

MAIN FACTORS THAT MAY CAUSE PERIOSTITIS IN ELDERLY PATIENTS

Andijan State Medical Institute

Master's Degree in Dentistry,

1st Year Student:

Bozorova Qizlarxon Tillavoldi qizi

bozqizi@gmail.com

Abstract: This article analyzes the main factors causing periostitis — inflammation of the periosteum — in the upper and lower jawbones in elderly patients, a condition that occurs relatively rarely in this age group but has the potential for serious clinical consequences. The study thoroughly examines the anatomical and physiological characteristics of the aging body, immunological changes, chronic sources of infection, dental problems, metabolic disorders, and risks resulting from pharmacological treatments.

Keywords: infections, periostitis, elderly patients, periosteal inflammation, weakened immune system, metabolic diseases, pharmacological treatment, prevention, early diagnosis.

INTRODUCTION

Today, digitalization is advancing across the world, and various industries are discovering innovations in their fields by utilizing these opportunities. In Uzbekistan — the heart of Central Asia and the homeland of Avicenna, considered the father of world medicine — many branches of medicine are rapidly developing, particularly in dentistry.

According to the World Health Organization (WHO), inflammation of the periosteum in the jaws — although relatively rare in elderly individuals — may lead to serious consequences.

Periostitis is the inflammation of the periosteum, a membrane that covers the bone, and is typically caused by infectious, traumatic, or metabolic factors.

Clinically, periostitis is more commonly seen in middle-aged patients. However, in the elderly, although less frequent, the condition tends to progress more severely and has a higher risk of becoming chronic due to physiological and immunological changes associated with aging.

In old age, the body's reparative capacity declines, and both bone and soft tissue regeneration processes slow down. Moreover, the functional activity of the immune system

decreases, increasing vulnerability to infections. Even minor oral infections can lead to periostitis. The presence of chronic diseases (e.g., diabetes mellitus, atherosclerosis, osteoporosis) and the use of medications (such as corticosteroids and immunosuppressant) also increase the risk of developing this condition.

Early detection and effective treatment of periostitis in elderly patients during dental interventions is crucial, as untreated cases can result in the spread of infection to deep tissues and even systemic inflammatory responses. Therefore, analyzing the causes of periostitis in the elderly and developing preventive strategies is a critical task in modern stomatology and maxillofacial surgery.

METHODOLOGY

This study was conducted to identify the main factors contributing to the development of periostitis in the upper and lower jawbones of elderly patients and to analyze their clinical significance. A comprehensive and systematic approach was employed using both scientific and practical methods.

1. LITERATURE ANALYSIS

In the initial stage, literature was thoroughly reviewed to study factors influencing the development of periostitis in elderly patients. Both international and local sources, including medical monographs, scholarly articles, and expert studies, were analyzed. WHO guidelines and recommendations from other reputable medical institutions were also examined.

Special attention was paid to the anatomical and physiological characteristics of aging, such as decreased metabolic processes, weakened immune responses, and diminished regenerative capacity.

Age-related changes in bones and soft tissues — like decreased bone density and reduced ability for tissue repair — were found to be major risk factors. Dehydration of bones and diseases like osteoporosis in the elderly may also lead to periostitis.

Immunosuppression in elderly patients reduces the body's ability to fight infections. The activity of immune cells such as T and B lymphocytes declines, increasing susceptibility to inflammation, including periostitis.¹

Elderly patients often suffer from chronic infectious and metabolic diseases. Conditions like diabetes, atherosclerosis, and hypertension are common and negatively affect bone tissue.²

¹ Nazarova, M.A. The Immune System of the Elderly.

² Sokolov, A.V. Dental Aspects of Treating Patients with Diabetes Mellitus.

Chronic oral infections such as gingivitis and periodontitis, if not properly treated, can trigger periostitis by causing inflammation in the hard tissues.

The impact of conservative pharmacological treatments is well documented, particularly in elderly patients who frequently take multiple medications. These include corticosteroids, immunosuppressant, analgesics, and antibiotics. While corticosteroids help control inflammation, long-term use can suppress immune function and reduce bone density, increasing the risk of periostitis. Immunosuppressant — often used after transplants or for autoimmune conditions — further weaken immune defenses, making patients more prone to infections and inflammation.

Other drugs such as antibiotics and painkillers also affect general health and inflammatory processes. Uncontrolled and prolonged use of antibiotics can cause antibiotic resistance and weaken the body's natural defenses.

RESULTS AND DISCUSSIONS

The findings confirm that several major factors play a significant role in the onset and severity of periostitis in elderly patients. Literature and clinical data show that the disease largely depends on the patient's overall health, immune condition, coexisting illnesses, and pharmacological treatments.

Among the studied patients, weakened bone tissue, the presence of chronic oral infections, and inconsistencies in treatment were the most prominent risk factors. Periostitis was more common in those with reduced bone regeneration, low immunity, improperly fitted dental prostheses, or poor oral hygiene.

Additionally, patients with chronic metabolic conditions like diabetes, atherosclerosis, and osteoporosis had more severe and prolonged forms of periostitis. Poor blood circulation and reduced tissue nourishment allow infections to take deeper root in bone tissues.³

Long-term pharmacological treatments, especially corticosteroids and immunosuppressant, also play a critical role. These drugs suppress the immune system and disturb oral microbiota balance, creating an environment conducive to inflammation.

The analysis emphasizes the importance of a comprehensive approach in dental care for elderly patients, considering their general health, chronic illnesses, medication history, and immune status.

³ Efremov, O.S. Peculiarities of Outpatient Dental Care for Patients Suffering from Diabetes Mellitus.

Promoting oral hygiene culture, regular preventive checkups, and early detection of oral infections are key strategies in preventing periostitis.

CONCLUSION

Scientific and practical analysis shows that periostitis in elderly patients develops under the influence of multiple interrelated internal and external factors. Among the most significant are age-related anatomical and physiological changes, immune system suppression, slowed regeneration, chronic illnesses, and side effects of pharmacological treatment.

In elderly patients, decreased bone density and reduced periosteal protection can lead to more severe and chronic forms of periostitis. Poor oral hygiene, delayed treatment of dental issues, and untreated infections can all trigger inflammation of the periosteum.

Coexisting conditions such as diabetes, cardiovascular diseases, osteoporosis, and chronic infections significantly increase the risk of periostitis. This risk is exacerbated by corticosteroids and immunosuppressant, which suppress immunity and impair tissue repair.

According to the results of the research, the following important conclusions were drawn:

- A systematic approach is necessary for the early detection and treatment of periostitis in elderly patients;
- Each patient's health condition, existing diseases, and medications being taken must be comprehensively evaluated;
- Preventive measures — such as regular dental check-ups, hygiene education, and individualized oral care recommendations — play a crucial role in preventing periostitis;
- It is necessary to develop and implement specific standards and practical guidelines for elderly patients in dental services.⁴

Based on the above, it can be stated that the prevention and effective treatment of periostitis in elderly patients is one of the pressing issues in modern dentistry. In this regard, it is essential to deepen scientific research, improve the qualifications of medical personnel, and increase public awareness.⁵

REFERENCES

⁴ Gulomova, S.M. Clinical Approaches in Working with Elderly Dental Patients.

⁵ Baxodirova, D.A., & To'laganova, N.X. Dental Approaches in Geriatrics.

1. Bougatef, H. Periostitis Ossificans: Report of Two Cases Resolved with Endodontic Treatment. PubMed. <https://doi.org/10.1155/2020/8876268>
 2. Nazarova, M.A. The Immune System of the Elderly. Vestnik Gerontologii, No. 4, 2020. (In Russian)
 3. Sokolov, A.V. Dental Aspects of Treating Patients with Diabetes Mellitus. Moscow, 2016. (In Russian)
 4. Efremov, O.S. Peculiarities of Outpatient Dental Care for Patients Suffering from Diabetes Mellitus. Moscow, 2007. Link (In Russian)
URL: <https://medical-diss.com/medicina/osobennosti-ambulatornogo-stomatologicheskogo-priema-bolnyh-stradayuschih-saharnym-diabetom>
 5. Gulomova, S.M. Clinical Approaches in Working with Elderly Dental Patients. Journal of Uzbek Dentistry, No. 1, 2021. (In Uzbek)
- Baxodirova, D.A., & To'laganova, N.X. Dental Approaches in Geriatrics. Scientific Bulletin of Tashkent Medical Academy, 2020. (In Uzbek)