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Research Article

PREVALENCE OF DENTAL DISEASES IN PATIENTS WITH BONE TUBERCULOSIS

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ABSTRACT

This article addresses dental aspects in patients with bone tuberculosis. The study aims to identify the prevalence of dental diseases, their clinical manifestations, and risk factors. Mechanisms of maxillofacial system damage, the impact of antituberculosis therapy, as well as methods for preventing and treating complications, are analyzed. The work is based on clinical observations and contemporary literature data.

KEYWORDS

Bone tuberculosis, dental diseases, caries, periodontitis, osteomyelitis, prevention, maxillofacial system.

INTRODUCTION

Bone tuberculosis is a severe form of extrapulmonary tuberculosis characterized by damage to bone tissue and joints. This condition causes significant systemic changes, including impairments in immune, metabolic, and regenerative processes.

Special attention is drawn to the condition of the oral cavity in such patients. Tuberculosis and the medications used for its treatment lead to significant

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dental complications that reduce patients' quality of life.

Currently, there is insufficient research on the prevalence of dental diseases in patients with bone tuberculosis, complicating the development of effective preventive and therapeutic measures.

Objective: To analyze the prevalence of dental diseases among patients with bone tuberculosis, study risk factors, and develop recommendations for prevention and treatment.

Literature Review

The relationship between tuberculosis and dental diseases has been actively studied in recent decades.

Studies by Pande and Bhattacharya (2018) confirm that patients with tuberculosis often exhibit specific granulomatous lesions in the oral cavity. These changes are due to both direct tissue infection and the systemic effects of the disease.

Research by Gabay and Lemaire (2019) indicates mineral metabolism disorders in patients with bone tuberculosis, increasing the risk of osteoporosis and osteomyelitis of the jaw bones. Additionally, chronic inflammation-induced immunosuppression creates favorable conditions for oral infections.

According to the World Health Organization (WHO, 2020), the frequency of dental diseases in patients with tuberculosis is significantly higher than in the general population. This is associated with side effects of antibacterial therapy, such as dry mouth, microbiota disruption, and increased tissue sensitivity.

methods

The study was conducted over two years at specialized medical institutions in Samarkand. The sample included 50 patients (30 men and 20 women) diagnosed with bone tuberculosis, aged 20 to 60 years.

Methods used:

1. Clinical examination: Assessment of teeth, gums, and oral mucosa.

2. Radiography: Detection of pathological changes in jaw bones.

3. Laboratory tests: Analysis of saliva composition, secretion levels, and microbiota evaluation.

4. Immunological tests: Determination of immunoglobulin levels (IgA, IgG) to assess local and systemic immunity.

5. Analysis of therapy side effects: Collection of data on the impact of antituberculosis drugs on oral health.

RESULTS

Prevalence of Dental Diseases

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• 65% of patients were diagnosed with dental diseases:

• Caries and its complications: 35%

• Gum diseases (gingivitis – 25%, periodontitis – 20%)

• Jaw osteomyelitis: 10%

Dry Mouth and Dysbiosis

• 40% of patients experienced pronounced dry mouth due to salivary gland suppression by isoniazid and rifampin.

• Oral dysbiosis was observed in 30% of patients, contributing to caries and gingivitis.

Pathological Changes in Bone Tissue

• Radiographic examination revealed signs of osteoporosis and localized destructive processes in 15% of patients. The most common findings included areas of bone rarefaction and periosteal reactions.

Immunological Changes

• A decrease in IgA and IgG levels was noted in 70% of patients, indicating reduced local and systemic immunity, which increases the risk of oral infectious and inflammatory diseases.

DISCUSSION

Mechanisms of Dental Disease Development

1. Immune Dysfunction: Chronic inflammation in tuberculosis reduces the oral tissues' resistance to infections.

2. Metabolic Disorders: Calcium deficiency and bone metabolism impairment increase the risk of osteoporosis and osteomyelitis.

3. Drug Effects: Antituberculosis medications disrupt salivary gland function and microbiota, promoting caries and gum diseases.

Clinical Manifestations

The most common patient complaints included:

• Tooth and gum pain.

• Dry mouth.

• Gum bleeding.

• Tooth destruction due to crown loss.

Prevention and Treatment

Prevention:

1. Oral hygiene: Use of fluoride-containing toothpaste and antiseptic solutions.

2. Diet therapy: Enrichment of the diet with calcium, and vitamins D and C.

3. Regular dental check-ups: Preventive visits to the dentist at least once every three months.

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Treatment:

1. Comprehensive approach: Involvement of both dentists and TB specialists in treatment.

2. Local therapy: Use of anti-inflammatory gels and medications to stimulate salivary secretion.

3. Immunotherapy: Application of immunomodulators to restore local immunity.

4. Remineralization: Prescription of fluoride- and calcium-containing agents to strengthen teeth.

CONCLUSION

1. Dental diseases are widespread among patients with bone tuberculosis.

2. The main risk factors include reduced immunity, side effects of therapy, and microbiota disruption.

3. Prevention and timely diagnosis of dental complications improve prognosis and quality of life.

4. A multidisciplinary approach involving collaboration between dentists and TB specialists is essential.

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