

Red Lesions of Oral Cavity: A Review

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Abstract:- The most common oral lesions are erythematous. It will be from benign reactive or immunologically-mediated disorders to malignant diseases. Red patches of the oral mucosa constitute an important group of disorders arising from a diverse spectrum of conditions ranging from traumatic lesions, infectious diseases, systemic and local immune-mediated lesions, to potentially malignant disorders or a neoplasm. Oral erythroplakia is considered a rare potential malignant lesion of the oral cavity. Most red oral lesions are associated with inflammation. Some are potentially malignant, especially erythroplakia.

Keywords:- Erythematous, Potentially Malignant, Oral Erythroplakia, Hemangioma, Vascular.

I. INTRODUCTION

Erythematous/ red lesions of the oral mucosa are common and may result from a variety of tissue alterations, including inflammation, erythrocyte extravasation, and atrophy or reduced keratinization of the surface epithelium. The color of the lesion when associated with vascular processes will be reddish to bluish-purple in color. Benign and malignant vascular anomalies, reactive processes, immune-mediated diseases, hematologic disorders as well as potentially malignant (precancerous) and malignant epithelial lesions are differential¹. Most of the red oral lesions are inflammatory, but some are potentially malignant, especially erythroplakia².

➤ Classification

Classification According to the Brad W. Neville, Douglas D. Damm, Carl M. Allen, Angela Chi – First South Asia Edition Red lesions

- Pharyngitis
- Traumatic erythema
- Denture stomatitis
- Erythematous candidiasis
- Erythema migrans
- Angular cheilitis
- Thermal burns
- Erythroplakia
- Anemia
- Hemangioma
- Lupus erythematosus

- Scarlet fever
- Plasma cell gingivitis
- Radiation mucositis³

II. PHARYNGITIS

Extremely Common

Caused by Many Different Organisms

➤ Etiology

Group A, β hemolytic streptococci, Adenoviruses, Enteroviruses, Influenza, Para influenza viruses, Epstein Barr viruses

➤ Transmission

Person-to-person contact through respiratory droplets or oral secretions with a short incubation period of 2 – 5 years.

➤ Clinical features

Age 5-15 years

Common findings- sore throat, temperature 101degree -104 degrees F, dysphagia, tonsillar hyperplasia, redness of oropharynx and tonsil, palatal petechiae, cervical lymphadenopathy, yellowish tonsillar exudate.

➤ Treatment

Self-limited and resolves spontaneously within 3-4 days.

Oral antibiotic – Penicillin V or Amoxicillin³.

III. DENTURE STOMATITIS

Denture stomatitis (DS) is an inflammatory condition limited to denture-bearing mucosa underlying a removable prosthesis¹.

Denture stomatitis is also referred to as denture sore mouth, chronic atrophic candidiasis, or candida-associated denture-induced stomatitis⁴.

It is commonly seen in middle age people².

➤ *Predisposing Factors:*

- Wearing dentures (especially through the night),
- Poor oral and denture hygiene,
- Xerostomia and
- Carbohydrate-rich diets.
- Any allergy to the denture material will not cause denture stomatitis².

➤ *Etiology:*

Main cause - *Candida albicans*².

Other species of yeast, such as *Candida glabrata*, *Candida tropicalis*, and *Candida dubliniensis*, have been identified from the denture-bearing area⁴.

➤ *Types:*

Denture stomatitis is classified into 3 clinical types:

- Type I - an inflammation that is localized or pinpoint hyperemia.
- Type II - an erythematous or generalized type presenting as more diffuse erythema involving part of, or the entire, denture-covered mucosa.
- Type III - a granular or papillary type that involves a hard palate and alveolar ridge⁴.

➤ *Clinical Features:*

- Chronic erythema and edema of the mucosa⁴.
- Zone of erythema - localized or diffuse
- Border - well-delineated
- It presents as smooth, atrophic mucosa exhibiting variable erythema and petechial hemorrhage¹.

➤ *Management:*

- Soaking dentures overnight in chlorhexidine or hypochlorite solution can eradicate the infection.
- Metal dentures should not be soaked in hypochlorite as they may discolor.
- Miconazole gel or amphotericin lozenges can be given.
- Systemic fluconazole can be given for resistant cases.
- Dentures adjustments can be made².

IV. ERYTHEMATOUS CANDIDIASIS

Previously known as the atrophic variant of candidiasis, or as antibiotic sore mouth⁴.

➤ *Etiology*

- It occurs in patients with long-course use of broad-spectrum antibiotics, smoking, and steroid inhalation⁵.
- It can be seen in patients with HIV infection, xerostomia and diabetes².

➤ *Clinical Features*

- Well-demarcated erythematous areas are seen on the dorsum of the tongue, palate, or buccal mucosa.
- The erythematous appearance on the dorsum of the tongue is principally a result of depapillated patches.
- Frequently a **mirror lesion** in the palate that encountered on the dorsal tongue⁴.
- A biopsy may show pseudo epitheliomatous hyperplasia, but the condition is not potentially malignant².

➤ *Management*

- It may respond to stopping smoking and antifungal agents².
- Nystatin is considered as first line of drug. Nausea and a bad taste in the mouth are the only side effects. It has been combined with tetracyclines for the prevention of superinfection⁶.

V. BENIGN MIGRATORY GLOSSITIS

Also known as geographic tongue, migratory stomatitis, erythema areata migrans.

BMG is a chronic, benign inflammatory condition of the tongue characterized by relapsing-recurring loss of filiform papillae⁷.

➤ *Etiology*

- The etiopathogenesis is poorly understood.
- It is an immunologically-mediated process and can be associated with fissured tongue¹.
- It often occurs in atopic patients, namely, those with or who have a history of asthma, eczema, hay fever, food sensitivities, and other allergies.
- Associated with psoriasis and Reiter disease⁷.

➤ *Clinical Features*

- The zones of erythema – are multiple and well-demarcated.
- Atrophy will be seen in filiform papillae of the anterior two-thirds of the dorsal and lateral surfaces of the tongue.
- Borders - thin, circinate, or serpentine yellowish-white borders.
- Size and shape - Tend to morph or “migrate” over days or weeks- **wandering rash of the tongue** or **benign migratory glossitis**.
- **Geographic tongue** - The atrophic or depapillated areas of the tongue are also called reminiscent of continents on a globe.
- In ventral tongue - **ectopic geographic tongue** or **erythema migrans**¹.

- When sites other than the tongue such as the lip mucosa, floor of the mouth, or soft palate are affected, it is referred to as **migratory stomatitis or stomatitis areata migrans**⁷.

➤ *Histopathology*

- Parakeratosis
- Spongiosis is seen with the elongation of epithelial rete ridges and atrophy is seen in suprapapillary plates.
- **Munro microabscesses** are the collection of neutrophils seen.
- These microabscesses are commonly seen in the periphery of lesions with yellowish-white circinate borders¹.

➤ *Differential Diagnosis*

- Erythroplakia
- Atrophic glossitis of anemia
- Erythematous candidiasis¹.

➤ *Management*

- SIIt can be treated with **lidocaine** and diphenhydramine.
- Other agents are topical steroids and anti-fungal medications.
- In severe cases, it can be treated with topical steroid rinses such as dexamethasone oral rinses or steroid gels and creams⁷.

VI. ANGULAR CHEILITIS

- The involvement of the angles of the mouth is characterized by erythema, fissuring, and scaling.
- It is seen as a component of chronic multifocal candidiasis, but it occurs alone, typically in an older person with reduced vertical dimension and attenuated folds at the corners of the mouth.
- Saliva will pool and make the area moist which favors a yeast infection³.

VII. THERMAL BURNS

Can be caused by the ingestion of hot foods or taking hot beverages.

➤ *Clinical Features*

- The most commonly affected sites are the palate or posterior buccal mucosa
- Lesions appear as a zone of erythema and ulcerations that often exhibit remnants of the necrotic epithelium at the periphery
- If hot beverages are swallowed, swelling of the upper airway can occur- dyspnea.

➤ *Treatment*

- They resolve without treatment.
- When the upper airway is involved and associated with breathing difficulty- antibiotics and corticosteroids are administered.
- In severe cases, oral intake of food is discontinued temporarily with nutrition provided by nasogastric tube³.

VIII. ERYTHROPLAKIA

Erythroplakia - the most dangerous premalignant red lesion.

Fiery red patches are difficult to differentiate clinically or pathologically from other definable lesions⁸.

➤ *Classification*

• *Clinical Variations*

- ✓ Homogeneous erythroplakia
- ✓ Erythroplakia with patches of leukoplakia
- ✓ Granular or speckled erythroplakia

• Microscopic variations

✓ Neoplastic

- Squamous carcinoma
- Carcinoma in situ

✓ Inflammatory

- Candida albicans infections with denture stomatitis.
- Tuberculosis
- Histoplasmosis
- Miscellaneous specific, non-specific, and non-diagnosable lesions⁹.

➤ *Etiology*

- Etiology and pathogenesis - poorly understood.
- Predisposing factors- unknown.
- Chewing tobacco, smoking, alcohol drinking, body mass index (BMI), and vegetable, fruit, and vitamin/iron intake are probably involved in most of the cases⁹.
- **Human papillomavirus (HPV)** infections are also said to be a causative factor. Lesions developing cancer were all positive for HPV⁸.

➤ *Clinical Features*

- **Granular fiery red lesions – smooth or velvety** can be seen below the level of the surrounding mucosa.
- The most common site- buccal mucosa and palatal mucosa⁸.
- They can have an irregular, red granular surface with white or yellow foci- **granular erythroplakia**.

- There may be numerous, small irregular foci of leukoplakia dispersed in the erythroplakic patch-speckled **leukoplakia**.
- Specific palatal changes including red areas were described in chute smoking, which is reverse cigar smoking.
- These red areas and patches were characterized as well-defined reddening of the palatal mucosa and were considered to represent precancerous lesions.
- Palatal changes are
- **palatal keratosis** - diffuse whitening is seen in palatal mucosa
- **excrescences** - 1–3 mm nodules
- **patches** - well-defined and elevated white plaques
- **ulcerated areas**, and
- **non-pigmented areas**⁹.

➤ *Differential Diagnosis*

- Mycotic Infections
- ✓ Oral candidiasis
- ✓ Erythematous candidiasis
- ✓ Generalized candidal erythema
- ✓ Denture-induced stomatitis
- ✓ Histoplasmosis
- Bacterial Infections
- ✓ Tuberculosis
- Mucosal diseases
- ✓ Atrophic oral lichen planus
- ✓ Lupus erythematosus
- ✓ Pemphigus
- ✓ Pemphigoids
- Others
- ✓ Amelanotic melanoma
- ✓ Haemangioma
- ✓ Telangiectasia, lingual varices
- ✓ Kaposi's sarcoma
- ✓ Oral purpura⁹.

➤ *Treatment*

- Early effective treatment is mandatory.
- The treatment for oral lesions at risk for malignant transformation has been **surgical excision** of lesions and regular follow-up examinations⁹.

IX. ANEMIA IRON DEFICIENCY ANEMIA

➤ *Etiology*

Iron deficiency anemia is caused by

- Decreased intake of iron
- Reduced absorption of iron

- Chronic loss of iron due to bleeding from GI
- Increased demand for pregnancy
- Can be associated with Plummer-Vinson:
- Iron deficiency is accompanied by dysphagia, atrophy of upper GI mucosa, and predisposition to oral cancer¹⁰.

➤ *Clinical Features*

- The mucosa is smooth, erythematous, and painful.
- Systemic manifestations are lethargy, fatigue, pallor, and shortness of breath. The nails become brittle (Koilonychia).

➤ *Diagnosis*

- Microcytic hypochromic anemia and reduced hemoglobin and hematocrit.

➤ *Management*

- Treatment of the underlying cause
- Dietary Iron supplements¹⁰.

X. PERNICIOUS ANEMIA

➤ *Etiology*

Deficiency of Vit B12

➤ *Clinical Features*

- Presence of erythematous, painful tongue also known as **Hunter's glossitis** or **Moeller's glossitis**.
- Angular Cheilitis

➤ *Histopathology*

- Shortened or absent rete ridges
- Epithelial atrophy

➤ *Diagnosis*

- Megaloblastic anemia with increased mean corpuscular volume (MCV) and reduced serum Vitamin B12
- The Schilling test is the confirmatory diagnostic test.

➤ *Management*

Parenteral injections of vitamin B12¹⁰.

XI. FOLIC ACID DEFICIENCY

➤ *Etiology*

- Malnutrition
- Excess alcohol consumption
- Small bowel disease
- Pregnancy
- Phenytoin or Methotrexate

➤ *Clinical Features*

- Presence of erythematous, painful tongue
- Angular cheilitis, Recurrent aphthous stomatitis
- Systemic manifestations are fatigue, lethargy, pallor, and shortness of breath.

➤ *Diagnosis*

Megaloblastic, macrocytic anemia, and decreased serum and folate levels.

➤ *Management*

- Oral folic acid
- Treatment of underlying cause¹⁰.

XII. RADIATION MUCOSITIS

➤ *Etiology*

Caused by ionizing radiation

➤ *Clinical Features*

- Multiple painful red patches and ulcerated areas
- Patches can be seen in the buccal mucosa and the floor of the mouth
- May persist for several weeks even after the end of radiotherapy treatment

➤ *Diagnosis*

Based on clinical history and examination

➤ *Management*

Maintaining good oral hygiene¹⁰.

XIII. HEMANGIOMA

Hemangiomas is a term given to benign neoplasms which are composed of vessels with disproportionate growth relative to the patient¹.

➤ *Clinical Features*

Intraorally, a superficial hemangioma-raised, reddish to the purple tumor with a distinct margin, blanching easily with pressure⁴.

- Deeply situated lesions- normal in color.
- In the absence of thrombosis, hemangiomas are usually soft and compressible.
- Application of gentle pressure can result in a loss of color or tissue blanching.
- An area of recent hemorrhage will not blanch¹.

➤ *Differential Diagnosis*

- Varix (varicosities, varices)
- Salivary gland lesions
- Gingival cyst,
- Amalgam tattoo
- Blue nevus¹.

➤ *Treatment*

- Many hemangiomas do not require any treatment but may require regular follow-up. They can regress spontaneously.
- A surgical approach is indicated in well-circumscribed malformations of moderate size⁴.

XIV. LUPUS ERYTHEMATOSUS

It is a chronic multisystemic autoimmune disorder that often presents with oral lesions.

Systemic lupus erythematosus (SLE), discoid lupus erythematosus (DLE), and subacute cutaneous lupus erythematosus (SCLE) are subsets of lupus erythematosus (LE)⁷.

➤ *Etiology*

- It is an autoimmune disease.
- It is a combination of genetic, hormonal, and environmental factors (e.g. smoking and exposure to ultraviolet light)⁷.

➤ *Clinical Features*

- Extraoral presentations of SLE in the head and neck area include a photo distributed or “butterfly” rash on the malar region.
- Atrophic plaques with follicular plugging and post-inflammatory hyperpigmentation are seen in cutaneous lesions of DLE.
- SCLE involves the sun-exposed area of the skin in the V-area of the neck, upper trunk, dorsum of the hands, and shoulders.
- Oral lesions of LE cause pain and sensitivity and present as aphthous-like ulcers or poorly demarcated, red and white, reticulated lesions of the buccal, lip, and palatal mucosa⁷.

➤ *Management*

- Topical steroids such as clobetasol or fluocinonide in localized lesions
- Steroid rinses - Dexamethasone, or intralesional steroid injections can be given⁷.

➤ *Scarlet Fever (Scarlatina)*

- It is a systemic infection produced by group A β Hemolytic streptococci.
- Occurs in susceptible patients who do not have anti-toxin antibodies.

➤ *Clinical features*

- Age – 3-12 years
- Incubation period – 1-7 years
- Clinical findings- fever, enanthem, and exanthem

- Tonsil, soft palate, and pharynx become erythematous and tonsillar crypts may be filled with yellowish exudate.
- Severe cases – exudates may become confluent and can resemble diphtheria
- Soft palate – scattered petechiae
- **White strawberry tongue** – during 1st two days the dorsal surface of the tongue demonstrates a white coating through which only fungiform papilla can be seen.
- **Red strawberry tongue** -by the 4th or 5th day – the white coating desquamates to reveal an erythematous dorsal surface with hyperplastic fungiform papilla.
- **Sunburn with goose pimples** – a classic rash of scarlet fever

➤ *Treatment*

- Oral antibiotic- penicillin V or amoxicillin
- Ibuprofen-reduce the fever and relieve the associated discomfort³.

XV. PLASMA CELL GINGIVITIS (Plasma Cell Orificial Mucositis)

Plasma cell gingivostomatitis (PCG) is a rare, yet distinctive, benign inflammatory condition characterized by extensive infiltration of plasma cells within the connective tissue of the oral mucosa⁷.

➤ *Etiology*

- A component of chewing gum is a cause of hypersensitivity.
- Flavoring agents such as cinnamaldehyde in chewing gum and toothpaste, mint candy, and herbs and spices⁷.

➤ *Clinical Features*

- Common findings are soreness and sensitivity during eating acidic and spicy foods and during brushing.
- Diffuse, bright erythema with swelling, edema, and loss of stippling are seen in marginal and attached gingiva.
- Gingival bleeding is common.
- The gingiva is the most common site of involvement, other mucosal sites are the buccal and palatal mucosa. Biopsy shows polyclonal plasma cells⁷.

➤ *Management*

- Elimination of causative factor.
- Topical and systemic steroids.
- In gross gingival enlargement, surgical excision is indicated⁷.

XVI. CONCLUSION

Red lesions of the oral cavity include a wide variety of conditions ranging from reactive reversible condition to potentially malignant and malignant lesions. These lesions may be small and isolated or involve the entire mucosa. Based on the etiology and prognosis, oral lesions can be managed. Any red lesion in the oral cavity should be evaluated with a proper history from the patient. Blood tests should be considered when nutritional deficiency causing a red lesion is suspected.

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