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Research Article

PEDIATRIC ORAL MUCOSAL LESION; BECAUSE IGNORANCE IS DANGEROUS

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A B S T R A C T

Traumatic oral soft tissue lesion is usually due to habits that cause injuries as food burns, lip and cheek biting, orthodontic devices, Sharp ends of wires in space maintainer or habit breaker, and any traumatic events. The color variation depending on the location or depth, quantity of the pigmentation, the superficial appear brown the deeper looks blue or black that makes the diagnosis of the pigmented oral lesions challenging and crucial for the exclusion of potential risk of malignancies. This article presents a broad overview of oral conditions that affect children, focusing on abnormalities of color and nodular changes. Ulcerative disorders are covered extensively in other readily accessible literature.

INTRODUCTION

Oral health is the entire health of the teeth, mucosal areas, periodontal tissues and tongue. The concept of oral and dental health is mostly being perceived to be limited to carious teeth and periodontal diseases by both clinicians and academics. Based on this view, diseases of oral mucosal areas are generally ignored by dental practitioners. Pseudomembranous candidiasis, a common condition in children, is an opportunistic fungal infection caused by Candida albicans, more likely to occur in children who had a recent use of antibiotics, corticosteroids, or extended exposure to pacifier. Melanotic nevus is an alteration of mucosal color. Nevi may be congenital or develop over the life span and mostly represent deviations of normal anatomy. Nodular vascular anomalies are currently classified into either benign tumors or vascular malformations based on the clinical presentation and evolution of the lesion and its histopathologic features. Andres Pinto *et al* in 2014, in his article (Pediatric Soft Tissue Oral Lesions) he divided the the lesions into several categorists according to lesions types as follows. Anatomic Variations in Gingiva, Frenum.[1]

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1. ***Mucosal Changes (COLOR):*** White Lesions, Lineaalba, Leukoedema, Pseudo membranous candidiasis, White sponge nevus. Red And/Or White Lesions: Petechiae, Purpura, Ecchymosis, Erythematous Candidiasis. Angular Chelitis, Erythema Migrans (Benign Migratory Glossitis), Median Rhomboid Glossitis.
2. ***Brown-Black Lesions****:* Physiologic Pigmentation, Amalgam Tattoo/Graphite, Melanotic Nevus.
3. ***Soft Tissue Nodules:*** Inflammatory/reactive lesions-Mucocele, Irritation fibroma, Peripheral ossifying fibroma, Pyogenic granuloma, Peripheral giant cell granuloma.
4. ***Infections:*** Herpes simplex virus, Coxsackievirus, Herpangina, Hand, foot, mouth, Candida albicans, HIV infection.

There are many causes of traumatic ulcerations in the mouth. These can be classified as physical, chemical, thermal, and radial. Sharp-edged teeth or restorations, rough fillings or habits such as cheek biting, hardly tooth brushing, burns due to the high temperature causes traumas. Especially in children, as a result of biting the lip due to the numbness following the mandibular anesthesia, larger traumatic ulcerations may usually occur on lower lip. A lot of chemicals and drugs can cause chemical irritation of the tissues inside the mouth.[2] Many of these substances are caustic. Aspirin, sodium perborate, hydrogen peroxide and alcohol are some of these

substances. Clinical features and history are important in the diagnosis of all traumatic lesions. The treatment strategy is based on the removal of the etiologic traumatic factor.

Scarlet fever, an infectious disease of 4-8yr-olds, may be due to a delayed type hypersensitivity to streptococcal erythrogenic toxin. Symptoms include sore throat, general malaise, fever, and characteristic red rash. The oral mucosa is reddened and the tongue undergoes pathognomonic changes; the dorsum develops a white coating through which white oedematous fungiform papillae project-the 'strawberry tongue' of scarlet fever. Later the white coating is shed and the dorsum becomes smooth and red with enlarged fungiform papillae-'raspberry tongue'. Treatment is directed towards the systemic condition with penicillin. The oral manifestations resolve within 14 days.[3]

Pseudomembranous candidiasis is common condition in children is an opportunistic fungal infection caused by Candida albicans, more likely to occur in children who had a recent use of antibiotics, corticosteroids, or extended exposure to pacifier.It is a hallmark oral finding in children with systemic conditions, such as endocrine disorders, leukemia, chemotherapy, radiation therapy, transplantation, prematurity, and malnutrition. The prevalence is 0.99% to 8.57% in children and 37.00% of infants. This condition is presented as superficial white plaques on the mucous membranes that can be wiped off. These white plaques can be seen on the buccal and labial mucosa, hard and soft palate, tongue, and oropharynx. Treatment usually includes gentian violet or topical nystatin for infants, and nystatin (topical) or topical clotrimazole for older children. Systemic fluconazole, ketoconazole, or itraconazole may be used for children who are at risk of developing systemic infection or are intolerant to topical therapy.[4]

Petechiae, Purpura, Ecchymosis

These red lesions are commonly caused by trauma affecting the underlying vasculature. They are frequently a sign of bleeding disorders, such as thrombocytopenia or hemophilia, and may occasionally be associated with leukemia and anemia. The prevalence of vascular lesions is 1.89% to 8.39% in children1,2 and may be up to 42.8% in children with systemic disease.11

The lesions are predominantly seen on the lips, tongue, hard palate, and gingiva and are classified as follows:

1. Petechiae: pinpoint hemorrhages
2. Purpura: 2-mm to 2-cm hemorrhages
3. Ecchymosis: >2 cm hemorrhages

Treatment includes the initial investigation of the source of the trauma to rule out child abuse. All other lesions associated with medical conditions or medications must be referred for further medical workup.[5]

Lesions Of The Gums that include, Eruption cyst or hematoma, Pigmentation, Retrocuspid papillae, Parulis ("gum boil"), Gingival overgrowth, Lesions Of The Tongue include, Ankyloglossia ("tongue-tie"), Congenital lingual melanotic macules, Geographic tongue, Fissured tongue, Mucoceles, Other lesions. Lesions of the Lips involves, Herpes labialis, Angular cheilitis, Freckling, Abnormalities of the labial frena, Mucoceles and ranulas. Lesions of The Palate which are, Herpangina and Other lesions.

Lesions That Occur at Multiple Sites as Benign tumors (Hemangiomas, Lymphangiomas).[6]

Traumatic overgrowth (Irritation fibromas, Peripheral ossifying fibromas, Pyogenic granulomas, Peripheral giant cell granulomas, Ulcerations, Traumatic ulcers, Aphthous ulcers and Infections. Most of the oral lesions were diagnosed bases on clinical findings.

Primary HSV: Varies widely in severity (increases with age); often subclinical, asymptomatic in 80%. In infancy is often mistakenly attributed to 'teething'. Presents with a single episode of widespread stomatitis and unstable mucosa with vesicles which break down to form shallow painful ulcers, enlarged, tender cervical lymph nodes, halitosis, coated tongue, fever, and a general malaise for 10-14 days. Although generally self-limiting, rare complications include herpetic encephalitis and menengitis. Diagnosis based on the clinical features and history, although the virus can be grown in cell culture. Microscopically ballooning degeneration of epithelial cells with intranuclear viral inclusions 'Lipshutz bodies' are seen. A fourfold i in convalescent phase antibodies is also diagnostic, but give the diagnosis only retrospectively. Treatment: bed rest, topical and systemic analgesia, a soft or liquid diet with extra fluid intake, and prevention of 2° infection (chlorhexidine mouthwash) is usually adequate in healthy patients. Severely ill or immunocompromised patients should receive systemic aciclovir.[7]

Physiologic Pigmentation is the most common form of diffuse and bilateral pigmentation that arises from the increased production of melanin in dark-skinned populations (Middle Eastern, African American, and occasionally Asians). In general, conditions that increase the prevalence of this pigmentation are race/ethnicity, increased age, smoking, pregnancy, endocrine syndromes, and hormonal changes. Atypical cases have been reported in newborns. Peutz-Jeghers syndrome is an autosomal dominant trait that is associated with multiple intraoral and perioral pigmentations, most of which do not require treatment and involute after the first decade of life. However, the early establishment of a diagnosis is critical for a gastroenterology workup for intestinal polyps and hamartomas that have a 2%to 3%tendency for malignant transformation.[8] Addison disease or adrenal insufficiency is an autoimmune disease resulting in insufficient secretion of glucocorticoids and mineralocorticoids. Initial symptoms include diffuse bronzing of the skin and mucous membranes. In the oral cavity, the pigmentation is commonly located on the gingiva, tongue, buccal mucosa, and hard palate. Occasionally, isolated macules maybe present. Oral surfaces frequently exposed to trauma may develop the pigmentation more frequently.[9] The prevalence of oral pigmentation in children is 13.5% with an onset in the first/second decades. The pigmentation is commonly found on the attached gingiva. Occasionally, the buccal mucosa, palate, and lips, as well as the dorsal surface of the tongue are affected. Treatment is not required. Intraoral pigments associated with Peutz-Jeghers syndrome require monitoring and evaluation by a gastroenterologist for the development of mucosal gastric malignancies.[10]

Recurrent apthous stomatitis: The apthas are the most common ulcer in the mouth.

From the clinical point of view, the sores can be divided into: minor aphtae with a diameter of not more than 1 cm ulcer

which heals within 1 week without scarring, major aphtae with a diameter greater than 1 cm; and herpetiform aphtae with only a few millimeters but in greater numbers than 10, in patients with immunosuppression and .[11] The first episode of recurrent apthous stomatitis occurs with high frequency (46%) in adolescents between 11-20 years patients, followed by24% in young adults between 21 to 30 years and only in 14% of cases it occurs before the age of 10 years . The prevalence of aphthae in children vary between 0.67% and 10.87% .[12] Regarding the link between a high standard of living and a higher frequency of disease, there are controversial data which confirm this hypothesis and studies that refute it . It is certain that aphtae lesion appear in an increased percentage in children presenting immune disorders, malabsorption, malnutrition, etc .[13]

Herpangina Caused by Coxsackie A virus is confined to children and presents with widespread small ulcers on the oral mucosa with fever and general upset. Clinically it resembles herpetic stomatitis, but site pathognomic affecting uvula, palate, and fauces with no gingivitis. May be preceded by sore throat and conjunctivitis. Can also be mistaken as 'teething'. Self-limiting in 10-14 days. Spread by faeco-oral route.

Glandular fever (infectious mononucleosis) is seen mostly in children and young adults and spread by infected saliva. It varies widely in severity and presents with sore throat, generalized lymphadenopathy, fever, headaches, general malaise, and often a maculo-papular rash. There may be hepatosplenomegaly.[14] Oral manifestations may mimic 1° herpetic gingivostomatitis, with widespread oral ulceration, and in addition petechial haemorrhages, especially at the junction of hard and soft palate (pathognomonic), and bruising may be present. The cause is usually Epstein-Barr virus (EBV) and, less commonly, cytomegalovirus (CMV). Toxoplasmosis can give a similar picture. Diagnosis initially monospot test, Paul-Bunnell test to exclude EBV, and acute and convalescent titres for CMV and toxoplasmosis.[15]

Be aware that early HIV infection can mimic this condition. Treatment: symptomatic as for 1° herpes, except toxoplasmosis, which may respond to sulfa drugs; seek expert advice. Ampicillin should not be given to patients with a sore throat who may have glandular fever as it inevitably produces an unwanted response, ranging from a rash to anaphylaxis. Opportunistic infection on the tongue mucosa by EBV is thought to be the pathological mechanism behind 'hairy leucoplakia', which is found in transplant and HIV positive patients.[16]

Hemangioma/vascular malformations*:* Nodular vascular anomalies are currently classified into either benign tumors or vascular malformations based on the clinical presentation and evolution of the lesion and its histopathologic features. The prevalence of hemangiomas is 1% of newborns in the United States and the head and neck area accounts for 60% of these lesions. Hemangiomas can be a clinical feature of multiple syndromes.[17] Alternatively, vascular malformations are considered congenital structural anomalies of blood vessels that are non-neoplastic. They do not proliferate or undergo involution; however, they may expand secondarily to stimuli, such as trauma, endocrine changes, or infection. Hemangiomas appear as either as a red or purple/red macule or nodule with a smooth or lobulated surface. The more superficial lesions appear red in color, whereas the deeper lesions appear purple. Approximately 90% of hemangiomas will resolve by age 9. Common locations in the head and neck area are the parotid and the orbit.[18] Vascular malformations are present at birth and do not involute but persist and are classified according to the vessel type (capillary, venous, lymphatic, or arteriovenous). Port wine stains are a common capillary malformation that occurs in 0.3% to 1.0% of newborns. Other malformations can present initially as flat macules that blanch under pressure and slowly become more nodular or cobblestoned in appearance. Treatment is important to differentiate between a hemangioma and a vascular malformation because their treatment modalities differ. Because hemangiomas can spontaneously involute during infancy, treatment is deferred until the lesion has involuted. For any remaining lesion, corticosteroid injections have been used to decrease the size and surgical modalities include the use of lasers and scalpel excision.[19]

CONCLUSIONS

The color variation depending on the location or depth, quantity of the pigmentation, the superficial appear brown the deeper looks blue or black that makes the diagnosis of the pigmented oral lesions challenging and crucial for the exclusion of potential risk of malignancies. Gender, race, regional habits, lifestyle and general diseases are factors which modify such prevalence studies so it is difficult to standardize the results and to reach a unanimous conclusion, requiring an evaluation of each category of population.

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