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Actinomycosis of Tongue: Case Report of An Atypical Presentation

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***Abstract**: Actinomycosis is an infectious disease caused by bacteria of Actinomyces species. Although it most commonly occurs in the cervicofacial region, actinomycosis of tongue is quite rare. We report a patient who presented with a nodular mass on lateral border of tongue, mimicking a neoplasm, which was diagnosed as actinomycosis on histopathological examination.*
***Keywords**: Actinomycosis, bacteria, cervicofacial, nodular, tongue.*

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I. Introduction

Actinomycosis is a chronic bacterial infection of cervicofacial region, thorax or abdomen, caused by Actinomyces species. Actinomyces is an anaerobic or microaerophilic gram-positive bacterium that causes suppurative and granulomatous inflammation resulting in multiple abscesses and sinus tract formations.[1] The organism is endogenous to oral cavity, lower gastrointestinal tract and female genital tract and requires mucosal breakdown to gain entry into the submucosal tissue and to become invasive.[2] Oral and maxillofacial trauma may provide a portal of entry to the organism. The clinical diagnosis of actinomycosis may be challenging as it can mimic benign and malignant neoplasms at clinical presentation. Hence it requires high precision to make correct diagnosis and provide appropriate treatment to the patient. The incidence of actinomycosis of tongue is rare and represents less than 3% of all reported cases.[3]We report a patient who presented with a tumor-like mass on tongue which was diagnosed as actinomycosis after surgical excision.

II. Case Report

A 14 year-old boy presented with an overgrowth on right lateral border of tongue, causing difficulty in speech. The lesion had developed in last 20 days. The patient reported history of tongue bite 1 month back. There was no history of any dental procedure or systemic disease. Oral examination revealed a sessile, nodular mass, soft in consistency and measuring 2x2cm (Fig. 1). It was tender but there was no restriction of the tongue movement. Clinically, it looked like a neoplasm. The neck examination showed no evidence of cervical lymphadenopathy. The mass was excised under local anaesthesia and sent for histopathological examination, which revealed the presence of chronically inflamed fibrous tissue with presence of colonies of Actinomyces in the superficial surface of the tissue (Fig 2, Fig.3). Subsequently, the patient was treated with amoxicillin-clavulanic acid therapy for 2 weeks and kept on regular follow up.

III. Figures

Figure 1: Clinical photograph of the patient showing a nodular mass present on right lateral border of tongue.

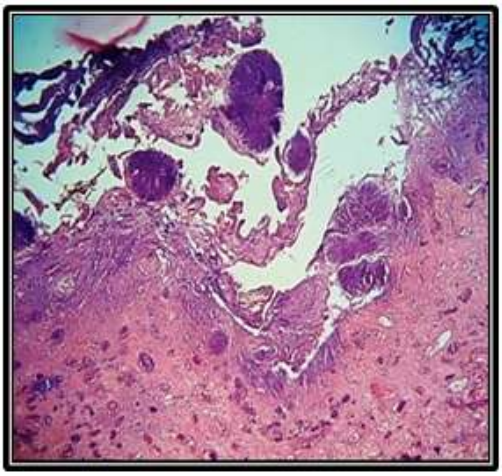

Figure 2: Microscopic picture showing colonies of Actinomyces (H&E stain; X100)

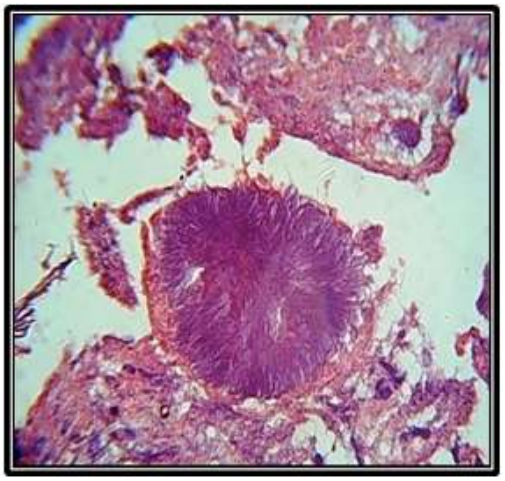

Figure 3: Microscopic picture showing filamentous branched bacteria forming a typical Actinomyces colony (H&E stain; X400)

IV. Discussion

Actinomyces are normal commensals of human oral cavity. Although the primary pathogen is *Actinomyces israelii, A. Propionica, A. Naeslundii, A. Viscosus* and *A. Odontolyticus* are also known to cause infection in humans. *A.bovis* which is known to cause 'lumpy-jaw' in cattle is seldom found to be a pathogen in humans.[4] Actinomyces are gram-positive anaerobic or micro-aerophilic bacteria. They are non-acid fast and show filamentous branched colonies. They are difficult to be recovered from culture due to unavailability of proper culture conditions, low index of suspicion and fastidious nature of the organism.[5] Actinomycosis is classified based on its location as cervicofacial(50-60%), abdominal(25%) and pulmonary(15%).[6] In the cervicofacial region, infection is pre-dominantly of odontogenic origin, resulting from oral and maxillofacial trauma, dental manipulation or dental caries.[7] The main triggering factor of infection is the disruption of the mucosal barrier. The actinomycosis of the oral cavity may chiefly present as a mass, abscess, ulcerative lesion or sinus.[4]

Actinomycois of tongue is known to be rare. The features like its specialized mucosal lining, rich vascular parenchyma, great mobility and self-cleansing by saliva which doesn't allow bacterial adherence and multiplication makes it very resistant to infection. There are mainly two types of actinomycosis infection- acute and chronic. The acute form is of rapid onset with suppuration whereas chronic is slowly progressive form with fibrosis and no suppuration. These chronic types are more likely to be nodular and mimic a neoplasm just like this case.[3]The cases of this disease have been reported on different areas of tongue. The nodular lesions when present on anterior part of tongue usually cause speech problems. The lesions involving the base of the tongue may present with dysphagia, hoarseness of voice, sore throat and progressive dyspnoea and hence are of utmost concern to the otolaryngologist. The regional lymphadenopathy is not quite common until later stages as the bacteria spreads by direct extension, and not through fascial planes or lymphatic drainage.[7] The differential diagnosis of actinomycosis of tongue include other infections(lingual abscess, nocardiosis, botryomycosis) and neoplasms(granular cell tumor, lymphangioma, hemangioma, neuroma, neurilemmoma, sarcoma and metastatic tumors).[8]

Cervicofacial actinomycosis has been referred to as the great masquerader of head and neck as it is difficult to be diagnosed solely on its presentation.[9]The diagnosis can be made by clinical findings, fine needle aspiration cytology or microscopic examination after excision. The definitive diagnosis can be made by culturing the infected material but its low diagnostic yield limits the use of this method and hence, histopathological diagnosis showing presence of Actinomyces colonies or sulphur granules still remains the mainstay in final diagnosis.[10]Recently, a technique using a fluorescent antibody has been described to demonstrate the presence of the bacteria.[11] After the diagnosis is established, the preferred treatment of actinomycosis consists of prolonged administration of penicillin. The excision of lesion at any early stage may have a positive effect. Sometimes recurrences may also be seen after cessation of antibiotics.[12]

V. Conclusion

Actinomycosis of tongue may mimic benign and malignant neoplasms clinically hence it must be considered as one of the differential diagnosis. It may be challenging for the clinician to give accurate diagnosis based on the clinical presentation only. The microscopic examination may help in reaching the right diagnosis so that the antibiotic therapy may be started timely for early resolution of infection.

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