillin, are the mainstay of treatment, but tetracycline and erythromycin are also effective. Treatment should be by a specialist and must be continued until non-specific serological reactions are persistently negative.

CANDIDOSIS

Candidal infection can cause a spectrum of lesions or candidosis which are:- (1) *acute candidosis* (thrush and acute antibiotic stomatitis); (2) *chronic candidosis* (denture induced stomatitis, chronic hyperplastic candidosis, chronic mucocutaneous candidosis, and erythematous candidosis); (3) *angular stomatitis* which is common to all types of oral candidosis. Factors predisposing to candidal are:-

1- Immunodeficiency (e.g. diabetes mellitus or AIDS) or immunosuppression including steroid inhaler).

2- Anaemia

3- suppression of oral flora by broad spectrum antibacterial drugs.

4- Xerostomia

1- Thrush

Thrush is a disease recognized in infants and can also affect adults. It term also *acute pseudomembranous candidosis*. Neonatal thrush results from immaturity of the immune response and infection is probably acquired during passage through the birth canal. Any adult male who develops thrush *without apparent cause* should be suspected of having HIV infection. However, any form of candidosis can be secondary to HIV infection. Thrush forms *soft, friable, and creamy* colored *plaques* on the mucosa. The distinctive feature is that they can be easily wiped off to expose an *erythematous* mucosa. Their extent varies from isolated small flecks to widespread confluent plaque. Angular stomatitis is frequently associated as it is with any form of intraoral candidosis.

Management

Control of any local cause such as topical antibiotic treatment may alone cause thrush to resolve. If not, a course of nystatin or amphotericin lozenges should allow the oral microflora to return to normal. Failure of response to topical antifungals such as nystatin suggests immune deficiency.

2- Acute antibiotic stomatitis(Acute Atrophic Candidiasis)

This can follow overuse or topical oral use of antibiotics, especially rinse the mouth by tetracycline, suppressing normal competing oral flora. It is infrequently seen now. Clinically the whole mucosa is red and sore. Flecks of thrush may be persist. Resolution may follow withdrawal of the antibiotic but is associated by topical antifungal treatment. Generalized candidal erythema, which is clinically similar, can also be a consequence of xerostomia which promotes candidal infection. It is a typical complication of Sjögren's syndrome. Nystatin suspension or miconazole gel held in the mouth is usually effective.

N.B. candidiasis Chronic atrophic candidiasis includes denture stomatitis (denture sore mouth), angular cheilitis, and median rhomboid glossitis.

3- Denture-induced stomatitis

A well-fitting upper denture cuts off the underlying mucosa from the protective action of saliva. In susceptible patients, particularly smokers, this can promote candidosis, seen as a symptomless area of erythema. The erythema is sharply limited to the area of mucosa occluded by a well-fitting upper denture or even an orthodontic plate. Similar inflammation is seen under the more mobile lower denture which allows a relatively free of saliva beneath it. *Smoking* also appears to increase the susceptibility to this infection. In the past, denture-induced stomatitis was ascribed to 'allergy' to denture base material but there is no foundation for this *fancy*.

Three progressive clinical stages of denture sore mouth have been described. The first stage consists of numerous palatal petechiae. The second stage displays a more diffuse erythema involving most (if not all) of the denture-covered mucosa. The third stage includes the development of tissue granulation or nodularity (papillary hyperplasia) , commonly involving the central areas of the hard palate and alveolar ridges.

Management

The clinical picture is distinctive but the diagnosis can be confirmed by finding *candidal hyphae* in a *Gram-stained* smear taken from the inflamed mucosa or the fitting surface of the denture. The infection responds to antifungal drugs, but topical agents such as *nystatin* (mycostatin suspension, 3 times/day) used for short periods of time only, with particular caution in patients who are xerostomic. Swallowing is not mandatory, or *amphotericin* (Fungizone solution) by rinse and swallowed, can only gain access to the palate if the patient leaves out the denture. The oral troche (Mycelex) which topical use of Clotrimazole dissolved in mouth 5 times daily may be effective in treatment of oral candidosis.

4- Angular Stomatitis

Angular stomatitis is typically caused by leakage of *candida-infected saliva* at the angles of the mouth. It can be seen in infantile thrush, in denture wearers or in associated with *chronic hyperplastic candidosis*. It is a characteristic sign of candidal infection. Clinically, there is mild inflammation at the angles of the mouth. In elderly patients with denture-induced stomatitis, inflammation frequently extends along folds of the facial skin extending from the angles of the mouth. These folds have frequently but unjustifiable been ascribed to ‘closed bite’, but in fact are due to sagging of the facial tissues with age. Furrows at the angles of the mouth are made deeper by loss of vertical dimension and by loss of support to the upper lip by resorption of the underlying bone. Concept of establishment of *correct vertical dimension* and increasing the thickness of the labial flange of the upper denture can slightly lesson these furrows, they can rarely be eliminated in this way. *Plastic surgery* is required when patients are anxious to have these signs of age removed. Treatment of intraoral candidal infection alone causes angular stomatitis to resolve. If there is *co-infection* with *S. aureus*, local application of *fusidic acid* cream may be required.

CHRONIC HYPERPLASTIC CANDIDIASIS

Chronic hyperplastic candidiasis (CHC) includes a variety of clinically recognized conditions in which mycelial invasion of the deeper layers of the mucosa and skin occurs, causing a proliferative response of host tissue.

Candidal leukoplakia is considered a chronic form of oral *Candida* in which firm white leathery plaques are detected on the cheeks, lips, palate, and tongue. The differentiation of candidal leukoplakia from other forms of leukoplakia is based on finding periodic acid–Schiff (PAS)–positive hyphae in leukoplakic lesions. CHC also occurs as part of chronic mucocutaneous candidiasis, often with identifiable predisposing immunologic or endocrine abnormalities. These patients develop similar lesions around the nails and other skin sites or alternatively develop only isolated oral lesions. CHC also occurs on the dorsum of the tongue and may resemble median rhomboid glossitis .Approximately 10% of oral leukoplakias satisfy the clinical and histologic criteria for CHC. Epithelial dysplasia occurs four to five times more frequently in candidal (speckled) leukoplakia than in leukoplakia in general and has been reported in as many as 50% of cases of candidal (speckled) leukoplakia in some series. *Candida* is known to cause epithelial proliferation, and this high number of cases of dysplasia may be exaggerated because of the induction of inflammatory or atypical (reactive) changes in the epithelium (ie, changes that do not constitute actual dysplasia).However, dysplastic and carcinomatous changes are more common in speckled leukoplakia than in homogeneous leukoplakia.