

Tonsillar Actinomycosis with an Unusual Presentation

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ABSTRACT

The presence of Actinomyces in tonsillar tissue and its association with tonsillar diseases have been investigated for many years. A 13-year-old female patient presented initially with history of fever and sore throat. She was diagnosed to have acute tonsillitis. Following the initial presentation, the patient continued to have frequent attacks of acute tonsillitis with high fever for five months duration. Then, the patient was admitted to the hospital as a case of acute tonsillitis with relapsing fever for investigation. The patient underwent tonsillectomy and the histopathological examination of the excised tonsils revealed characteristic colonies of actinomycetes. Post operatively the patient was treated with intravenous (I.V) penicillin for three weeks followed by oral penicillin for three months as advised by the hospital infectious disease (I.D) team and completely recovered.

INTRODUCTION

Actinomycosis is a chronic suppurative inflammation caused by anaerobic, gram positive, branching, filamentous bacteria which is commensal organism in the oral cavity, ¹ and tonsillar crypts.² Actinomycetes species exist in plaque deposits over the teeth and gingival crevices.²

According to limited studies, actinomycetes have a role in tonsillar hypertrophy as well as recurrent tonsillitis.³⁻⁶ The presence of Actinomyces in tonsillar specimens has been identified since 1896,⁷ and its incidence varied between 1.3% and 57% in the literature.⁸

The presence of Actinomyces in tonsillar tissue and its association with tonsillar diseases have been investigated for many years.⁸ However; a definitive conclusion on this issue still has not been obtained.

Different studies showed that the percentage of tonsillectomy specimens with colonization of tonsillar crypts by Actinomyces varies between 6.7% and 35%.^{6,9,10} The characteristic finding on histological examination of the tissue is an outer zone of granulation tissue and a central zone of necrosis containing many sulfur granules that represent microcolonies of actinomycetes.¹¹ Actinomycosis infection of the head and neck, although fairly uncommon, represents an important entity because of its variable presentation that may mimic other common diseases, the difficulties involved in its diagnosis, and the long course of treatment mandatory to eradicate the disease.

Keywords: Actinomycosis, Tonsillitis, Histopathology.

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This case highlights the clinical importance of the organism identification and the accurate diagnosis as treatment differs.

CASE REPORT

A 13-year-old female patient with no previous medical problems, presented initially to the Otolaryngology, head & neck surgery clinic with history of fever and sore throat. She was diagnosed to have acute tonsillitis and treated with oral Augmentin for ten days. Following the initial presentation, the patient continued to have frequent attacks of acute tonsillitis with high fever for five months duration. Then, the patient was admitted to the hospital as a case of acute tonsillitis with relapsing fever for investigation. Complete blood count (CBC), serum electrolytes, renal and liver function tests all were within normal limits. Urine and stool analysis were unremarkable. Blood, urine, and stool cultures were negative. Cytomegalovirus (CMV), Epstein-Bar virus (EBV), and Human immunodeficiency virus (HIV) serology tests all were negative. Chest x-ray and whole body computed tomography (C.T) scan were also negative.

The patient was given intravenous (I.V) cefuroxime for one week and she recovered fairly well. During the follow up period the patient continued to have on & off fever with sore throat so the decision was made to book the patient for tonsillectomy based on the history of recurrent acute tonsillitis and the suspicion of malignancy.

The patient underwent tonsillectomy and the histopathological examination of the excised tonsils revealed characteristic colonies of actinomycetes (Figure 1). Post operatively the patient was treated with intravenous (I.V) penicillin for three weeks followed by oral penicillin for three months as advised by the hospital infectious disease (I.D) team. The patient recovered completely and she remained asymptomatic for one year follow up period.

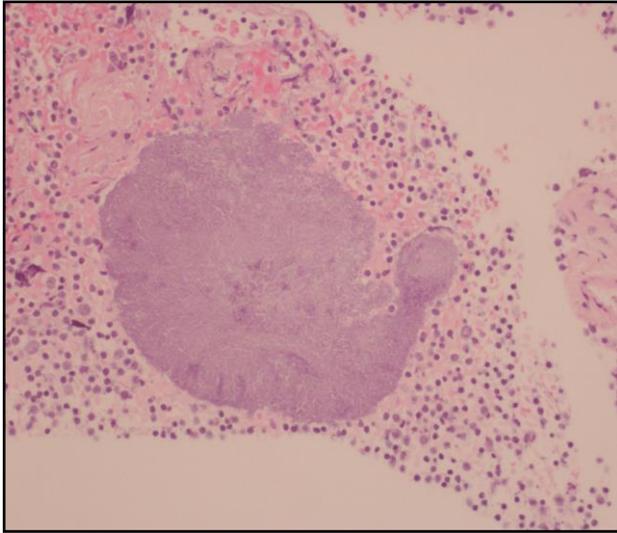


Figure 1: Hematoxylin and eosin-stained slide showing a characteristic large colony of actinomycetes within a group of tonsillar lymphocytes. The actinomycetes are sulphur color like hairy structure.

DISCUSSION

In the present case, Actinomycosis was identified through histopathological examination as Actinomycetes colonies can be easily detected with hematoxylin and eosin (H&E) staining.⁶ The clinical differential diagnosis of Actinomycosis is usually quite difficult.¹²

Actinomycosis growth is very difficult even on appropriate anaerobic media, and therefore, culture of this organism is often impossible and had a number of false negative results.¹³ Therefore, the histopathological identification of Actinomycosis had higher yield than culture.

The prevalence of Actinomycetes in tonsils was reported to be as high as 57% in the literature.¹⁴ Although, Actinomycosis is three times more common in males than females,¹⁵ the present case is female. So, we should not exclude females from being a suspicious case of tonsillar Actinomycosis.

Actinomycetes acts as a commensal organism and cannot penetrate healthy tissues to produce infection.¹⁶ Bhargava et al (2001) indicated the possible role of actinomycosis in causing tonsillar hypertrophy suggesting that Actinomycosis infection of the tonsils may be an etiological factor for tonsillar hypertrophy.¹⁷ While some other authors have not shown correlation between Actinomycosis and recurrent tonsillitis Suggesting that the organism as a saprophyte of the normal tonsils.^{2,18}

The present case supports the idea that Actinomycosis has a significant role in tonsillar disease. The patient presented with very frequent attacks of acute tonsillitis not responding well to broad-spectrum antibiotics and required frequent hospital admissions, which raised the suspicion that the patient might harbour tonsillar

malignancy. However, generally speaking, the role of Actinomycosis in tonsillar diseases is not clearly understood.

According to Patnayak et al (2012),¹⁹ Actinomycosis can lead to massive tonsillar enlargement that mimic neoplasms. Therefore, increased awareness and high degree of suspicion are required regarding tonsillar Actinomycosis.

CONCLUSION

The role of Actinomycosis in tonsillar disease is still a subject of debate in the literature. Therefore, further studies are required to understand the role of actinomycosis in tonsillar diseases.

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