

Prevention and Pathogenetic Care for Patients with Odontogenic Periostitis of the Jaws

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Abstract: Acute odontogenic periostitis is a purulent type of the disease that causes infection of the periosteum of the alveolar process and localized inflammation in periodontal tissues. Purulent periostitis typically affects the lower jaw. Keywords: odontogenic periostitis, odontogenic inflammation, periodontitis.

Acute odontogenic periostitis, a purulent-inflammatory disease of the maxillofacial region, has increased by up to 40% in recent years in both polyclinic dental facilities and maxillofacial hospitals (1). In the early 20th century. The sickness predominantly affected healthy individuals.

In the early 20th century, pyoinflammatory illnesses primarily affected young and middle-aged persons [8, 11]. However, as the population ages, the number of cases in the elderly and senile age is increasing [10]. The most prevalent conditions include acute and chronic periodontitis, worsening of chronic periodontitis, acute purulent periostitis of the jaw, acute osteomyelitis of the jaw, abscess, phlegmon, and lymphadenitis.[1] Odontogenic inflammatory illnesses of the maxillofacial region, particularly abscesses and phlegmons, are widespread and cause major socioeconomic damage. [2]

The literature on the disease's causes varies. Acute purulent odontogenic periostitis of the jaws is typically caused by an aggravation of chronic periodontitis (67.2-78.2%), but can also be caused by abscessing periodontitis [7-9]. VV Kravchenko and IG Leshchenko suggest that acute purulent periostitis occurs when chronic periostitis worsens (75% of patients) [5]. The data on the localization of inflammation is inconsistent. The procedure primarily affects the lower jaw, affecting 60-65% of patients [8-10]. However, M. Yu. Ignatov [4] found that it also affects the top jaw in 60.9% of cases, albeit to varying degrees depending on the side.

The study aimed to investigate the prevalence, etiology, and localization of inflammation in periostitis of the jaws in people of various ages. The research suggests that acute purulent inflammation of the face and neck affects 3-4% of general surgical patients and 50-70% of maxillofacial surgery patients.[3] Phlegmon in the maxillofacial region is a serious and dangerous condition. The severity of a spilled inflammatory process depends on the body's intoxication level. Inflammatory infiltrates in the maxillofacial area are associated with acute pain due to well-expressed innervation.

Phlegmon poses a risk in the maxillofacial region due to its proximity to critical structures and anatomical and topographical aspects that can disseminate the inflammatory process to other areas of the body.[4,5] Odontogenic inflammatory diseases of the maxillofacial region and neck occur when an infectious agent enters the root canal of a tooth with caries and its complications (intra-canalicular pathway) or the periodontal pocket into the periapical tissues (retrograde pathway).[6] For a long time, it was considered that the microbiological landscape in

odontogenic infection was mostly represented by monoculture (Streptococcus, Staphylococcus) or alliances of staphylococci, streptococci, gram-negative rods, and diplococci.[7]

Modern diagnostic approaches have helped detect and verify new microbial associations, including gram-negative opportunistic flora and anaerobes [10]. Until far, researchers have studied the etiology of infectious illnesses in the craniofacial region and neck by analyzing pure cultures of microorganisms isolated from the pathogenic center.[7] Although traditional bacterial cultivation has shed light on microbe physiology, pure culture growth in a suspended condition is unusual in nature.[8]

Microbiologists now know that most bacteria in both natural and artificial environments form structured communities called biofilms.[9] Outpatient dental appointments frequently involve acute purulent-inflammatory processes of the oral cavity, including periostitis, pericoronaritis, abscessing periodontitis, and alveolitis. Purulent inflammation severity and prognosis are determined by catabolic processes, exo- and endotoxins, bacteria, and other biologically active substances [1,2]. Antigens alter neutrophils' phagocytic activity, a non-specific link in the immune system [3].

Phagocytes play a crucial role in both non-specific immune responses to antigenic structures and body-specific reactions. Predicting infectious and inflammatory disorders relies heavily on analyzing the severity of the diseased process at the local level as part of overall body health [4,5]. The disease's outcome is determined by the coordinated interplay of local and systemic immune factors, as well as the function of specific protective mechanisms at different stages of the inflammatory odontogenic process [8, 9]. Smear-prints of the wound surface can be used to assess the progression of inflammation.

The "Yasinovsky test" is used to assess the inflammation of soft tissues in the oral cavity [11]. However, this procedure is difficult and does not rank the degrees of inflammation in the oral cavity's soft tissues. Our study aimed to investigate the relationship between the body's nonspecific reactivity and antimicrobial defense systems, both locally and generally. We developed an express diagnostic method for individuals with acute pyoinflammatory processes of the craniofacial region, allowing for timely treatment planning.

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