

## Case Report

### Reactive Actinomycotic tonsillar lesion

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#### ABSTRACT

Actinomycosis, because of its varied presentation mimics many other common diseases. We report the rare occurrence of reactive actinomycotic tonsillar lesion in a 17-year-old boy. Accurate histopathological diagnosis facilitated early institution of appropriate treatment.

**Key Words:** Actinomycosis; Tonsil

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#### INTRODUCTION

Actinomycosis is caused by the Gram-positive, branching, filamentous bacteria which results in chronic suppurative inflammation of the organs involved. Normally the organism lives as a commensal in human oral cavity.<sup>1</sup> Six Actinomyces species are pathogenic to humans; which include the facultative anaerobe *A. israelii*, *A. naeslundii*, *A. odontolyticus*, *A. viscosus*, *A. meyeri*, and *A. gerencseriae*.<sup>2</sup> When actinomycotic abscess ruptures through the skin it forms pus (*sulphur granules*) discharging lesions.<sup>3</sup> Definitive diagnosis of actinomycosis is important as it helps in initiating appropriate antibiotic therapy early. We report the rare occurrence of reactive actinomycotic lesion of tonsil in a young male.

#### CASE REPORT

A 17-year-old boy presented with a history of throat pain and enlargement of tonsils of 1 month duration. He was not a tobacco smoker and he did not consume alcohol. As he had similar complaints several times during the previous 6 months he underwent tonsillectomy. Grossly, two specimens each measuring 3 x 2 x 1 cm labelled left and right tonsil were received; whitish areas were evident on cut section.

Histopathological examination revealed stratified squamous epithelium and underlying exaggerated

lymphoid hyperplasia with notable presence of Actinomyces colonies (Figures 1 and 2) that were evident on Periodic-acid Schiff (PAS) (Figure 3) and Gomori methanamine silver (GMS) staining (Figure 4). The patient received antibiotic therapy with penicillin G 2 lakh units IV 8<sup>th</sup> hourly for 1 week followed by amoxycillin three times a day for 4 months. The patient recovered and is doing well on follow-up.



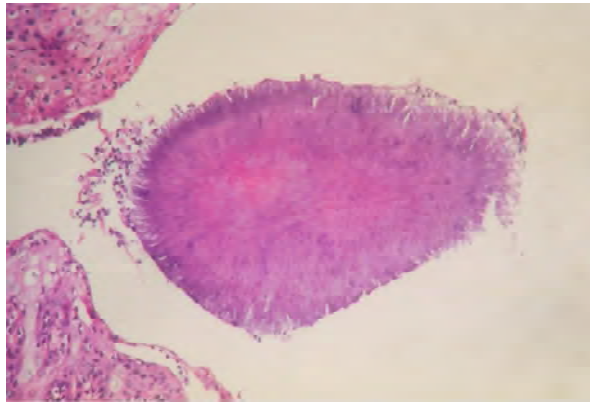
**Figure 1:** Photomicrograph showing tonsillar epithelium with underlying lymphoid tissue and presence of Actinomyces colonies (arrows) (Haematoxylin and eosin, × 100)

#### DISCUSSION

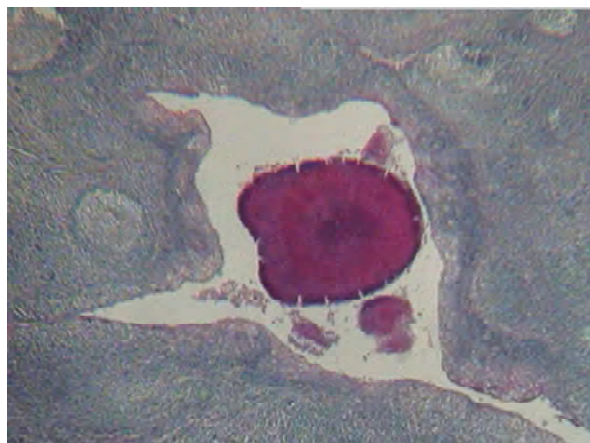
The principal cause of human actinomycosis is *A. israelii*. The Actinomyces are common saprophytic microorganisms which are found in the

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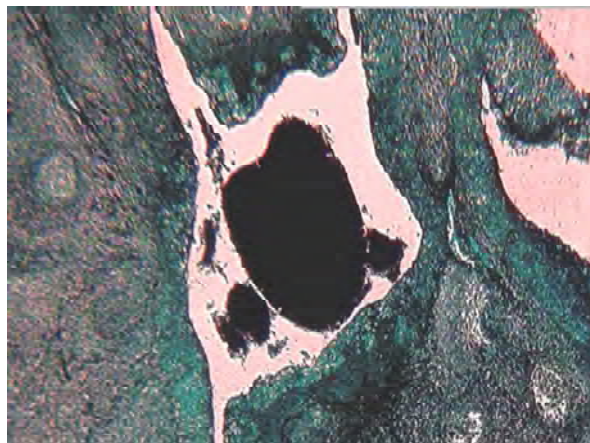
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**Figure 2:** Photomicrograph showing Actinomyces colonies with branching filaments (Haematoxylin and eosin,  $\times 100$ )



**Figure 3:** Photomicrograph showing Actinomyces colonies within tonsillar crypt (Periodic-acid Schiff  $\times 20$ )



**Figure 4:** Photomicrograph showing Actinomyces colonies (Gomori-methanamine silver,  $\times 20$ )

oral cavity and palatine tonsils<sup>4</sup> and are found in 2% -30% of subjects.<sup>3-7</sup> It spreads to contiguous tissues by breakdown of anatomical barrier either by trauma, surgery or due to some other infection. Initially, it forms an abscess inside the tissues of the affected organ. When the abscess ruptures, it

forms a sinus discharging sulphur granules, which are organized aggregates of filaments. Actinomycosis commonly involves cervico-facial, thoracic, abdomino-pelvic regions and central nervous system. It commonly occurs in fourth to sixth decades.<sup>3</sup> The disease in the cervico-facial region is precipitated by several factors like dental caries, periodontal disease and maxillo-facial trauma.

The most common indications for surgery are recurrent tonsillitis.<sup>8</sup> The present patient underwent tonsillectomy as he had recurrent tonsillitis. The current recommended therapy for tonsillar actinomycosis includes 4 weeks of high dose IV penicillin followed by a 3 to 6 month course of oral penicillin, and treatment should be continued even after total resolution of symptoms.<sup>9</sup> Other antimicrobials that have been found to be effective particularly in penicillin-allergic patients include tetracycline, erythromycin and clindamycin.<sup>9</sup>

Diagnosis is difficult as symptoms are often non-specific, pain is rare and only mild fever occurs in over half of the patients. The imaging techniques computed tomography (CT) and magnetic resonance imaging (MRI) usually yield non-specific findings. In view of these non-specific manifestations and imaging findings, the clinical diagnosis of actinomycosis still remains difficult. Even fine-needle aspiration cytology (FNAC) which is a less invasive diagnostic technique compared to incisional biopsy is still dependent on sampling of the representative area.<sup>10</sup> The most accurate diagnosis of actinomycosis is made by isolating Actinomyces species in cultures of clinical specimens. However, the demonstration of actinomycotic granules in exudates or in histological sections of tissues not connected to hollow organs is considered to be strongly supportive of the diagnosis.<sup>9</sup>

Cervico-facial actinomycosis poses diagnostic difficulties and only fewer than 10% of infections are correctly diagnosed.<sup>3</sup> Therefore, surgical excision remains the only method to ascertain the definitive diagnosis, especially in cases presenting

with abscess, patients not responding to antimicrobial therapy or when FNAC is inconclusive.<sup>3</sup>

Some authors favour the possible aetiological role of Actinomycetes in the development of prominent lymphoid hyperplasia and hypertrophy leading, in turn, to obstructive tonsillar hypertrophy whereas others are of the opinion that no such correlation exists.<sup>3,11,12</sup> In elderly patients, massive unilateral tonsillar enlargement due to actinomycosis mimicking neoplasm has been reported.<sup>9,13</sup> Even in children, similar type of presentation can mimic a malignancy.<sup>14</sup> But in our case, it was bilateral enlargement in a young male, thus favouring a reactive process.

Since actinomycosis can mimic other oropharyngeal malignancies, accurate diagnosis of this condition can facilitate institution of appropriate antibiotic therapy. Increased awareness regarding actinomycosis and high degree of suspicion are required while evaluating sub-acute or chronic inflammatory lesions involving soft tissues or internal organs so that an early diagnosis is possible.

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