

## ORAL LESIONS OF HIGHER CLINICAL FREQUENCY IN CHILDREN — LITERATURE REVIEW

### Lesões bucais de maior frequência clínica em crianças – revisão de literatura

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#### ABSTRACT

**Objective:** The objective of this article is to present to the dental professionals, through a literature review, the main oral lesions that are part of the odontopediatric stomatology, in order to improve the knowledge and attention to the health of the pediatric patients. **Methods:** The searches were carried out in the following bibliographic databases: PubMed, Web of Science, LILACS and Bireme. **Data synthesis:** this article deals with the description of the most frequent oral lesions in Pediatric Dentistry, such as epstein's pearls and gingival cyst of the newborn, which are the most common changes in newborns; congenital abnormalities such as ankyloglossia; lesions with fluid retention such as eruption cyst/

hematoma; fungal and viral diseases such as candidosis, acute herpetic gingivostomatitis and secondary herpes simplex, respectively. There are also those related to the main infectious diseases of childhood, with clinical manifestations in the oral cavity such as measles, impetigo, varicella, mumps and hands, feet and mouth disease. **Conclusion:** It is very important, for General Practitioner and Pediatric Dentistry to recognize oral lesions in children, to make a correct and early diagnosis of them, in order to improve the knowledge, attention to the health and quality of life of the pediatric patients.

**Keywords:** Oral medicine. Pediatric dentistry. Child. Mouth abnormalities. Communicable diseases.

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**Data de envio:** 12/02/2019 | **Data de aceite:** 02/05/2019

## RESUMO

**Objetivo:** Apresentar aos profissionais da Odontologia, por meio de uma revisão de literatura, as principais lesões bucais que fazem parte da Odontopediatria, a fim de melhorar o conhecimento e a atenção à saúde dos pacientes pediátricos. **Métodos:** As buscas foram realizadas nas seguintes bases de dados bibliográficas: PubMed, Web of Science, LILACS e Bireme. **Síntese dos dados:** Este artigo trata da descrição das lesões bucais mais frequentes na Odontopediatria, como pérolas de Epstein e cisto gengival do recém-nascido, que são as alterações mais comuns em recém-natos; alterações congênitas como anquiloglossia; lesões com retenção de líquido como cisto/hematoma de erupção; doenças fúngicas e virais como candidose, gengivostomatite herpética aguda e herpes simples secundário, respectivamente. Há, também, aquelas relacionadas às principais doenças infecciosas da infância, com manifestações clínicas na cavidade bucal como sarampo, impetigo, varicela, caxumba e doença das mãos, pés e boca. **Conclusão:** É muito importante, para o clínico geral e para o odontopediatra, reconhecer as diversas lesões que podem acometer a cavidade bucal das crianças, propiciando um diagnóstico correto e precoce das mesmas, a fim de melhorar o conhecimento, atenção à saúde e qualidade de vida dos pacientes pediátricos.

**Palavras-chave:** Medicina oral. Odontopediatria. Anormalidades na boca. Doenças transmissíveis.

## INTRODUCTION

Several are the significant subjects of relevance within Pediatric Dentistry, the Stomatology is one of them and is very important and contributing to the prevention, diagnosis and treatment of oral lesions that may affect pediatric patients. It is very important that both the General Practitioner and the Pediatric Dentistry examine the oral cavity of the baby and/or the child to be aware of the structural changes that may occur in this space, since the infant patients have strictly peculiar physical and morphological characteristics. Coupled with this, dental professionals, when it comes to care for children, should perform a good anamnesis and a thorough clinical examination, so that the diagnosis can be reached as precisely as possible.

Thus, the aim of this study was revise the scientific literature about oral lesions of higher clinical frequency in children in order to improve the knowledge and attention to the health of the pediatric patients.

## METHODOLOGY

The study was characterized as a literature review. The guiding question was: "What are the oral lesions with the highest clinical frequency in childhood?" The selected databases were: National Library of Medicine (NLM-interface PubMed), WebScience and the Virtual Health Library (BVS/BIREME-LILACS, Medline and SciELO). Literature search in Portuguese and English. As a search strategy, the following descriptors were used according to the Medical Subject Headings (MeSH, <http://www.nlm.nih.gov/mesh/meshhome.html>), composing the following search key: (((((((((Bohn's nodules) or Epstein's Pearls, gingival cyst of the newborn, Riga-Fede disease, geographic tongue and/or fissured tongue), ankyloglossia or tongue-tie), eruption cyst and/or hematoma cyst, ulcerative lesions and/or recurrent aphthous stomatitis or traumatic ulcer, infectious diseases and/or scarlet fever, congenital syphilis, impetigo, fungal diseases and/or Candidose), viral diseases and/or herpes simplex) or acute herpetic gingivostomatitis) or secondary or recurrent herpes simplex), measles) and chickenpox), mumps and disease of hands, feet and mouth).

## LITERATURE REVIEW

### Changes in the newborn

#### *Bohn's nodules:*

First described by Heinrich Bohn in 1866<sup>1</sup> they are transient lesions affecting the oral mucosa during birth or up to three months thereafter. These are multiple nodules of keratin, from two to six, painless, resulting from epithelial remnants originating the development of minor salivary glands in the palate. They are found along buccal and lingual parts of the alveolar ridges away from the midline and, on the palate (65%), near the junction of the hard and soft palates, in of the cases and along the surface of the covering mucosa of the alveolar crests in 25 to 65% of the newborns. They are more common in the maxilla than in the mandible<sup>2,7</sup> (Figure 1). There is no treatment for these lesions. They disappear in a few weeks or months<sup>8</sup>.



Figure 1: Changes in the newborn: Bohn's nodules.

#### *Epstein's Pearls:*

Described for the first time by Alois Epstein in 1880, they are inclusion cysts that appear along the median line of the palate or the medial palatine raphe. They are painless, whitish or yellowish papules, 2 to 3 mm in diameter, firm to the palpation, circumscribed, single or multiple, resembling “rice grains”<sup>2</sup> (Figure 2). They occur in 80% of newborns<sup>9</sup> and there is no treatment for these lesions. They disappear in a few weeks or months<sup>8</sup>.



Figure 2: Changes in the newborn: Epstein's Pearls.

### *Gingival cyst of the newborn:*

Keratin-filled cysts, originated from remnants of the dental blade. It is found in the buccal and/or lingual, in the dental ridges of the maxilla (preferably) and mandible, also in the form of painless, whitish and multiple papules<sup>10</sup>. They present a prevalence of 70 to 89%<sup>11</sup> in newborns, disappearing spontaneously in a few weeks or months. There is no treatment for them<sup>8</sup>.

### *Riga-Fede disease:*

So-called when the ulcer Sublingual affects children under 2 years of age. The lesion was first described by Antonio Riga in 1881 and Francesco Fede performed subsequent histological studies in the year 1890<sup>12</sup>. The lesion was named after the two scientists who identified the condition. Above 2 years of age, this same lesion is called traumatic oral granuloma<sup>13</sup>.

It is characterized as an ulcer with raised and hardened borders, necrotic background, white-gray coloration, erythematous halo, located on the ventral surface of the tongue of some babies<sup>14</sup> (Figure 3).



Figure 3: Changes in the newborn: Riga-Fede disease.

Its occurrence is associated with the presence of sharp incisal edges of natal or neonatal teeth (lower incisors), on the baby's tongue during breastfeeding or suction<sup>15</sup>. In most cases, the injury causes the child to experience difficulties in sucking and feeding, placing the child at risk of malnutrition and/or a nutritional deficiency. The treatment can be done by wearing the incisal edges of lower incisors and, if the birth or neonatal teeth are supernumerary or have mobility, the exodontia is indicated<sup>16</sup>.

## Non-pathological changes

### *Geographic tongue:*

Also called Glossite Benign Migraine, it was first described by Reiter in 1831. It is a lesion that affects approximately 2% of the population<sup>17</sup>, and is the most frequent lingual alteration in infantile patients, with incidence of 2 to 20% among school-age children<sup>18,19</sup>. More prevalent in females than in males, with their frequency reduced with age<sup>19</sup>. Etiology and pathogenesis is unknown<sup>20,22</sup>, but may be related to syndromes such as Reiters syndrome and Down syndrome<sup>23</sup>, psoriasis<sup>24,25</sup>, diabetes mellitus<sup>26</sup>, anxiety, stress, allergies<sup>27</sup>, family history, HLA-DR5, HLA-DRW6 and HLA-Cw6 antigens<sup>28</sup>, as well as genetic factors, particularly among HLA-DR5, HLA-DRW6 and HLA-Cw6 antigens.

The atrophy of the filiform papillae leads to an erythematous, erosive area of varying dimensions, with well-demarcated borders, white and yellowish coloration, with irregular spiral pattern. Located in the anterior two-thirds of the tongue, it resembles a map; hence the denomination “geographic”. “The erosive area, due to the desquamation of the filiform papillae, remains for a short time in one place, as soon as the tissue is repaired and the unshapillated areas appear in another region of the tongue, giving the idea of migration<sup>29,30</sup> (Figure 4).



Figure 4: Non-pathological changes: Geographic tongue.

This may remain for weeks to months, regressing spontaneously, to relapse later. Geographic tongue may be treated as a single or multiple lesion, asymptomatic or presenting symptoms such as pain, burning sensation and discomfort, sensitivity to hot, spicy and bitter foods; change in taste; ear pain or submandibular lymphadenopathy. In general, no treatment is indicated. In symptomatic cases, patients should be food-oriented and the use of topical anti-inflammatory may be effective<sup>31</sup>.

#### *Fissured tongue:*

Considered as one of the most common malformations of the tongue, it has a prevalence of 5% in the world population, and may reach 30% among the elderly. It primarily affects mainly the male gender. It is pointed out by some authors as being a developmental anomaly because it is often accompanied by developmental defects such as cleft lip or syndactyly. Although of unknown etiology, it presents a genetic basis, in its origin; it is common in successive generations and in brothers of the same family<sup>32</sup>. There is a strong association between fissured tongue and benign migratory glossitis, as well as Down syndrome and Melkersson-Rosenthal syndrome, in which patients present orofacial granulomatosis, especially of the lips, in addition to episodes of facial paralysis<sup>33</sup>.

At the clinical examination, irregular grooves or fissures of varying depth (up to 6 mm), coated with intact but atrophic epithelium, present on the back of the tongue, on its posterior portion and on the sides, sometimes giving the impression that the tongue is divided into separate parts. Usually the fissured tongue is asymptomatic, but when there is symptomatology, it is restricted to mild burning, due to the presence of microorganisms and food residues within the grooves. Its diagnosis occurs randomly during the dental visit.

This lesion does not require treatment, only hygiene guidelines to avoid accumulation of food causing local irritation<sup>34,35</sup>.

## Congenital changes

### *Ankyloglossia:*

Congenital anomaly characterized by the presence of a short or inserted lingual frenulum very close to the tip of the tongue, with a fibrous or even muscular aspect, causing a decrease in the mobility of the tongue. Also called “tongue-tie” The severity of ankyloglossia is variable, ranging from a short but abnormal inserted frenulum, which restricts the small movement of the tongue (partial ankyloglossia) to the condition of the tongue fixed completely on the floor of the mouth (complete ankylosis)<sup>36</sup>.

Ankyloglossia is most commonly found in males<sup>37</sup>. It presents a higher prevalence in neonates (1.72% to 10.7%) than in children and adults (0.1-2.08%)<sup>38</sup>. It leads to the inability to extend the tip of the tongue beyond the border of the vermilion of the lips or to the line that joins the labial commissures (Figure 5).



Figure 5: Congenital changes: Ankyloglossia.

It is associated with speech deficiency, presence of midline diastema, oral motor dysfunction and mandibular lingual gingival recession. In children, it may lead to a series of disorders, such as difficulties in breastfeeding, phonation and adequate oral hygiene, besides being the cause of possible psychological problems. In most cases of ankyloglossia no treatment is indicated. If necessary, surgical treatment with frenectomy is indicated<sup>39</sup>.

## Lesions with retention of liquid

### *Eruption cyst/Hematoma cyst:*

Benign odontogenic cyst that accompanies the eruption of a deciduous or permanent tooth. It is present in most cases in children less than 10 years of age<sup>40</sup>, in the incisor and upper canine regions, and in the region of lower molars, and may occur in any area where a



tooth is in phase of eruption. It is formed from the expansion of the dental follicle, resulting from the accumulation of liquid around the crown of the erupting tooth, after rupture of the bony crest<sup>41</sup> (Figure 6).



Figure 6: Lesions with retention of liquid: Eruption cyst.

Clinically, it is characterized by painless dome-shaped swelling, limited to the region of the alveolar ridge, where the eruption of the tooth will occur and may be soft or buoyant, sometimes consistent with palpation, single or multiple, unilateral or bilateral, with a dimension of up to 1.5 centimeters<sup>40</sup>. It may be translucent or bluish-purplish, due to hemorrhage in the follicular space, between the crown of the tooth and the reduced epithelium of the enamel, being called, in this situation, an eruption hematoma<sup>42</sup> (Figure 7).



Figure 7: Lesions with retention of liquid: Hematoma cyst.

Most of the time the eruption cyst/hematoma disappears spontaneously, due to the eruption of the tooth in the oral cavity; however, if there is any pronounced symptom or delay in the dental eruption, there is a need to perform ulotomia or ulectomy procedures<sup>43</sup>.

## Ulcerative lesions

### *Recurrent aphthous stomatitis:*

Considered as one of the most common lesions of the oral cavity, it is present in approximately 20% of the world population<sup>44</sup>. Among pediatric patients, their prevalence varies from 0.9 to 10.8%, manifesting in about 14% of cases, before 10 years of age; this fact makes it one of the most frequent oral affections in children<sup>18,45</sup>.

Etiology and pathogenesis are not completely defined yet, several factors are associated with its origin as local trauma; allergy to certain foods; deficiencies of iron, folic acid and vitamin B12 in the body; genetic factors; bacterial infections, immune disorders such as cyclic neutropenia and AIDS; psychological stress, hormonal influences, among others<sup>45</sup>.

The aphthous lesions are recurrent, well defined, round or oval, single or multiple, presenting the central region covered by a yellowish-white pseudomembrane, surrounded by an erythematous halo. They are extremely painful, and are located in non-keratinized regions of the oral cavity, such as buccal mucosa, border of the tongue, among others (Figure 8). They last from 7 to 10 days<sup>46</sup>.



Figure 8: Ulcerative lesions: Recurrent aphthous stomatitis.

Recurrent aphthous stomatitis can be classified into smaller, larger and herpeticiform aphthae. Lesions lead to difficulties in eating, speaking and swallowing, and have a negative impact on the child's quality of life. The treatment can be performed with corticoid therapy, chlorhexidine, tetracycline, levamisole, colchicine and dapsone<sup>47,48</sup>.

### *Traumatic ulcer:*

Characterized as being a solution of continuity of the buccal epithelium, due to a physical aggression against the soft tissues of the mouth. Its etiology, in children, may be associated with involuntary bites on the lip, after trunk anesthesia in the lower region; action of fractured teeth on the buccal mucosa; fractured restorations; use of orthodontic appliance; objects suddenly introduced into the mouth; accidents; falls; fights; thermal burns associated with the ingestion of hot foods or beverages; chemical burns caused by drugs maintained for a long time in contact with the buccal mucosa, before being swallowed



and by medications used by the dentist such as cavity varnishes, acid conditioners, among others<sup>45,49</sup>. Clinically, the traumatic ulcer can range from a small lesion to a large dilaceration, a fact that will depend on the type and intensity of the trauma, that is, moderate and frequent aggressions lead to the development of chronic ulcers, with firmer, whitish edges, due to hyperkeratosis. Acute ulcers, on the other hand, are flatter and ovoid, with a whitish necrotic center, circumscribed by an erythematous halo (Figure 9).



Figure 9: Ulcerative lesions: Traumatic ulcer.

These ulcers usually heal within seven to ten days spontaneously, and in the case of chronic ulcerations, topical corticosteroids are generally used, as well as identifying and removing the causal agent<sup>45</sup>.

## Infectious diseases

### *Scarlet fever:*

Contagious disease caused by a erythrogenic exotoxin produced by *Streptococcus pyogenes* (group A beta-hemolytic), which usually affects children between 2-10 years of age<sup>50</sup>, after an incubation period of 12 hours to 7 days, by direct contact with the infected person, especially in winter and spring<sup>51,53</sup>. Scarlet fever hardly affects children under 2 years of age, as they are protected by maternal antibodies through natural breastfeeding<sup>54</sup>.

The diagnosis is made after the second or third day of the disease, from the appearance of a diffuse, scarlet and bright skin rash located in the skin folds, which is very characteristic of this type of disease. In the oral cavity, the disease is manifested by inflammatory lesions on the palate, tonsils and tongue; the fungiform papillae become edemaciate and hyperemic, projected as reddish protrusions, covered by a whitish layer, the so-called “strawberry tongue”. Subsequently, this whitish covering disappears, giving rise to an extremely red, smooth and shiny tongue, in which the fungiform, edemaciate and hyperemic papillae stand out, characterizing now the “raspberry tongue”<sup>55</sup>. The treatment is based on administration of penicillin.

### *Congenital syphilis:*

Disease resulting from the hematogenous spread of *Treponema pallidum* from the untreated or inadequately treated mother to the fetus through the placenta<sup>56</sup>. However, if adequate treatment is instituted to women, up to the 16th week of gestation, the disease can be prevented in the newborn, in up to 96% of cases. After this gestational period, *Treponema pallidum* crosses the placenta, causing the fetus to develop congenital syphilis. The main future changes will be the facial and dental order: deformity of the nasal bones (“saddle nose”), oral lesions as mucosal macules, rhagades (deep cracks in labial), glossitis atrophic, yellowish discoloration of lips, cleft high vault and narrow<sup>57</sup> and so-called Hutchinson’s teeth, “permanent molars in blackberry” and “incisive barrel”, resulting in hypoplasia present in these teeth<sup>58</sup>. These dental changes occur during the development period of the enamel organ by an inflammatory reaction induced by *Treponema pallidum*, through the contamination of dental germs, leading to a decrease in the production of ameloblasts, which are the cells responsible for the formation of dental enamel<sup>59</sup>.

Congenital syphilis presents as pathognomonic sign, the so-called Hutchinson’s triad, represented by interstitial keratitis, deafness due to damage to the VIII cranial nerve and hypoplasia of molars and permanent incisors (Hutchinson’s teeth)<sup>60</sup>. Rarely do these three signs appear together in the same child.

### *Impetigo:*

Bacterial infection, usually by *Staphylococcus aureus* is the fourth most common dermatosis among children<sup>61</sup>. It is estimated that approximately 162 million children from underdeveloped and developing countries have already been affected by this disease<sup>62</sup>.

Impetigo first attacks the epidermis, generating inflammatory vesicles or pustules, which rupture, forming crust lesions<sup>63</sup>. It also affects the perioral region, encompassing labial commissure and vermillion of the lips. The lesions are characterized by a yellowish-brown adherent crust and usually heal without complication (Figure 10).



Figure 10: Infectious diseases: Impetigo.

Use antiseptic in the infected area and topical antibiotic twice daily. If lesions do not heal, systemic antibiotic must be used<sup>64</sup>.

## Fungal diseases

### *Candidose:*

One of the most common fungal infections of the oral cavity, caused by the fungus *Candida albicans*, occurring in 1 to 37% of the children, especially infants and children under 2 years old. *Candida albicans* can be detected about 75% of the healthy population without signs of infection<sup>65</sup>. There are several factors that increase susceptibility to candidiasis, such as nutritional deficiencies, antibiotic therapy, immaturity of the immune system, hyposalivation, poor oral hygiene, among others<sup>66</sup>.

Candidose can be presented in various ways as pseudomembranous, atrophic erythematous, hyperplastic and angular cheilitis<sup>67</sup>.

Pseudomembranous candidiasis is most common in children. Clinically, it is manifested by the presence of white-yellow plaques adhered to the mucosa, which mainly reach the tongue, palate and jugal mucosa, and may also be present in other regions of the oral cavity. These plaques are easily removed, and when this occurs, they leave an erythematous, sometimes bleeding, surface with moderate painful symptomatology<sup>68</sup> (Figure 11).



Figure 11: Fungal diseases: Candidose.

The diagnosis of candidosis is established, mainly, by the interaction of the clinical characteristics with the cytopathology exams.

The treatment consists in the use of topical or systemic antifungal, depending on the extension and the systemic condition of the patient. The topical antifungal of choice is nystatin and the systemic ones may be fluconazole or, more recently, itraconazole<sup>68</sup>.

## Viral diseases

### *Herpes simplex:*

Considered to be the most prevalent viral disease reaching the oral cavity, since it is present in about 60 to 95% of the adult population<sup>69</sup>.

The herpes simplex virus presents as two serotypes (I and II). Type I (HSV-I) is the etiological agent of oral infections and type II (HSV-II), responsible for genital infections<sup>70</sup>.

The infection caused by HSV-1 increases gradually from childhood to adulthood, affecting about 80% of the population. The transmission of the virus occurs mainly through direct contact with active lesions or saliva. The incubation period occurs, on average, for 5 days to two weeks. The first contact with the HSV-1 virus is generally asymptomatic, and only about 10% of the infected individuals present symptoms, thus characterizing symptomatic primary infection, which is accompanied by severe clinical manifestations, characterizing acute herpetic gingivostomatitis. After the primary manifestation, HSV-1 goes to the trigeminal ganglion, remaining there, in latent state, until it is reactivated by several factors such as trauma, exposure to sun, cold, fever, anxiety, stress, among others. Thereafter, secondary or recurrent infection is established in about 20 to 40% of previously infected individuals<sup>71,72</sup>.

### *Acute Herpetic Gingivostomatitis:*

Common childhood disease, caused in 90% of cases, the herpes simplex virus type 1 usually occurs in children under 6 years of age; exceptionally appears before 6 months of age, due to the presence of circulating antibodies from the mother<sup>73</sup>.

The initial manifestation of the disease in children is due to fever, headache, irritability, pain upon swallowing and regional lymphadenopathy. From 24 to 36 hours, the mouth becomes extremely sore, the gingiva is swollen and there is an increase in salivary flow. Vesicles multiply in the regions of the gingiva, tongue, lips, oral mucosa, oropharynx and perioral region, rupturing and forming erosions, covered by pseudomembrane of erythematous margin. In a period of time of 7 to 14 days, without complications, the lesions regress without leaving sequels, disappearing along with the systemic symptoms and lymphadenopathy. Drug therapy involves the administration of analgesics, anti-inflammatories and, in cases of secondary infection, antibiotics and antifungals. There is special recommendation for diet, which should be liquid and protein. Local treatments include the use of antiseptics and topical anesthetics<sup>74</sup>.

Once the lesions disappear and the normal clinical picture returns, the virus becomes attenuated and remains latent within the cells of the trigeminal ganglion, and may be reactivated years later when there is a state of local or general immunosuppression, giving rise to another clinical form of the disease known as recurrent herpes simplex.

### *Secondary or recurrent herpes simplex:*

Mucocutaneous infection caused by the reactivation of HSV-1 latent virus, affecting approximately 20% to 40% of individuals who have already presented with acute herpes gingivostomatitis. Reactivation of the virus can occur spontaneously or be influenced by fever, sun exposure, cold, low immunity, emotional stress<sup>75</sup>.

Clinically, it is characterized by the appearance of small vesicles located around the mucocutaneous junction of the lips, closer to the skin than to the mucosa. In two days these vesicles rupture, forming a crust, and they decay in 7 to 10 days, without scarring<sup>75,76</sup>. These lesions can also be found in the intraoral mucosa, such as the gingiva and hard palate, presenting as small ulcerations that adhere to the surface and are covered by a white-yellow pseudomembrane. They also present regression in the period of 7 to 10 days. This clinical manifestation is usually preceded by prodromal symptoms such as pruritus, burning and pain at the lesion site. The treatment using topical antivirals, as 5% acyclovir and 1% penciclovir, is still questioned, but some authors report an improvement in the clinical picture if they were administered prior to vesicles appearance, decreasing the duration of lesions and pruritus. The use of systemic antivirals also decreases the duration of symptoms and is indicated in more severe cases, especially in immunocompromised patients<sup>75</sup>.

### *Measles:*

Contagious viral disease affecting mainly children, having as its etiologic agent a paramyxovirus of the genus Morbillivirus<sup>77</sup>, which is spread through saliva.

After an incubation period of 8 to 12 days, prodromal symptoms such as malaise, fever, conjunctivitis, coryza, photophobia and cough<sup>78</sup>. Up to the fourth day of fever, the oral manifestations, called pathognomonic of measles, called “Koplik’s spots” appear. They usually appear 1 day before the rash, persisting for 2 to 3 days. They are characterized by small, bluish-white macules, necrotic centers, surrounded by an erythematous halo, located on the cheek and occasionally extending to the soft palate<sup>79</sup>.

The rash that follows affects the head first, having its onset on the face and neck, and then to the trunk and lower limbs<sup>78</sup>. Complications of the disease may result in encephalitis, otitis media, and bronchopneumonia. The treatment is based on supportive care, including hydration, oral hygiene and rest. The consumption of acidic foods is contraindicated, because they cause increased parotid pain by stimulating salivary secretion<sup>80</sup>.

### *Chickenpox:*

Disease classified as the primary infection of the Varicella-Zoster virus (VZV)<sup>81</sup>. After this primary infection occurs, the virus is latent in the body and can be reactivated at any time, triggering herpes zoster<sup>78</sup>.

It affects children 5 to 9 years of age, being more common in winter and spring. It has an incubation period of 15 days, and the virus is transmitted through droplets of saliva or by direct contact. Clinically, it is manifested by the presence of pruritic cutaneous rash (evolution of erythema to gallbladder, pustule and hardened crust) on the face and trunk, preceded by headache, fever, nasopharyngitis and anorexia. In the mouth, the lesions appear as vesicles that develop into very painful ulcers, mainly on the cheek, palate and pharynx. The treatment is based on the reduction of acute symptoms using anti-pruritic lotions and anti-pyretics. The use of systemic antivirals, such as acyclovir, is effective in reducing the severity and duration of the lesions, if administered during the first 24 hours after its emergence<sup>82</sup>.

### *Mumps:*

Viral disease caused by paramyxovirus, through the saliva and nasal secretions of infected persons<sup>83</sup>. It affects children between 2 and 5 years of age, and may occur at any time in life.

It is characterized by the appearance of fever, myalgia, arthralgia, general malaise and anorexia. There is an increase in volume of the parotid glands, usually bilateral, after a virus incubation period of 2 to 3 weeks. This fact generates pain, salivation, difficulty speaking, chewing and trismus. In the oral cavity, it manifests clinically as edema and erythema in the papilla of the Stenson’s duct<sup>84</sup>. Symptoms persist for about a week and the treatment is only symptomatic<sup>85</sup>.

### *Disease of hands, feet and mouth:*

Commonly caused by the Coxsackie A 16 virus, it most commonly affects children under 5 years of age after an incubation period of 2 to 6 days. The transmission from one person to another occurs by air or by orofecal contamination. Clinically, it is manifested by the presence of skin lesions, involving mainly the hands and arms, feet and legs. The lesions appear as red macules, evolving into vesicles, which heal without crusting. In the mouth, appear in any area, particularly on the hard palate, tongue and oral mucosa, as erythematous macules, then as vesicles that rupture, resulting in ulcers of variable sizes and that heal in

1 week. The oral manifestations precede the cutaneous ones. There is also presence of mild fever, dysphagia, anorexia, diarrhea, nausea, vomiting and sore throat. The treatment is done with antipyretics and analgesics<sup>86</sup>.

## DISCUSSION

Through this literature review, it was found that the most common early childhood lesions are epstein's pearls and gingival cyst of the newborn; ankyloglossia; cyst/eruption hematoma. Among childhood diseases, the most important are fungal and viral infections such as candidose, acute herpes gingivostomatitis and secondary herpes simplex, respectively. There are also those related to the main infectious diseases of childhood, with clinical manifestations in the oral cavity such as measles, impetigo, varicella, mumps and "hands, feet and mouth" disease.

Among changes in the newborn, Bohn's nodules are transient lesions affecting the oral mucosa during birth or up to three months thereafter. They are more common in the maxilla than in the mandible<sup>2,7</sup>, and there is no treatment for these lesions. They disappear in a few weeks or months<sup>8</sup>.

Epstein's Pearls are inclusion cysts that appear along the median line of the palate or the medial palatine. They occur in 80% of newborns<sup>9</sup> and there is no treatment for them. As Bohn's nodules, these lesions disappear in a few weeks or months<sup>8</sup>.

Keratin-filled cyst originated from remnants of the dental blade are the gingival cyst of the newborn<sup>10</sup>. They present a prevalence of 70 to 89% in newborns, disappearing spontaneously in a few weeks or months<sup>11</sup>. There is no treatment for them<sup>8</sup>.

According to non-pathological changes, geographic and fissured tongue are considered the most common malformations of the infants' tongue<sup>18,19,32</sup>.

Ankyloglossia is a congenital anomaly characterized by the presence of a short or inserted lingual frenulum very close to the tip of the tongue, causing a decrease in its mobility<sup>36</sup>. It presents a higher prevalence in neonates (1.72% to 10.7%) than in children and adults<sup>38</sup> and, in most cases, no treatment is indicated. If necessary, frenectomy can be done<sup>39</sup>.

Eruption and hematoma cyst are lesions with retention of liquid that, in most of the time, disappear spontaneously, due to the eruption of the tooth in the oral cavity; however, if there is any pronounced symptom or delay in the dental eruption, there is a need to perform ulotomia or ulectomy procedures<sup>43</sup>.

Ulcerative lesions such as recurrent aphthous stomatitis, considered as one of the most common lesions of the oral cavity, is present in approximately 20% of the world population<sup>44</sup>. Traumatic ulcer whose etiology, in children, may be associated with involuntary bites on the lip after trunk anesthesia in the lower region, for example<sup>45,49</sup>, usually heal within seven to ten days spontaneously. In cases of chronic ulcerations, the treatment with topical corticosteroids are generally used, as well as identifying and removing the causal agent<sup>45</sup>.

Infectious diseases such as scarlet fever, congenital syphilis and impetigo also present alterations in children perioral and oral region<sup>55,60,64</sup>, as inflammatory lesions on the palate, tonsils and tongue<sup>55</sup>; deformity of the nasal bones ("saddle nose"), oral lesions as mucosal macules, rhagades (deep cracks in labial), glossitis atrophic, yellowish discoloration of lips, cleft high vault and narrow<sup>57</sup> and so-called Hutchinson's teeth, "permanent molars in blackberry" and "incisive barrel", resulting in hypoplasia present in these teeth<sup>58</sup>.

Candidose is one of the most common fungal infections of the oral cavity, occurring in 1 to 37% of the children, especially infants and children under 2 years old<sup>65</sup>. Pseudomembranous candidiasis form is most common in children<sup>68</sup>.



Viral diseases such as herpes simplex, acute herpetic gingivostomatitis, secondary or recurrent herpes simplex, chickenpox, mumps and disease of hands, feet and mouth are common childhood diseases, with characteristic signs and symptoms in the oral cavity<sup>71,72,75,79,82,84,86</sup>.

## CONCLUSION

It is very important, for General Practitioner and Pediatric Dentistry the perception and recognition of oral lesions in children, to make a correct and early diagnosis of them, in order to improve the knowledge and attention to the health of the pediatric patients.

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