ORIGINAL RESEARCH PAPER

Oral Pathology

ORAL LESIONS IN NEONATES AND INFANTS

KEY WORDS: Oral lesions, Asymptomatic, Benign, Accurate diagnosis, Parental counselling

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ABSTRACT

The presentation of oral lesions and conditions in infants and neonates though most often being asymptomatic and benign, it can trigger anxiety and fear among parents. Accurate diagnosis and management and parental counselling depends on the detailed clinical evaluation and understanding of the various lesions. This article attempts to educate readers about a variety of oral lesions affecting the neonates and infants.

INTRODUCTION:

Oral pathologies are a significant part of the Paediatric dentistry, yet many are misdiagnosed by clinicians or go unnoticed owing to a shortfall in parental involvement. The lesions are often limited to the oral environment and they may give some insight into the underlying systemic disorders. A huge array of disorders exhibit with oral characteristics in newborns, the majority of which are asymptomatic and benign and frequently resolve without any assistance.[1]

CLASSIFICATION OF ORAL LESIONS IN NEONATES AND INFANTS:

I. CYSTS:
Gingival cyst of newborns
Epstein pearls
Bohn's nodule
Eruption cyst
Epidermoid and dermoid cyst

II. INFECTIONS:
Neonatal Candidiasis
Neonatal Osteomyelitis
Neonatal HSV infection

III. TRAUMA:
Mucocele
Ranula
Riga-Fede disease
Breastfeeding keratosis

IV. AUTOIMMUNE:
Neonatal pemphigus

V. TUMOURS:
(a) BENIGN NEOPLASMS:
Hemangioma
Lymphangioma
Langerhan's cell histiocytosis
Congenital epulis
Melanotic neuroectodermal tumour of infancy

(b) TERATOMAS:
Epignathus

(c) ORAL CHORISTOMAS

(d) SALIVARY GLAND NEOPLASMS:
Sialoblastoma
Hemagioendothelioma of parotid gland

(e) MALIGNANT NEOPLASMS:
Malignant melanoma
Rhabdomyosarcoma
Spindle cell sarcoma

VI. CONGENITAL:
Ankyloglossia
Melanocytic nevus

VII. DEVELOPMENTAL ANOMALIES:
Geographic tongue
Fissured tongue

VIII. HEREDITARY DISEASES:
White sponge nevus
Peutz-Jegher's syndrome
Neurofibromatosis Type I

IX. INJURY TO ORAL MUCOSA

I. CYSTS:

GINGIVAL CYST OF NEWBORN:

Gingival cyst of newborn develops from dental lamina remnants. These bilaterally distributed, asymptomatic lesions are nodular, creamy white, and numerous, measuring 1-3 mm. True epithelial cysts with keratin are visible through histopathology. These lesions appear early in life and are resolve on their own, thus no treatment is required.[1,4,6]

EPSTEIN PEARLS:

There is no gender predilection for this non-odontogenic, keratin-filled cysts, which have a prevalence rate of 35.2%. They appear to be entrapped epithelial remnants. They show up as nodules along the line of fusion in the mid-palatal raphe area and are clinically asymptomatic. There is no need for treatment.[4,5,6]

BOHN'S NODULES:

Bohn's nodules are epithelial remains of the minor salivary gland. These benign, soft, white keratin-filled papules ranging in size from 1-3 mm occurs in ridge away from the midline. They heal within three months after birth.[4,5,6]

ERUPTION CYST:

A soft benign cyst occurs around the erupting tooth when the

dental follicle breaks away from the tooth's crown, causing fluid to accumulate in this location.[1,6,7] The cyst disappears once the tooth erupts. If the cyst becomes vulnerable to infection or failed to rupture, surgery to open the cyst's roof is recommended.[6,7]

EPIDERMOID AND DERMOID CYST:

These are rare developmental disorders which are usually benign, asymptomatic and are slow growing. It occurs at a rate of 7% in the head and neck area. Around 30 neonatal instances have been documented. .It makes it difficult for newborns to feed and causes respiratory distress. Histologically, a dermoid cyst also exhibits the presence of adnexal glands while an epidermoid cyst is lined entirely by the epidermis. Enucleation surgery is part of the treatment. It rarely occurs again.[8]

II. INFECTIONS:

NEONATAL CANDIDIASIS:

It is the second leading cause of fatality in preterm babies. Candida can spread vertically or as a result of outside contaminations. Candida albicans (75%) is the prevalent Candida species. Potential causes are impaired immune system development, extensive catheterization, longer hospital stay, etc. Clinical features include white patches consisting of hyphae, epithelial cells, and necrotic tissues that can develop on the oral cavity.[9]

NEONATAL OSTEOMYELITIS OF MAXILLA:

It is a disease that typically affects newborns and has a high mortality rate. Common risk factors include iatrogenicity, extended hospitalization, and hospital acquired infections. Group B Streptococcus (Streptococcus agalactiae), Gram-negative organisms, and Staphylococcus aureus are the causative organisms. The maxilla is involved in about 4% of cases. Symptoms of chronic osteomyelitis rarely appear in newborns. This condition is managed by antimicrobial therapy with or without surgical treatment.[10,11]

NEONATAL HSV INFECTION:

HSV1 causes orolabial lesions. They are passed on during child birth. The symptoms appear between 6 and 21 days after delivery, and the incubation period is 4 to 21 days. The vesicles have a diameter of 1-3 mm, can be single or clustered, and eventually ulcerate. Acyclovir is the antiviral therapeutic drug. It occurs in 31 per 100,000 live births.[12]

III. TRAUMA:

MUCOCELE:

About 2.7% of children under the age of one are affected by Mucocele.[1,13,14] It has 2 distinct clinical types: Extravasation and retention mucocele. Younger age groups are frequently affected by extravasation type, which is usually caused by trauma. Clinically, it manifests as a fluctuating, bluish swelling.[13,14] The recommended management is surgical removal.

RANULA:

Ranulas are uncommon in infants and typically caused by mucin extravasation. The estimated incidence is 0.74%. Clinical features remarkably resemble those of a mucocele.[1,15] Depending on the variant, treatment options varies.[15]

RIGA-FEDE DISEASE:

This benign reactive disease is most commonly caused by trauma. RFD was divided into two categories by Domnguez-Cruz et al: "precocious RFD" and "late RFD".[1,16] Clinically, the lesion presents as an ulcerated, unifocal or multifocal area that is occasionally painful and frequently affects the midline of the ventral surface of the tongue. Dental extractions, corticosteroids, teething rings, oral disinfectants, incisal edge smoothing, and the use of protective dental appliances are all included in the treatment.[16]

BREASTFEEDING KERATOSIS:

Kiat-Amnuay and Bouquot documented breastfeeding keratosis in a 2-month-old infant that was unresponsive to antifungal medications. Parents' histories revealed an odd habit of their children actively sucking their lips in between feeding session. There were no mycotic structures found by cytopathology. With habit modification, the lesion subsided by the fourth week.[17]

IV. AUTOIMMUNE:

NEONATAL PEMPHIGUS:

It is a rare vesiculobullous condition that affects newborns. Since the lesion's initial description by Rucco et al in 1975, more than 21 cases have been reported. It is caused by maternal immunoglobulin G autoantibodies (Dsg3) crossing the placenta against the transmembrane glycoprotein desmoglein 3 (primarily class 4). It is distinguished by numerous skin lesions that appear shortly after birth. Immunofluorescence and histopathology are used to confirm the diagnosis. Within two to three weeks, the symptoms resolve on their own.[1,18]

VIII. HEREDITARY DISEASES:

WHITE SPONGE NEVUS:

White sponge nevus is a benign asymptomatic lesion. Clinically, lesions appear as single or bilateral white patches of dense velvety tissue that cannot be scraped off. They are more frequent on the buccal mucosa. Unless mastication is compromised, treatment is not necessary.[37]

PEUTZ-JEGHERS SYNDROME:

Dark spots on the skin, mucosa and gastrointestinal polyposis are two features of the autosomal dominant Peutz-Jeghers syndrome. Abdominal pain, persistent bleeding, anaemia, and intestinal obstruction are all symptoms of hamartomatous polyps in the digestive tract. Few polyps have the potential to become cancerous. The majority of intraoral lesions disappear within first ten years of life.[38]

NEUROFIBROMATOSIS TYPE I:

The inherited disorder neurofibromatosis type 1, also known as Von Recklinghausen's disease, is designated by the development of numerous benign tumours called neurofibromas on the skin and nerves. It typically affects the skin when it is localised on the head and neck, but neurofibromas in the mouth are not unusual. When the previously mentioned changes are coupled with multiple café-au-lait spots on the skin, neurofibromatosis type 1 should be suspected.[39]

IX. INJURY TO THE ORAL MUCOSA:

The oral mucosa can be disrupted by a number of different injuries. Heat injury to the anterior margin of the palate is common as a result of consuming hot meals. Self-induced trauma, whether conscious or unconscious, results in mechanical damage. Morsicatio is the most typical instance of self-inflicted physical trauma. Clinically, they appear as white to greyish patches with irregularly shaped borders and smooth or rough surface.[40] Except for the cessation of the habit, treatment is not necessary.

COVID 19 INFECTION:

Considering the novel nature of COVID-19, it is uncertain how often oral lesions occur, particularly in infants. The most frequent oral lesions are desquamating gingivitis, ulcerations, and blisters. Ulcerations on the dorsum of the tongue are the most prevalent. Geographic tongue and patches that failed to react to primary therapy was seen on the tongue. Several fungal and viral infections occurred during the COVID-19 infection as a result of stress and lowered immunity.[41,42]

IMPACT OF PREMATURE BIRTH ON ORAL CAVITY:

Premature childbirth and the consequences that can unfold as a result of it are strongly associated with neonatal mortality.

Crown enlargement due to endotracheal intubation, malformation of the teeth, enamel hypoplasia, growth in palatal height, postponement of primary dentition eruption, and advancement of the permanent teeth are the major impacts of preterm delivery on oral tissues.[43]

CONCLUSION:

Newborns with soft - tissue tumors demand a precise evaluation, management, in addition to family involvement and psychosocial support. A comprehensive assessment and substantial documentation can facilitate in the determination of both prevalent and less common diseases influencing the dentofacial environment in newborn babies.

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