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**ACTINOMYCOSIS OF TONSILS – INCIDENTAL
OR PATHOLOGICAL? – A CASE REPORT**

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ABSTRACT

Actinomycosis of the tonsillar tissue is a rare pathological condition whose clinical significance has been disputed over by authors worldwide. We report a case of Actinomycosis of the tonsils in a young boy with symptoms of chronic tonsillitis. We believe that the infection would have been the cause of repeated bouts of sore throat in the patient leading to chronic tonsillitis and tonsillar atrophy.

KEYWORDS:Tonsils, Actinomycosis, Tonsillar hypertrophy, PAS stain, Chronic tonsillitis



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INTRODUCTION

Actinomyces are branching filamentous Gram-positive facultatively anaerobic bacilli and live as commensals in the oral cavity. Most human cases of actinomycosis are caused by *Actinomyces israelii*. Cervicofacial infection involving the jaw is the most common manifestation. The organisms gain access to the tonsillar tissue as a result of a breach in the epithelium due to dental procedures, dental caries or trauma. Aggressive post-operative treatment with antibiotics is necessary after tonsillectomy for complete cure of the patient.

CASE REPORT

A 12 years old boy presented to the ENT department of SreeBalaji Medical College and Hospital with the chief complaints of repeated bouts of headache and upper respiratory tract infections since 5 months. The patient had history of nose block and snoring, but didn't complain of mouth breathing. On examination, both ears revealed impacted wax. Oral examination revealed dental caries in the left lower premolar. The nose examination was normal. The throat examination revealed bilateral enlarged tonsils. Grade III adenoid

enlargement was evident. The jugulodigastric nodes were palpable and non-tender. The patient was afebrile and his vitals were normal. The rest of the general examination was unremarkable.

Investigations

All baseline hematological investigations were normal in the patient. HIV I and II Elisa tests were negative. A diagnosis of chronic adenotonsillitis was made. After obtaining an anaesthetic fitness, an adenotonsillectomy procedure was performed and the patient's post-operative period was unremarkable.

Histopathological Examination

The gross examination revealed tonsils measuring 3x3x2cm showing whitish nodules on cut section. The microscopic examination of hematoxylin and eosin stained smears showed stratified squamous epithelium overlying lymphoid tissue with reactive follicles and germinal centres. The left tonsillar tissue showed actinomyces colonies with the surrounding tissue reaction (Figures 1 & 2). The Periodic-acid Schiff stain showed bright magenta coloured Actinomyces colonies. (Figures 3 & 4).

Figure 1
(Low power 10x): Actinomyces colony within tonsillar crypt H&E stain

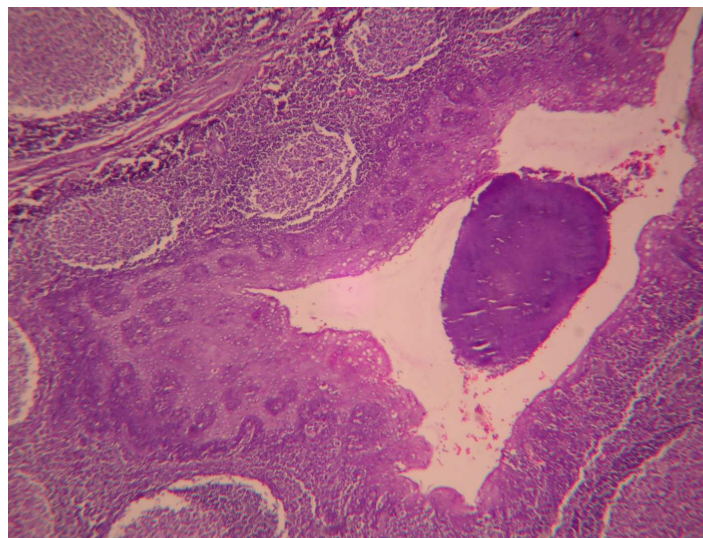


Figure 2
(Low Power 10x): Actinomyces colony with tonsillar tissue showing lymphoid hyperplasia H&E stain

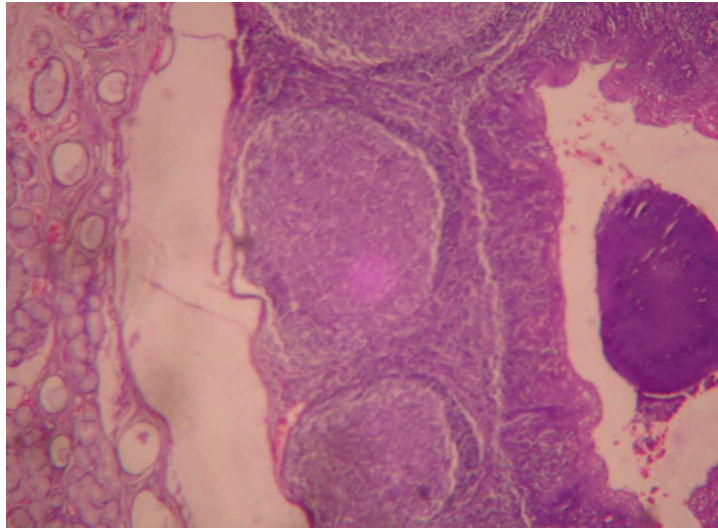


Figure 3
(Low Power 10x): PAS stain positive Actinomyces colonies surrounded by microabscess

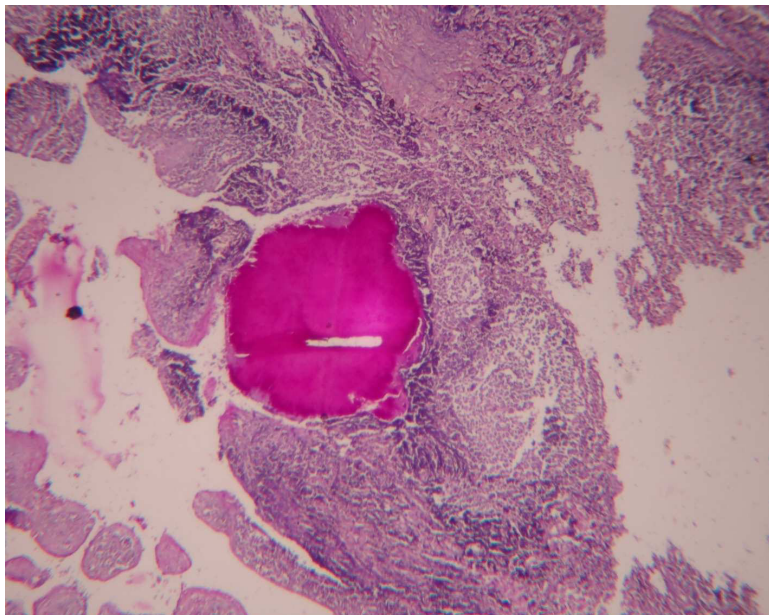


Figure 4
(High Power 45x): PAS positive actinomyces colony Surrounded by and inflammatory infiltrate in the tonsillar tissue



DISCUSSION

The presence of actinomyces in normal and diseased tonsils and its clinical significance in the pathogenesis of tonsillitis has been a topic of heated debate for long. Van Lierop et al¹ examined 344 tonsils and found no tissue reaction due to actinomyces colonies and hence reported that there was no correlation between tonsillar actinomycosis and recurrent tonsillitis. Toh et al² examined 834 specimens and found no correlation between tonsillar hypertrophy and actinomycosis. Both these reports showed no tissue reaction in spite of Actinomyces colonisation of tonsils. Contrary to the above reports, Aydin et al³ analysed 1820 tonsillectomy specimens and reported that cryptitis was a common histopathologic indicator of tonsillar actinomycosis. Assimakopoulos et al⁴ studied the histopathological sections of 238 tonsils and concluded that Actinomyces colonisation of the tonsillar crypts was significant in causing chronic tonsillitis. Ozgursoy et al⁵ suggested that Actinomyces colonisation could cause lymphoid hyperplasia and obstructive tonsillar hypertrophy. Several other authors⁶ have also studied histopathological sections from

tonsillectomy specimens and have arrived at similar conclusions. All these studies report a positive tissue reaction to Actinomyces colonies in the tonsils. Actinomyces naeslundii is an integral part of dental plaque biofilms⁷ and effective elimination of the species with aggressive antibiotics and strict oral hygiene is essential for prevention of tonsillar hypertrophy and subsequent chronic tonsillitis due to actinomyces colonization of the tonsils.

CONCLUSION

The histopathological examination of tonsils in our case report also documents a definite tissue reaction to the Actinomyces colonies. The age of the patient and clinical signs and symptoms all correlate with the findings of other authors in previous studies. Hence actinomycosis of the tonsillar core in our case was most probably the reason for acute tonsillitis not responding to conventional antibiotics and chronic tonsillar hypertrophy leading to obstructive symptoms.

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