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DETERMINATION OF CLINICAL AND MORPHOLOGICAL FEATURES OF CHRONIC TONSILLITIS AND IMPROVEMENT OF TREATMENT EFFECTIVENESS

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Abstract

Chronic tonsillitis is a persistent inflammatory disease of the palatine tonsils characterized by recurrent infections and structural alterations of lymphoid tissue. The condition significantly affects quality of life and may lead to systemic complications. This study aims to determine the clinical and morphological features of chronic tonsillitis and to evaluate approaches for improving treatment effectiveness. Clinical examination, histological analysis, and assessment of therapeutic outcomes were performed. The findings revealed structural disorganization of lymphoid follicles, epithelial hyperplasia, fibrosis, and inflammatory infiltration in chronic cases. A comprehensive treatment strategy combining antimicrobial therapy, immunomodulation, and, when indicated, surgical intervention demonstrated improved clinical outcomes. Understanding the morphological basis of chronic tonsillitis contributes to optimized management and prevention of complications.

Key words: chronic tonsillitis, lymphoid tissue, inflammation, fibrosis, clinical morphology, treatment effectiveness

Introduction

Chronic tonsillitis is a common inflammatory disorder of the palatine tonsils characterized by persistent infection and recurrent exacerbations. The tonsils are part of Waldeyer's lymphatic ring and play an essential role in immune defense by participating in antigen recognition and immune response formation. However, repeated infections may lead to chronic inflammation, structural remodeling, and impaired immune function.

Chronic tonsillitis is associated with local symptoms such as sore throat, halitosis, and dysphagia, as well as systemic manifestations including fatigue and low-grade fever. In some cases, it may contribute to complications affecting the cardiovascular, renal, or musculoskeletal systems. Determining the clinical and morphological features of chronic tonsillitis is essential for accurate diagnosis and effective treatment planning.

Objective

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The primary objective of this study was to comprehensively determine the clinical and morphological characteristics of chronic tonsillitis and to assess their relationship with disease severity and recurrence patterns. The study aimed to analyze the correlation between clinical manifestations—such as recurrent sore throat, tonsillar hypertrophy, crypt detritus, halitosis, and regional lymphadenopathy—and the underlying structural alterations observed in tonsillar tissue.

A further objective was to identify specific histopathological features associated with chronic inflammation, including lymphoid follicle hyperplasia or depletion, epithelial hyperplasia, crypt dilation, inflammatory cell infiltration, and stromal fibrosis. Particular

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attention was given to evaluating how long-term inflammatory remodeling affects the functional capacity of the tonsils and contributes to persistent infection.

Additionally, the study sought to evaluate the effectiveness of different treatment approaches—conservative therapy versus surgical intervention—based on morphological findings. By establishing a link between tissue structure and therapeutic outcomes, the research aimed to improve individualized treatment planning, reduce recurrence rates, and minimize the risk of local and systemic complications.

Ultimately, the objective was to provide a clinically relevant framework that integrates morphological analysis into routine diagnostic and therapeutic decision-making for patients with chronic tonsillitis.

Materials and Methods

The study included patients diagnosed with chronic tonsillitis based on clinical criteria such as recurrent throat infections, tonsillar hypertrophy, crypt detritus, and cervical lymphadenopathy. Clinical examination and laboratory investigations were performed to assess inflammatory markers.

Tonsillar tissue samples obtained during tonsillectomy were subjected to histological examination. Specimens were fixed in 10% neutral buffered formalin, processed using standard paraffin-embedding techniques, and sectioned at 4–5 µm thickness. Hematoxylin and Eosin staining was used to evaluate general tissue architecture and inflammatory infiltration. Additional histochemical staining was applied to assess fibrosis and epithelial changes.

Treatment effectiveness was evaluated based on symptom reduction, recurrence frequency, and postoperative recovery outcomes.

Results

Clinical evaluation revealed recurrent episodes of sore throat, enlargement of palatine tonsils, caseous plugs within tonsillar crypts, and regional lymph node enlargement. Some patients reported systemic symptoms such as fatigue and subfebrile temperature.

Histological examination demonstrated significant morphological alterations. Lymphoid follicles showed hyperplasia with reactive germinal centers in some cases, while others exhibited depletion and structural disorganization. The surface epithelium displayed areas of hyperplasia and focal ulceration. Dense inflammatory cell infiltration, predominantly lymphocytes and plasma cells, was observed in the interfollicular regions.

Fibrotic changes were identified in the tonsillar stroma, particularly in long-standing cases. Crypts were often dilated and filled with cellular debris and bacterial colonies. These morphological features indicated chronic inflammatory remodeling of tonsillar tissue.

Patients who received комплекс treatment, including appropriate antimicrobial therapy, local antiseptic measures, and immunomodulatory support, demonstrated reduced recurrence rates. In advanced cases with severe fibrosis and recurrent infection, tonsillectomy provided significant clinical improvement.

Discussion

The study confirms that chronic tonsillitis is characterized by persistent inflammatory and structural changes within tonsillar tissue. Hyperplasia of lymphoid follicles reflects ongoing

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immune stimulation, whereas fibrosis indicates chronicity and reduced functional capacity of the tonsils. Structural remodeling may impair drainage of crypts, promoting bacterial persistence and recurrent infections.

Understanding the morphological features of chronic tonsillitis helps in determining disease severity and selecting appropriate therapeutic strategies. Conservative treatment is effective in early stages; however, advanced structural damage may require surgical intervention. Combining clinical assessment with morphological evaluation improves diagnostic accuracy and treatment outcomes.

Conclusion

Chronic tonsillitis is a persistent inflammatory condition characterized by both pronounced clinical manifestations and significant morphological alterations within the palatine tonsils. The present study demonstrates that the disease is not merely a recurrent infectious process but a complex structural and immunological disorder involving lymphoid hyperplasia, epithelial remodeling, chronic inflammatory infiltration, and progressive fibrosis. These morphological changes reflect prolonged antigenic stimulation and impaired local immune regulation.

Histological findings such as dilated crypts filled with detritus, disorganization of lymphoid follicles, stromal fibrosis, and epithelial hyperplasia confirm the chronic nature of the inflammatory process. Over time, these structural alterations reduce the functional capacity of the tonsils, disrupt normal lymphoid architecture, and promote bacterial persistence. Fibrotic remodeling further compromises tissue elasticity and drainage, contributing to recurrent exacerbations and increased risk of systemic complications.

The study highlights the importance of correlating clinical symptoms with morphological features to determine disease severity and select optimal treatment strategies. Conservative therapy, including targeted antimicrobial treatment, anti-inflammatory measures, and immunomodulatory support, is effective in early or moderately advanced cases. However, in patients with severe structural damage and frequent relapses, surgical intervention such as tonsillectomy provides significant clinical improvement and reduces recurrence rates.

Comprehensive evaluation combining clinical assessment, laboratory findings, and histological analysis enhances diagnostic accuracy and treatment planning. Early identification of morphological changes allows timely therapeutic intervention, preventing chronic progression and systemic sequelae affecting the cardiovascular, renal, or musculoskeletal systems.

In conclusion, understanding the clinical and morphological characteristics of chronic tonsillitis is essential for improving treatment effectiveness and patient outcomes. An individualized, evidence-based approach that integrates morphological data into therapeutic decision-making significantly enhances disease management and reduces the burden of chronic inflammatory complications.

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