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Primary cutaneous actinomycosis: A case report

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Abstract
Actinomycosis caused by *Actinomyces* spp. is a chronic and suppurative infection caused by an endogenous gram positive bacterium. We reported a case of primary cutaneous Actinomycosis of back in 48 years old male patient.

Keywords: Actinomycosis, bacterium, gram positive

Introduction
Actinomycosis caused by *Actinomyces* spp. is a chronic and suppurative infection caused by an endogenous gram positive bacterium. The unusual sites of infection are the head and neck, thorax and abdomen and are almost always endogenous in origin. Primary cutaneous actinomycosis is very rare and is usually associated with external trauma and local ischemia [1].
Actinomycosis is an anaerobic, gram positive bacterial infection, seen in different parts of the body. Actinomycosis is characterized by chronic and progressive suppurative inflammation, commonly seen on the neck, thorax, and abdomen. Five main clinical types are cervicofacial (60%), thoracic (20%), abdominal (15%), pelvic, and primary cutaneous, the last being rare and having a variable manifestation [2].
Actinomycosis is caused in humans by *Actinomyces israelii* and in animals by *A. bovis*, A. *naeslundii* and *A. viscosus* have been documented [3]. The infection is commonly seen in tropical countries and characterized by chronic and progressive suppurative inflammation, typically presenting as cervicofacial, thorax and abdomen lesions. Primary cutaneous actinomycosis is a rare entity and the diagnosis requires a high index of suspicion. Primary disease of extremities is uncommon and mostly has an association with trauma and bites [4].
We recorded a case reported a case of primary cutaneous actinomycosis of back in a 46-year-old male patient.

Case report
A 48-year-old male patient reported to Dermatology department with the chief complaint of nodules on back since 2 months. History revealed that nodule started 2 months back as small size which gradually increased to attain the present size. There was ulceration along the nodule. It was painful firm immobile nodule. There was history of mild intermittent fever.
The lesion over the back developed multiple swellings which subsequently burst to discharge pus. Some of the openings appeared newly while older ones closed down. The patient had no history of trauma, human or insect bite. There was no history of any systemic illness or weight loss. Past medical history was non- contributory. There was no significant family history.
General physical examination revealed that patient was well conscious and oriented to time, place and person. All vital were within normal range. There was mild pallor. Liver, spleen and lymph nodes were not palpable. Cardiovascular system, respiratory system and central nervous system (CNS) showed no abnormalities.
On inspection, the skin was scarred with papules and nodules. Multiple discharging sinuses draining sero-sanguinous fluid were scattered all over the lesion. On palpation the lesion was fixed to the underlying tissue and the overlying skin was adherent. There were some satellite nodules which were woody hard in consistency and mostly non tender.

Patient underwent blood investigation which revealed normal findings. Chest X-ray, electrocardiogram and ultrasonography of the abdomen were within normal limits. Histopathological examination of lesion biopsy revealed-hyperkeratosis and acanthosis in the epidermis. Mid dermis showed infiltration with multiple microabscesses. Occasional sulphur granules showing typical sun ray appearance were present giving the posibility of Actinomycosis. The pus collected from the discharging sinuses was straw coloured, odourless and serous in consistency. Culture in blood agar showed growth of commensal flora of the skin. On anaerobic incubation, typical hard molar tooth appearance colonies were seen after 72 hours. Gram stainined smear from colony revealed multiple branching gram positive filamentous bacilli suggestive of Actinomyces species.

The patient was given injection Benzyl penicillin eight million units four times daily and tablet Cotrimoxazole twice daily for 20 days. Patient was recalled regularly for 2 months. Presently there was no induration, discharge or appearance of fresh lesions.

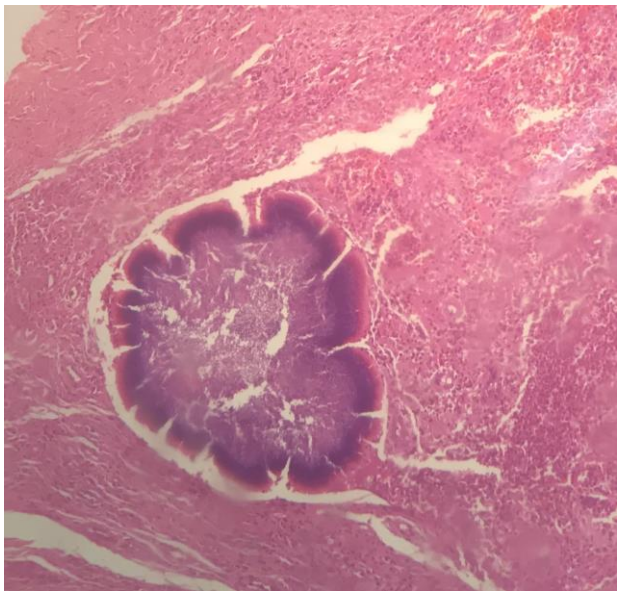

Fig 1: Histopathologic photograph showing ray fungus

Discussion

Actinomycosis is a rare sub-acute or chronic suppurative and granulomatous bacterial infection caused by facultative pathogenic commensals belonging to Actinobacteria class. The most commonly encountered organisms in the humans are *Actinomyces israelii* (*A. israelii*) and *A. gerencseriae*. Nevertheless, human infections due to less common species like *A. bovis*, *A. naeslundi*, *A. odontolyticus*, *A. meyeri*, *A. turicensis* and *A. viscosus* have also been documented [5]. This infection tends to develop at cervicofacial, thoracic, abdomino-pelvic regions of the body because of the exclusively endogenous habitat of these bacteria and it typically spreads contiguously. However, hematogenous and rarely lymphatic dissemination to distant organs can occur at any stage of this infection. Involvement of other body parts like central nervous system, bones, joints, muscle tissues and skin is uncommon and is usually secondary to a lesion in one or the other of the above common sites. Primary cutaneous actinomycosis of an extremity is extremely rare and is generally associated with direct implantation of the organism on the exposed skin after trauma [6].

Primary cutaneous actinomycosis is a rare entity and requires a high index of suspicion. Primary disease of the extremities is uncommon because of the exclusive endogenous habitat of the causative organism. Most of the cases reported give a clear history of trauma, either human bite or a perforating injury with contamination from outside. Haematogenous spread has also been suggested [7].

Numerous risk factors have been implicated for acquiring this infection like poor oral hygiene with dental decay, primary infections including pharyngitis, otitis media, urinary tract infections, pneumonia, cholecystitis, urinary tract infections, cholecystitis and dental caries, malnutrition, impaired immunity due to immunosuppressive drugs, chronic conditions such as diabetes and local tissue damage caused by trauma, insect/animal bite, recent surgery or irradiation. Other important factors are middle-aged age group people especially men, inhabitants of tropical countries, occupation such as of agricultural workers, people who walk barefoot, environmental factors like soil, rainfall, thorny vegetations [8].

Conclusion

Primary cutaneous actinomycosis of the lower extremity is an uncommon clinical entity. However, the careful evaluation of clinic lesion and histopathological examination may be useful in reaching the diagnosis.

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