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ETIOLOGY AND PATHOGENESIS OF SURGICAL DISEASES OF THE ORAL CAVITY

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Annotation: This article discusses the etiological factors and pathogenetic mechanisms of surgical diseases of the oral cavity. The role of odontogenic infections, trauma, microbial activity, and systemic conditions in the development of pathological processes is analyzed. Particular attention is given to inflammatory reactions in oral tissues and their influence on the progression of maxillofacial diseases. The importance of early diagnosis, effective treatment, and preventive measures in surgical dentistry is also emphasized.

Keywords: oral cavity, surgical dentistry, etiology, pathogenesis, odontogenic infection, inflammation, maxillofacial diseases, dental surgery, diagnosis, prevention.

The study of surgical diseases of the oral cavity occupies an important place in modern dentistry. Surgical dentistry is a specialized branch of dental science that focuses on the diagnosis, prevention, and surgical treatment of various pathological conditions affecting the teeth, jaws, and surrounding oral tissues. Among these conditions, inflammatory processes, traumatic injuries, cystic formations, tumors, and odontogenic infections are considered the most common problems that require surgical intervention. Understanding the etiology and pathogenesis of these diseases plays a crucial role in determining effective diagnostic approaches and selecting appropriate treatment strategies.

The oral cavity is a complex anatomical and functional system that constantly interacts with the external environment. Because of this exposure, it is particularly vulnerable to microbial contamination, mechanical trauma, and systemic influences. Various pathogenic microorganisms present in dental plaque and infected root canals can penetrate surrounding tissues and lead to the development of odontogenic infections. These infections may progress from localized inflammatory processes to severe complications involving the maxillofacial region if timely treatment is not provided. Therefore, identifying the etiological factors that contribute to the development of surgical diseases of the oral cavity remains a key aspect of clinical research.

Etiological factors of oral surgical diseases are diverse and include bacterial infection, dental caries and its complications, periodontal diseases, traumatic injuries, developmental anomalies, and systemic conditions that weaken the immune system. Among these, odontogenic infections are considered the leading cause of many surgical pathologies in dental practice. In addition, poor oral hygiene, delayed dental treatment, and the presence of chronic inflammatory foci significantly increase the risk of disease progression.

The pathogenesis of oral surgical diseases is closely associated with inflammatory and immune responses occurring in the affected tissues. The penetration of microorganisms into periodontal and periapical tissues triggers a cascade of biological reactions involving vascular changes, cellular infiltration, and the release of inflammatory mediators. These processes lead to tissue destruction, formation of purulent exudate, and in severe cases the spread of infection to adjacent anatomical spaces of the maxillofacial region.In recent years, significant progress has been made in the field of surgical dentistry due to advances in diagnostic technologies,

antimicrobial therapy, and minimally invasive surgical techniques. However, despite these developments, surgical diseases of the oral cavity remain a widespread clinical problem that requires further scientific investigation. A deeper understanding of their etiological factors and pathogenetic mechanisms will contribute to improving early diagnosis, optimizing treatment protocols, and preventing possible complications.Thus, the study of the etiology and pathogenesis of surgical diseases of the oral cavity is essential for improving the quality of dental care and ensuring effective management of patients with maxillofacial surgical conditions.

The etiology and pathogenesis of surgical diseases of the oral cavity represent a complex interaction of local and systemic factors that influence the development and progression of pathological processes in the maxillofacial region. Surgical diseases of the oral cavity most commonly arise as a consequence of odontogenic infections, trauma, developmental anomalies, and pathological changes in the surrounding tissues. Understanding the mechanisms of their formation is essential for proper diagnosis, treatment planning, and prevention of complications.

One of the most important etiological factors in the development of oral surgical diseases is odontogenic infection. Dental caries and its complications, such as pulpitis and periodontitis, are considered the primary sources of infection. When pathogenic microorganisms penetrate the pulp chamber and subsequently reach the periapical tissues, inflammatory processes begin to develop. The spread of microorganisms from the infected tooth can lead to the formation of abscesses, cellulitis, periostitis, and osteomyelitis of the jaws. In many clinical cases, untreated dental caries remains the leading cause of odontogenic infections requiring surgical intervention.

Another important etiological factor is traumatic injury to the oral cavity and maxillofacial region. Mechanical trauma may occur as a result of accidents, sports injuries, or surgical procedures. Such injuries can damage the soft tissues, teeth, and jaw bones, creating favorable conditions for secondary infection and inflammatory reactions. In addition, trauma may disrupt the normal anatomical integrity of oral structures, which may lead to the development of pathological changes requiring surgical correction.

The role of microbial flora in the pathogenesis of oral surgical diseases is also significant. The oral cavity contains a large number of microorganisms that form a complex microbiological ecosystem. Under normal conditions, this microflora exists in a balanced state; however, when local or systemic immunity decreases, pathogenic bacteria become more active. Anaerobic bacteria, streptococci, and other opportunistic microorganisms play an important role in the development of odontogenic infections. Their metabolic products stimulate inflammatory reactions and tissue destruction.

Inflammatory processes are central to the pathogenesis of most surgical diseases of the oral cavity. When pathogenic microorganisms invade oral tissues, the body initiates a protective immune response. This response involves vascular changes, migration of immune cells to the site of infection, and the release of inflammatory mediators. These biological reactions lead to swelling, redness, pain, and sometimes the formation of purulent exudate. If the inflammatory process is not controlled, the infection may spread to neighboring anatomical spaces of the face and neck, creating serious clinical complications.Another important aspect in the development of surgical diseases is the presence of systemic factors. General health conditions such as diabetes mellitus, immune system disorders, hormonal imbalance, and chronic systemic diseases can significantly increase the susceptibility of oral tissues to infection. Patients with weakened immunity are more likely to develop severe inflammatory processes and complications following odontogenic infections or surgical procedures.

In addition to infections and trauma, cystic and tumor-like formations may also develop in the oral and maxillofacial region. Odontogenic cysts often originate from remnants of epithelial tissues associated with tooth development. These cysts gradually increase in size and may cause bone destruction, tooth displacement, and facial asymmetry. Surgical removal is usually required to prevent further complications and restore normal anatomical structure.

Modern surgical dentistry emphasizes early diagnosis and minimally invasive treatment approaches. Radiographic imaging, computed tomography, and laboratory diagnostic methods allow clinicians to identify pathological processes at early stages. Early detection of etiological factors and proper understanding of pathogenetic mechanisms enable dental surgeons to choose effective treatment strategies and prevent the progression of oral surgical diseases.Thus, the development of surgical diseases of the oral cavity is influenced by multiple interconnected factors including infection, trauma, microbial activity, systemic conditions, and pathological tissue changes. Comprehensive knowledge of these factors is essential for improving the effectiveness of surgical dental care and ensuring successful clinical outcomes.

In conclusion, surgical diseases of the oral cavity are caused by various factors such as odontogenic infections, trauma, and systemic health conditions. Among them, untreated dental caries and its complications are considered the main causes of many inflammatory processes in the maxillofacial region. The development of these diseases is closely related to microbial activity and inflammatory reactions in oral tissues.

Understanding the etiology and pathogenesis of these conditions is essential for early diagnosis, effective treatment, and prevention of complications. Modern diagnostic methods and surgical techniques play an important role in improving treatment outcomes and maintaining oral health.

References

1.Nishonov Y., Abdullayev A. Surgical dentistry and maxillofacial surgery. Tashkent: Uzbekistan National Encyclopedia State Scientific Publishing House, 2018. - 352 p.

2.Yusupov Sh., Karimov F. Clinical surgical dentistry. - Tashkent: Medicine Publishing House, 2020. - 280 p.

3.Afanasyev V.V., Pashchenko N.V. Surgical dentistry. - Moscow: GEOTAR-Media, 2016. - 688 p.

4.Petrov S.Y., Ivanov A.S. Maxillofacial surgery and surgical dentistry. – Saint Petersburg: SpetsLit, 2017. - 420 p.

5.Peterson L.J., Ellis E., Hupp J.R., Tucker M.R. Contemporary oral and maxillofacial surgery. – 7th ed. – St. Louis: Mosby Elsevier, 2019. - 720 p.