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Retrospective Analysis of Acute Odontogenic Osteomyelitis in Children in the Department of Paediatric Maxillofacial Surgery for the Period 2019-2021

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Abstract: The problem of odontogenic purulent-inflammatory diseases of the maxillofacial region in children remains urgent due to the large number of patients with this pathology. Despite the improvement of the quality of care, development of new methods of treatment of purulent-inflammatory diseases of the maxillofacial region, the number of patients with this pathology continues to grow in our country.

Keywords: Acute osteomyelitis , osteonecrosis, facial skull bones, purulent inflammation.

Introduction. The urgency of the problem is determined not only by the frequency of osteomyelitis of the jaws in children, but also by the change in recent years in the clinical course of odontogenic osteomyelitis with the predominance of chronic, sluggishly current, recurrent forms.

Acute osteomyelitis - purulent inflammation of the bone (simultaneously all its structural components) with the development of osteonecrosis. Acute odontogenic osteomyelitis of the jaws in children more often occurs at the age of 7-12 years, which can be associated with the highest frequency of dental caries and its complications in this period. The mechanism of development of acute osteomyelitis is based on a purulent process that leads to the melting of bone substance and its resorption (resorption). The cause of the disease is a decayed or decayed tooth. The disease occurs in the more severe form, the younger the age of the child. In children, general intoxication is sharply expressed. Severe forms of odontogenic osteomyelitis of the jaws are more common in children 3-7 years old, which is associated with incomplete formation of immunity, rapid depletion of body reserves and development of secondary immunodeficiency. Clinical picture The disease usually begins acutely and as an independent form (sometimes osteomyelitis is a further development of periostitis of the jaw), body temperature rises to 38-39°C, there are chills, general weakness and malaise. There is pallor of the skin and mucous membranes. The child becomes capricious and restless, there are marked disorders of sleep and appetite. Local clinical manifestations resemble periostitis of the jaw (see the article "Periostitis of the jaw in children"). A pronounced inflammation appears around the source tooth, there is pathological mobility of it and its neighbouring healthy teeth. Pus may be secreted from under the edges of the gingiva. In the surrounding tissues of the jaw develop spilt purulent periostitis and subperiosteal abscesses, lymphadenitis, phlegmons. In osteomyelitis of the upper jaw in the inflammatory process may involve maxillary sinus, eye cavity and middle ear. The inflammatory

process sometimes becomes diffuse in nature with lesions and death of tooth rudiments. Radiological changes in the affected jaw are detected only on the 7th (and, as a rule, even on the 10th) day from the onset of the disease. Subsequently, the images show that destruction (destruction) of the jaw with the formation of sequesters (dead areas of bone tissue) occurs and grows during 3-4 weeks. At the same time, in addition to the ongoing destruction, the formation of new bone tissue begins. This leads to an increase in bone thickness, thickening of its structure and gradual disappearance of the areas of destruction. After a long time (mostly after 4-6 months), the excessive bone layers begin to dissolve, and the bone acquires its former shape and structure. In more severe - purulent-necrotic form of osteomyelitis occurs partial resorption and rejection (sequestration) necrotised bone tissue with subsequent replacement of the resulting bone defect with new bone or connective tissue scar. In the development of purulent-necrotic inflammation in soft tissues (putrefactive-necrotic phlegmons) the process of sequestration of dead tissues takes about 2-3 weeks. And if the duration of the sequestration period exceeds the above period or after clinical recovery occurs exacerbation of the inflammatory process, we can talk about the emergence of chronic osteomyelitis. When the diagnosis of "osteomyelitis" is made, the patient should be urgently hospitalised for intensive antibacterial anti-inflammatory therapy and emergency surgical intervention.

The age structure of morbidity is dominated by patients of young age, making up 30-60%, therefore, it can be noted that this problem is not only medical, but also general social.

In this regard, the study and solution of the above problems determined the purpose of our work.

Aim of the study: To study the statistics of hospitalised children with osteomyelitis of the jaws according to the archival materials of the department of DCHLH in the period 2019-2021.

Materials and methods of research: 955 patients with acute odontogenic osteomyelitis were examined in our clinic during the analysed period.

Results of the study: depending on the prevalence of purulent processes in the soft tissues of the face in children with acute odontogenic osteomyelitis: 321 33.6%) in one region; 634 (66.4%) patients in several regions.

The largest number of patients seeking inpatient care came from Tashkent province - 484 (50.68 per cent), Tashkent city - 254 (26.6 per cent), and 217 (22.72 per cent) patients from other provinces of the Republic of Uzbekistan. The average number of patients' stay in the department was 8-10 days, in the most complicated cases patients were treated from 15 to 25 days. Data on the distribution of patients according to the international scheme of age periodisation are presented in Table 1.

Table 1 Distribution of patients according to the international scheme of age periodisation

Years	I - childhood period 3-7 years		II - the childhood period of girls 7-11 years		II - the period of childhood of boys 7-12 years old		Adolescence of girls aged 12-15		Adolescence of boys 13-16 years of age		Total	
	n	%	n	%	n	%	n	%	n	%	n	%
2019	38	11%	111	32,2%	97	28,1%	73	21,1%	26	7,5%	345	36,1%
2020	17	6,1%	96	34,5%	77	27,7%	41	14,8%	47	16,9%	278	29,1%
2021	28	8,4%	89	26,8%	94	28,3%	64	19,2%	57	17,1%	332	34,7%
Total	83	8,6%	296	30,9%	268	28,1%	178	18,6%	130	13,6%	955	100%

All patients admitted to the department with odontogenic phlegmons were operated on in the first hours after admission to the hospital.

Conclusion: Based on the data obtained, we found that the number of patients with odontogenic phlegmon of the maxillofacial region continues to increase.

Despite many proposed approaches to the treatment of purulent-inflammatory diseases, none is universal and has its own disadvantages. Thus, odontogenic phlegmons of the maxillofacial region in children require serious preventive measures to reduce these various outcomes and complications.

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