

Actinomycosis of the Accessory Breast Treated with Cotrimoxazole

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Summary

Actinomycosis is a chronic suppurative granulomatous disease caused by the filamentous bacteria, *Actinomyces israelii*, which was once thought to be a fungus. It is a Gram-positive, aerobic or microaerophilic, non acid-fast hyphal organism which fragments into coccoid or bacillary forms and, unlike the fungus, does not form conidia¹. Accessory breast tissue usually occurs along the milk lines, frequently in the axilla and rarely in the thighs². Actinomycosis of the breast is very uncommon and we report the case of a multiparous woman who had a painful lump in the axilla which, on histopathologic examination, showed actinomycosis within the accessory breast tissue.

Key words: Actinomycosis, accessory breast, cotrimoxazole.

Case Report

A 36 year old Malay nurse from a Primary Health Centre presented with a 1 month history of a deep discharging sinus in the right axilla. An excision biopsy was done elsewhere for a lump in the axilla of 2 months duration, which was 4 cm long, soft in consistency and tender, especially during menstruation. Post-operatively, the wound did not heal and was exuding purulent discharge. There was no history of recent dental extraction, tonsillitis or long-standing respiratory problems.

On examination, the abdomen and both the breasts were clinically normal. Microscopically, 'granules' were identified from the Gram stain of the sinus discharge. There was no abnormality detected in her chest radiograph.

Macroscopically, the excised specimen was reported to exhibit a fatty tissue of yellowish surface with a necrotic area beneath the skin. Histological examination showed fibrofatty tissue with breast lobules and ducts; areas made up of granulation tissue heavily infiltrated by acute and chronic inflammatory cells; a collection of foreign body giant cells and a colony resembling actinomyces (Figs 1 & 2). The 'sulphur granule', irregularly lobulated colony of filamentous bacteria, was homogenous and basophilic. On staining with special stain, it showed central degeneration; a mass of entangled radiating, branching, black filaments ('ray fungus'), some of which ended in a club at the periphery (Fig 3). The patient was treated with cotrimoxazole (trimethoprim 80 mg, sulphamethoxazole 400 mg) 2 tablets twice daily, with local antiseptic dressing. Within 2 weeks the discharge had stopped and by 5 weeks the sinus had closed. Treatment was continued up to 3 months and haematological parameters were normal.

Discussion

Actinomyces israelii is often found as a saprophyte in the tonsillar crypts and carious teeth. What causes it to be an invasive pathogen is not known; but immunosuppression and breakdown of tissue barrier may play a role. Although any organ can be affected, there are 3 main clinical types, namely, cervicofacial, thoracic and



Fig 1: Breast lobules and ducts. Note the colony of actinomycetes at bottom left (H&E stain x 40).

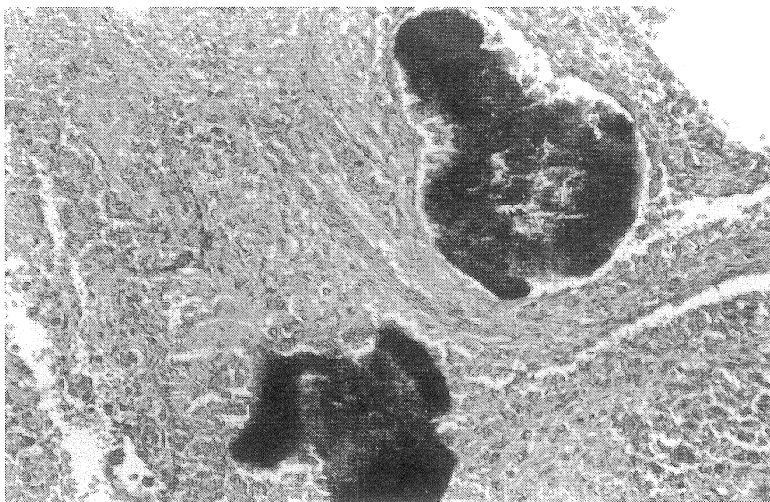


Fig 2: 'Sulphur granules' of *Actinomyces israelii* (Methanamine silver stain x 100).

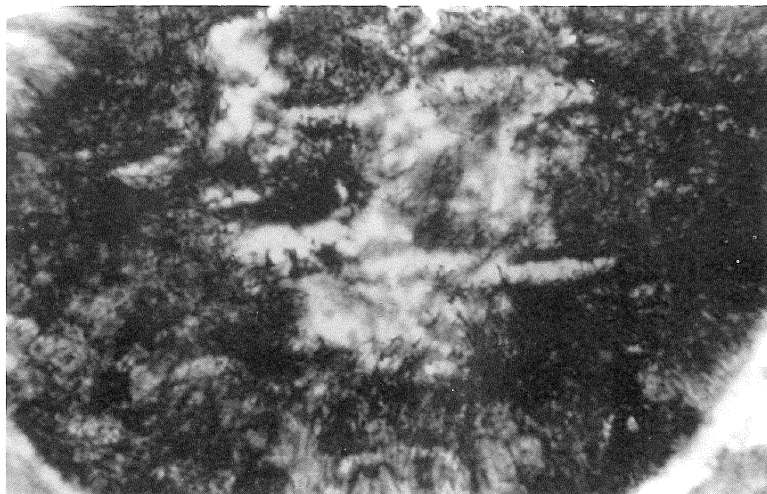


Fig 3: Branching filaments of actinomycetes (Methanamine silver stain x 400).

abdominal. *A. israelii* very rarely causes actinomycosis of the hands and feet which is due to the filamentous bacteriae, *Nocardia brasiliensis* and *Streptomyces maduras*. The breast can be affected primarily through the nipple or secondarily from the diseased lung through the thoracic cage. The cause of the discharging axillary sinus, in our patient, was actinomycosis, but we could not determine the most likely portal of entry of the organism. Nonetheless, blood-borne infection may be a possibility. The taxonomic distinction of actinomycosis as a bacteria has therapeutic significance because it responds to penicillin and sulphonamides but not to the antifungals³. The causative organism was not completely removed from our case during excision. Penicillin in high dosage is the drug of choice for all forms of actinomycosis. We found cotrimoxazole equally effective when administered for a prolonged duration. Whether this drug is effective for other forms of the disease depends upon the anatomy involved, penetrability of the drug, sensitivity of the organism and the presence of secondary pathogens. Early detection may render this disease medically treatable and prevent complications that warrant surgical intervention. The duration of therapy depends upon the clinical response and it should be administered under regular monitoring of the patient for possible adverse effects.

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References

1. Frey D, Oldfield R, Bridger RC. A Colour Atlas of Pathogenic Fungi. London: Wolfe Medical Publications Ltd, 1985.
2. Sloane JP. Biopsy Pathology of the Breast. London: Chapman and Hall, 1985.
3. Welsh O. Mycetoma: Current Concepts in Treatment. Int J Dermatol 1991;30 : 387-98.