



A STUDY ON TONSILLAR ACTINOMYCETES: OUR OBSERVATION

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ABSTRACT

Tonsillar actinomycetes, while rare, should be considered in patients with chronic or recurrent tonsillitis. Here we present five cases of tonsillar actinomycetes, their symptomatology, presentation and management.

KEYWORDS : Tonsillar actinomycetes, chronic tonsillitis, recurrent tonsillitis**INTRODUCTION**

Tonsillar actinomycetes represent a fascinating yet underexplored aspect of microbial ecology within the oral cavity. Actinomycetes, a diverse group of Gram-positive bacteria, are commonly found in various environmental niches, including soil, water, and the oral cavity. While many actinomycetes serve beneficial roles, some species have been implicated in opportunistic infections, particularly in the tonsils.^[1]

Tonsillar actinomycetes, primarily belonging to the genus *Actinomyces*, can establish commensal relationships with the host mucosa. However, under certain conditions, these microorganisms can become pathogenic, leading to the development of tonsillar actinomycosis. This condition, characterized by the formation of abscesses and granulomatous lesions in the tonsillar tissue, poses diagnostic and therapeutic challenges to clinicians.^[2]

Understanding the epidemiology, pathogenesis, clinical manifestations, and management of tonsillar actinomycetes is essential for providing timely and effective care to affected individuals. Despite advances in diagnostic techniques and antimicrobial therapy, tonsillar actinomycosis remains a relatively rare but clinically significant entity. In this paper, we aim to explore the current state of knowledge regarding tonsillar actinomycetes, with a focus on their epidemiology, pathogenesis, clinical presentation, diagnostic strategies, and treatment options. By synthesizing available evidence and identifying gaps in understanding, we hope to contribute to the broader understanding of this intriguing aspect of microbial pathobiology and its implications for clinical practice.

REVIEW OF LITERATURE

Tonsillar actinomycetes, particularly species of the genus *Actinomyces*, have garnered increasing attention in the medical literature due to their role in causing tonsillar actinomycosis. This provides a comprehensive review of the existing literature on tonsillar actinomycetes, encompassing epidemiology, pathogenesis, clinical manifestations, diagnostic approaches, and treatment modalities.

Tonsillar actinomycetes are relatively rare pathogens. There is limited data on the exact incidence and prevalence of tonsillar actinomycetes in India due to underreporting and challenges in diagnosis. However, available studies and reports indicate that while it is not a common infection, it is present and can be misdiagnosed due to its similarity to other more common tonsillar infections.

Studies have suggested that *Actinomyces* species are commonly found as part of the normal microbiota of the oral cavity, including the tonsils, with colonization rates varying among populations and age groups. - Certain predisposing factors, such as chronic tonsillitis, immunosuppression, and poor oral hygiene, may increase the risk of tonsillar actinomycosis.

The pathogenesis of tonsillar actinomycosis involves the invasion of

Actinomyces species into the tonsillar tissue, often facilitated by mucosal disruption or microtrauma. - *Actinomyces* organisms form characteristic sulfur granules within abscesses and granulomatous lesions, contributing to the chronic and indolent nature of the infection. - Host factors, including impaired local immune responses and anatomical variations in tonsillar architecture, may influence susceptibility to tonsillar actinomycetes.

Tonsillar actinomycosis typically presents with nonspecific symptoms, including sore throat, odynophagia, and cervical lymphadenopathy, which may mimic other infectious or inflammatory conditions. - The chronicity and insidious onset of symptoms often lead to delays in diagnosis and treatment, resulting in potentially severe complications, such as peritonsillar abscesses and deep neck infections.^[3]

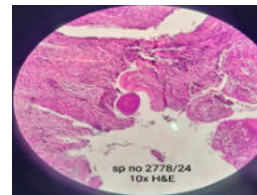
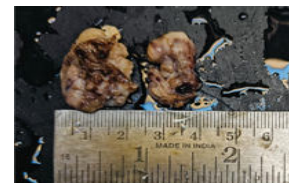
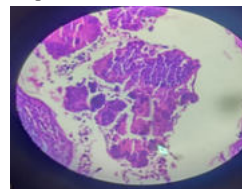
**Fig 1-** tonsillar hypertrophy**fig 2** – histopathology of operated tonsil**Fig 3-** gross image of operated tonsil

Fig 4-histopathology of operated tonsil**OBSERVATIONS**

In the present study we included five patients diagnosed with tonsillar actinomycetes. These patients presented mostly in age groups between 17 to 50 yrs. 3 patients had 6 months history of recurrent sore throat, low grade fever and halitosis, 1 patient presented with a unilateral tonsillar abscess and 1 patient presented with recurrent tonsillitis with history of 2 yrs. 4 patients have erythematous tonsils with visible white exudates. And 1 patient presented with abscess with draining pus. Throat swab was sent and subsequent culture was done in all the patients. Culture sensitivity reported actinomycetes species in all patients most commonly actinomycetes Israeli. 4 patients received treatment with oral antibiotics but showed no significant improvement in their symptoms and there were recurrent episodes. So patients were admitted, given IV antibiotics followed by tonsillectomy was done. 1 patient who presented with unilateral tonsillar abscess, it was drained followed by interval tonsillectomy after 6 wks was performed. All patients showed significant improvement post-treatment, with no recurrence of symptoms reported during the six-month follow-up.

DISCUSSION

Tonsillar actinomycetes, while rare, should be considered in patients with chronic or recurrent tonsillitis, especially when standard treatments fail. Accurate diagnosis and effective treatment are crucial to prevent complications. The five cases presented highlight the importance of considering actinomycetes in differential diagnoses and the need for appropriate microbiological and histopathological investigations.

Diagnosis of tonsillar actinomycosis relies on a combination of clinical suspicion, microbiological culture, histopathological examination, and radiological imaging. - Identification of characteristic sulfur granules on histological specimens remains the gold standard for confirming the diagnosis, although culture-based techniques and molecular assays may also be employed.

Antimicrobial therapy, particularly with beta-lactam antibiotics such as penicillin or amoxicillin, is the cornerstone of treatment for tonsillar actinomycosis. - Surgical intervention, including tonsillectomy or drainage of abscesses, may be necessary in cases of refractory disease, extensive tissue involvement, or complications.

Long-term follow-up is essential to monitor for recurrence and ensure resolution of infection, especially in immunocompromised individuals. In conclusion, despite its rarity, tonsillar actinomycosis represents a clinically significant entity with diagnostic and therapeutic implications. Further research is needed to elucidate the epidemiology, pathogenesis, and optimal management strategies for this intriguing condition, thereby enhancing our understanding and improving patient outcomes.

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