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CASE REPORT

Atypical presentation of Scalp Actinomycosis as a frontal soft tissue swelling: Case report and review of literature

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Introduction

Actinomycosis of scalp is a uncommon soft tissue infection, rarely affecting the scalp. Only a few cases have been published, with even fewer known to be spontaneous. Actinomyces are anaerobic, filamentous, gram-positive bacteria presenting with subacute or chronic swelling with suppuration, sinuses and/or abscess. Most known forms are cervico-facial, pulmo-thoracic followed by abdomino-pelvic making actinomycosis of scalp a diagnostic dilemma and is confused with carcinoma or tuberculosis. Author reports a rare presentation of scalp swelling associated with ptosis which was mistaken for neoplasm. This case is of significance due to spontaneous non traumatic scalp infection with actinomyces and also highlights the importance of surgical excision and histopathological diagnosis since only handful of spontaneous case present in literature.

Case report

A 52 year old male referred to Neurosurgery Department with history of inability to lift his left eye lid and scalp swelling over the left supra orbital region. There were no features of infection, sinuses or pus discharge and was painless. Significantly there was no preceding trauma or note-worthy past history like diabetes or immunosuppression.

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Examination revealed no compelling neurological deficit. Physical examination disclosed a firm, non-tender,non mobile, non fluctuant, nodular swelling 7cm *7 cm in size in the left supra orbital region associated with ptosis of left eyelid.The swelling was non pulsatile with no evidence of induration or bruit. Routine laboratory tests were within normal limits. CT scan was done which was suggestive of a soft tissue lesion of 6.2 x 1.4 x 4.8 cms in the subcutaneous plane of left frontal and peri-orbital region (Figure 1).

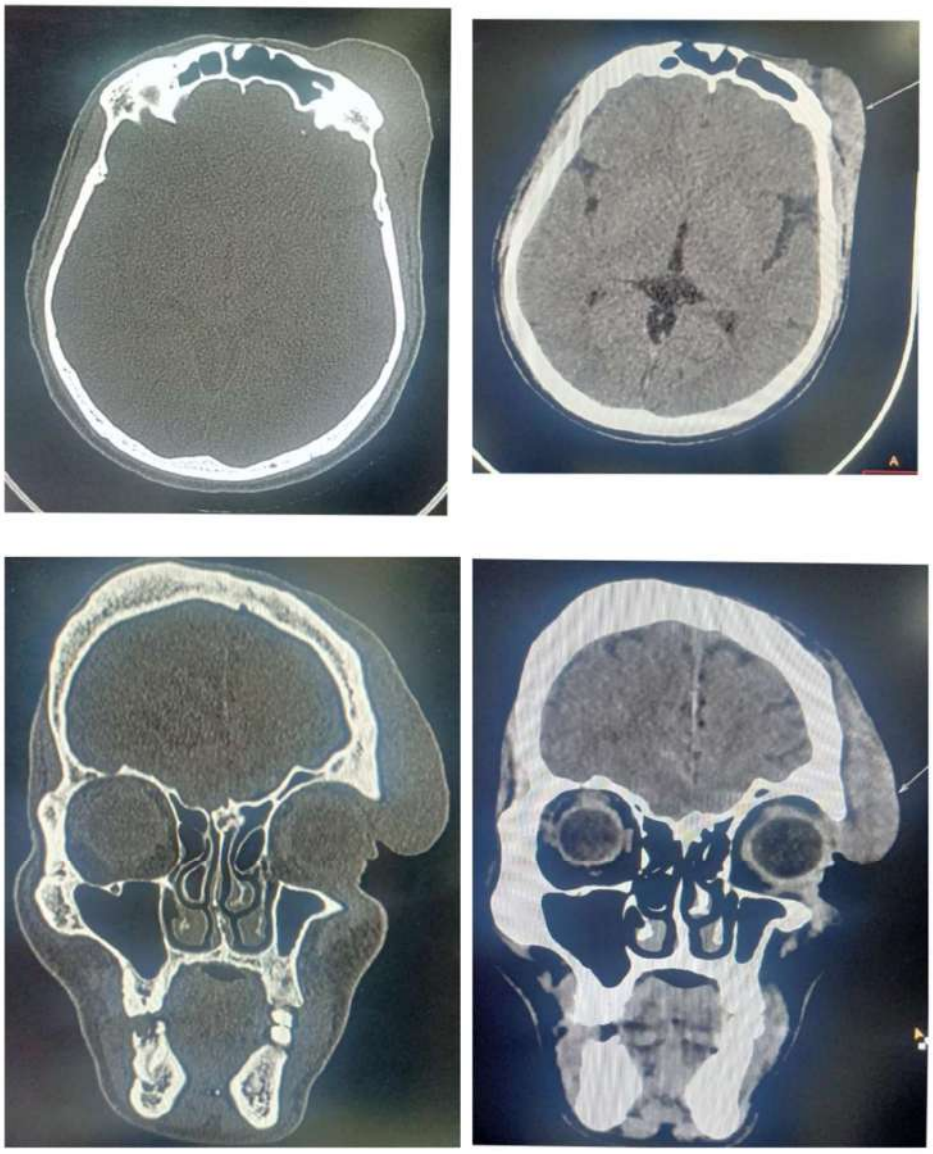

Figure 1: CT scan of brain showing the soft tissue swelling on left frontal and periorbital region.

Surgical excision of the mass was done (Fig 2C) and histopathology revealed a fibromuscular and fibro-collagenous tissue with multiple foci of suppurative abscess like dense inflammation and basophilic variable sized granules of organism with delicate radially arranged branching filaments in the centre of abscess (Fig 2A). The granules show eosinophilic Splendor-Hoeppli reaction surrounding the basophilic radially arranged filaments (Fig 2B). The granules were negative for gram, ZN or PAS staining. Overall features indicates infective pathology with chronic and suppurative inflammatory reaction.

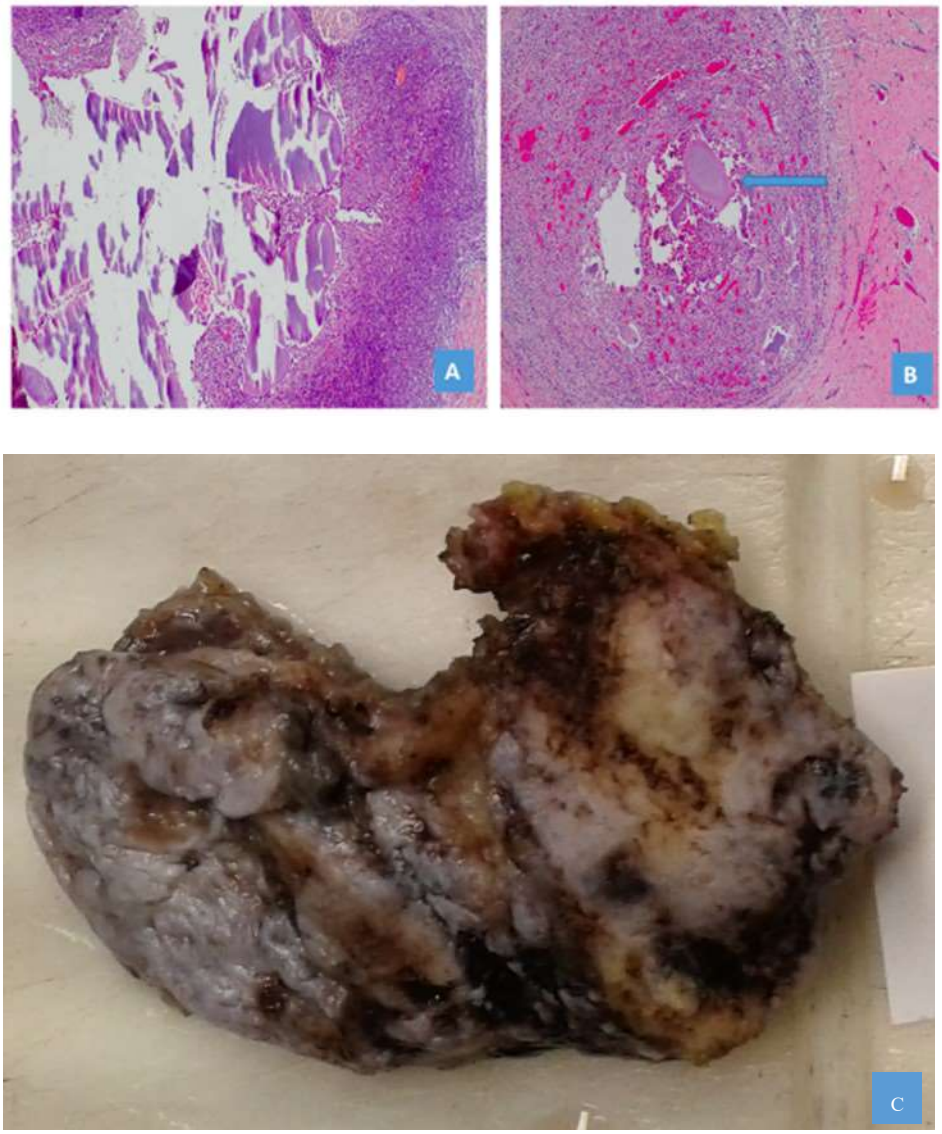

Figure 2. Section showing large granule of actinomyces with radially arranged branching basophilic filaments in the centre of suppurative inflammatory reaction(A,H&E,20X);The central granule with eosinophilic Splendor-Hoeppli reaction(B,H&E,10X);Excised specimen (C)

The morphological differential diagnosis of Actinomycosis or Botryomycosis were considered.It stated an infective pathology with chronic inflammatory reaction with differential diagnosis of Actinomycosis or Botryomycosis. The patient was further treated with regimen of amoxicillin clavulanate 625 mg TDS and doxycycline 100mg BD for 6 months and on routine follow up, there was no evidence of recurrence.

Discussion

In 19th century, the first case of human actinomyces [1] was described and Actinomyces is a gram positive, non-spore forming, pleomorphic, microaerophilic bacilli, earlier misclassified as fungi, habitually found as harmless commensals within the oral and gastrointestinal tract [2,3]. The prevailing species of Actinomyces instigating actinomycosis are Actinomyces israelii, Actinomyces naeslundii, Actinomyces odontolyticus, Actinomyces viscous and Actinomyces meyeri [4].

Actinomycosis is an endogenous disease with no pathogenic species ever isolated from environment and there is also no evidence of human to human transmission [4]. It has association with preceding trauma, tissue ischemia and oral cutaneous contact [5].

Most commonly known forms are cervicofacial 50%, pulmothoracic 30% followed by abdomino pelvic 20% [6]. Less than 4% cranial actinomycosis cases have been reported [7] and almost all of them have been preceded by trauma, making this case fascinating.

Primary cutaneous actinomycosis is an unusual entity owing to low pathogenicity rendering them incapable of penetrating healthy tissue. It is characterized by chronic, slow progressing swelling allied with abscess formation, sinus tracts and tissue fibrosis, mimicking carcinoma or granulomatous disease like tuberculosis [8]. Actinomycosis in the scalp is an significant entity since this lesion over years may involve clavarium [9].

In our case, patient presented with slow growing swelling without any abscess formation or any evidence of sinus tract over the swelling. Histopathology confirmation is mandatory to rule out malignancy or chronic granulomatous disease such as tuberculosis. On HPE,confirmation of sulphur granules lead to diagnosis of actinomycosis. However it is seen only in 25% of cases and can be easily missed in a small biopsy [4].

The treatment of cutaneous actinomycosis involves high dose intravenous antibiotics for 2-6 weeks followed by oral antibiotics for 6-12 months [10].

Surgical resection is required especially in large lesion for better cosmetic outcome and excision biopsy useful in diagnostic dilemma by establishing histopathological confirmation.

In our case, excision provided tissue diagnosis, cosmetically better results and patient was discharged on long term antibiotics.

Conclusion

Scalp Actinomyces is a rare entity which is often misdiagnosed as Neoplasm. Hence it has to be considered in differential diagnosis whenever there is a case of scalp soft tissue lesion and has to be confirmed with histopathological examination and prevent reoccurence by the judicial use of antibiotics.

Ethics declarations

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Conflict of interest

The authors declare that they have no competing interests.

Ethics approval, Consent to participate, Consent to publish, Availability of data and material, Code availability

Not applicable.

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