Dental prevention and dental care management of 4 years old child with lymphangioma of the tongue: A case report

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Дентална профилактика и лечение на 4-годишно дете с лимфангиом на езика: клиничен случай

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Abstract:

Lymphangioma is a benign rare congenital malformation of the lymphatic system, which commonly occurs in the dorsum of the tongue, lips, buccal mucosa, soft palate, followed by the floor of the mouth. Histologic classifications do not align with therapeutic responses or clinical behavior. A classification system based on morphological characteristics has become more widely used. This system categorizes lymphangiomas into three types based on their response to sclerotherapy: macrocystic, microcystic, and mixed. Lymphangioma simplex of the tongue is an uncommon occurrence, with only isolated case reports mentioned in the literature.

A 4 years old boy was admitted to the Department of Pediatric dentistry – Sofia. The patient had been diagnostic with mixed lymphangioma of the tongue (microcystic, macrocystic). Reduction in the tongue movements without any loss of sensory or motor function. There were previous accidental traumas which commonly enlarge the lymphatic malformation and worsen the swelling. Early and accurate differential diagnosis of the condition is crucial for achieving optimal results in preventive and treatment outcomes.

Key words: *lymphangioma, preventive measures, oral health care*

Резюме

Лимфангиомът е доброкачествена рядка вродена малформация на лимфната система, която обикновено се появява в гърба на езика, устните, букалната лигавица, мекото небце, последвано от дъното на устата. Хистологичното му класифициране не винаги съответства на терапевтичния отговор или клиничното поведение. Класификационната система, основана на морфологични характеристики, се използва все по-широко. Тази система категоризира лимфангиомите в три типа въз основа на реакцията им към склеротерапията: макрокистозна, микрокистозна и смесена. Лимфангиома симплекс на езика е рядко срещана, като в литературата се споменават само изолирани случаи. Момче на 4 години е прието в кабинет по детска дентална медицина при ФДМ, МУ – София. Пациентът е диагностициран със смесен лимфангиом на езика (микрокистозен, макрокистозен). Наблюдават се намаляване на движенията на езика без загуба на сетивна или двигателна функция. Налице са данни за предишни случайни травми, които обикновено увеличават лимфната малформация и влошават отока. Ранната и точна диференциална диагноза на състоянието е от решаващо значение за постигане на оптимални резултати при профилактични и лечебни дентални процедури.

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Introduction

Lymphangiomas are rare congenital malformations, often occurring in the head and neck region. They can be distinguished histologically from other vascular disorders like cavernous or capillary hemangiomas by their cystic spaces lined with lymphatic endothelium. The condition usually manifests at birth (60-70%) or by the age of two and is uncommon in adults. Treatment primarily involves surgical removal, though incomplete excision carries a high risk of recurrence. This article highlights the main clinical symptoms, dental complications, and treatment approaches for tongue lymphangiomas, presenting four cases, including two with severe macroglossia causing dental and functional issues [1]. Lymphangiomas are rare benign neoplasms that are believed to develop as a result of abnormal development of the lymphatic system. The precise etiology is still unknown.

Lymphangiomas are usually diagnosed at birth and develop within the first years of life. When these congenital malformations occur in the oral cavity, the tongue is the most frequently affected site [1]. Lymphangioma of the tongue is a common cause of macroglossia in children, which may lead to a dry, cracked tongue with ulcerating secondary infections, difficulty in swallowing and mastication, speech disturbances, exclusive nasal breathing, airway obstruction, mandibular prognathism and other possible deformities of maxillofacial structures [2, 4].

Tongue lymphangiomas typically demonstrated multiple blisters like a pebbly surface, nodules that appear like a cluster of translucent vesicles on the enlarged dorsal surface of the tongue, but these lesions may also be diffuse involving large portion of the tongue causing macroglosia [3]. Patients with lymphangioma of the tongue commonly present with difficulty to retract and to move their massive tongue which may cause speech disturbances, difficulty in chewing and swallowing and compromise the mechanical plaque removal which enhances the caries risk [4, 5]. Complications are numerous and frequent, including airway compromise, infection, bleeding, and dental caries. [6, 7].

The symptoms depend on the location, size, and extent of the lymphangioma. For dentists, the condition can be categorized as either related to dentition or unrelated to dentition. In most cases, the absence of a connection involves tongue tumors that cause macroglossia, particularly when timely and appropriate treatment is not provided.

Clinical case

The case presented involves 4 years old boy with lymphangioma. On inspection, there was a marked soft tissue growth with numerous papillary and vesicle-like projections which made it appear irregular and granular (Fig. 1).

Fig. 1. *Oral examination showing enlarged tongue*

The lesions initially started on the ventral surface of the tongue and presented as localized white small papules. No other lesions were noticed – mouth ulcers, bleeding or recent infections. There was no family history of a similar presentation. When he was two years old a wedge glossectomy was performed to decrease the tongue's size. The patient was treated by sclerotherapy and he showed the significant improvements after therapy.

The patient seemed well and active with normal mental and physical development. The ex-

tra-oral examination showed a convex profile with increased lower facial height. The deciduous molars are the only teeth that are occluding (Fig. 2).

Fig. 2. *Intraoral examination showing anterior open bite*

The intraoral clinical examination revealed, poor oral hygiene with plaque accumulation, with cervical active cavitated carious lesion on teeth 52, 53 and active carious non-cavitated lesions on the other maxillary teeth (Fig. 3).

Fig. 3. *Minimally-invasive treatment of 52,53 carious lesions*

Treatment plan

Brushing of the teeth was considered to be non-satisfactory according to the OHI which was 2,33. The main objective of the treatment plan was try to motivate the patient to change his behavior, therefore treatment began with preventive measures including diet consulting, basic instruction in oral health care and a discussion on improving oral home care skills by including training on mechanically removing dental plaque and a supervised tooth brushing.

The treatment starts with non-operative treatment of reversible carious lesions – remineralization with professional Tooth Mousse Application. Treatment with professional exogenous fluoride prophylaxis with Varnish fluoride was performed to arrest the early enamel lesions on the vestibular surfaces of the teeth. Reapplication is performed every 3 months.

Treatment of irreversible carious lesions of the tooth 52, 53 was performed with minimally invasive approach (Fig. 3). The obturations of compomer material were placed (Fig. 4).

Fig. 4. *Compomer restorations*

Tantum verde spray for kids was prescribed because of mouth breathing which lead to more often infection of oral mucosa. Additional cleaning of the tongue with tongue scraper was not recommended because can cause bleeding from the tongue. Maintaining good oral health by regular dental visits is recommended.

Discussion

In the present case report in addition to dentoskeletal and functional problems, the patient

presented poor oral hygiene with two cavitated carious lesions and non-cavitated carious lesions on the other maxillary teeth. Young patients with lymphangioma usually presenting by macroglossia, may not only have chewing and breathing problems but also malocclusions, speech and dental disorders [2].

The enlarged tongue with reduced mobility compromises the mechanical removal of the plaque which can lead to an increase of the caries risk in these children [3, 4]. For these reason, dental interventions mush be done promptly and efficiently, with attention to the patient medical history, treatment protocol and health status [6]. All dental procedures should be made after consultation with patient's physician [7, 8]. Multidisciplinary approach should be used in collaboration with orthodontist and dental surgeon.

Preventive dental programs are essential for children with macroglossia, especially before they can undergo surgery. Limited ability to maintain proper oral hygiene increases the likelihood of developing caries and gingivitis. Successful surgical intervention allows the tongue to remain inside the mouth, improving cosmetic appearance and reducing the risk of orthognathic deformities. Pediatric dentists focus on both hard and soft tissues during oral examinations to ensure comprehensive care [9].

Tongue lymphangioma commonly leads to macroglossia in children, resulting in a dry, cracked tongue prone to ulcerative secondary infections. It can cause difficulties with swallowing, chewing, and speaking, as well as exclusive nasal breathing, airway obstruction, mandibular prognathism, and other potential maxillofacial deformities. Preventive dental care is essential for managing these cases, as they do not require specialized skills for basic treatment. Early and accurate differential diagnosis of the condition is crucial for achieving optimal treatment outcomes [10].

Conclusion

Lymphangiomas are relatively rare, more commonly diagnosed in pediatric patients. Early recognition helps in its early management, which can prevent other consequences and complications.

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