Nocardiosis
Two Case Reports

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SUMMARY
Two cases of Nocardiosis involving unusual sites are reported. The
diagnostic value of the appearance of the organism in section is emphasised.
The remarkable tolerance to sulphonamide drugs is noted.

Nocardiosis is an acute or chronic suppurative disease, caused by species
of the aerobic actinomycete Nocardia. This condition was first described by
Nocard in 1883, in cattle. Different strains of the same group affecting man
have been described by many authors subsequently. The common human
pathogens are Nocardia asteroides, N. brasiliensis, N. madurae (Streptomyces
madurae) and N. pellitieri (Streptomyces pelletieri).

Nocardia has been isolated from soil and the mode of infection is either by
inhalation or direct implantation in the skin via abrasions and wounds. The
common sites of involvement are the distal extremities, especially the lower
limbs.

CASE REPORTS

Case 1.—A 22-year-old single female farm labourer, from a place about 60
miles from Madurai, was admitted to the dermatological ward of the Government
General Hospital, Madras, on 22nd April, 1970, with a history of multiple abscesses
and ulcers over the left upper arm, shoulder and left side of the back for four years.

The lesion started as a small papule on the extensor aspect of the left upper
arm and progressed gradually to form an abscess. This, on breaking down, gave
rise to multiple puckered discharging sinuses. Subsequently, similar lesions
developed over the whole of the left upper arm, shoulder and left side of the back.
She was treated at a local hospital with injections for four months, followed by
excision and skin grafting two and a half years ago. As the graft did not take
and the lesions progressed steadily, the patient was referred to us for diagnosis
and treatment. There was no history of trauma prior to the onset of these
lesions.

Past history and family history were non-contributory.

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Figure 1: Case 1. Nocardiosis brasiliensis before therapy.

Figure 2: Case 1. Nocardiosis brasiliensis before therapy.
On examination, the patient was a well-built, healthy-looking woman with no clinical evidence of any systemic disease. Her skin showed multiple raised soft granulomatous ulcers, nodules and sinuses over the left upper arm, axilla, anterior aspect of the left shoulder and the scapular area (Figures 1 and 2). The soft granulomatous ulcers showed heavy crusting with a tendency to bleed easily. These lesions were not attached to the deeper structures and there was no regional lymph node enlargement. Movements at the left elbow and shoulder were restricted.

A provisional diagnosis of deep mycosis was made. The routine blood count was within normal limits. An X-ray of the chest was clear. An X-ray of the left shoulder girdle and elbow showed no bony involvement. Examination of the discharge from a freshly broken lesion revealed very small creamish-white granules which, on staining, showed Gram-positive fine branching filaments of bacterial dimensions. Culture of the granules in Sabouraud's medium at room temperature showed a slow-growing brownish-white raised colony with a mammillated surface. Smears from the culture showed fine branching filaments which were Gram-positive as well as acid-fast. Biopsy of the lesion showed an actinomycotic granuloma in the dermis (Figure 3). The histological morphology was that of *Nocardia brasiliensis*.

**Treatment and Progress:** The patient was started on sulphadiazine 4 gm. daily in divided doses. The lesions have been steadily regressing (Figures 4 and 5) over the past year.
Case 2.—A 45-year-old male farm labourer from the Salem District was admitted to the Skin Department in October, 1970. He gave a two-year history of multiple nodules and abscesses involving the right thigh, gluteal region and right lower abdominal wall. He was treated at the local hospital with antituberculous drugs for three months, but the lesions failed to respond.

Examination revealed a thinly-built healthy-looking adult male with multiple papules, nodules and sinuses involving the above-mentioned areas. Pitting oedema was present (Figure 6). Systemic examination did not reveal any abnormality.
A clinical diagnosis of mycetoma was made. Discharge from the abscesses showed red granules which on a culture in Sabouraud's medium at room temperature produced a slow-growing pink colony. Smears from the culture showed Gram-positive branching filaments which were not acid-fast. The organism was identified as *Nocardia pellitieri* (*Streptomyces pellitieri*). A skin biopsy showed an actinomycotic granuloma deep in the dermis. The histological morphology was that of *Nocardia pellitieri*. Other investigations were non-contributory. An X-ray of the pelvic area and right femur showed no bony involvement.

*Treatment:* The patient was started on sulphadiazine 6 gm. daily in divided doses. He is already showing improvement with this. The girth of the thigh has been reduced by 1 in. in four months.

**DISCUSSION**

The term mycetoma literally means a fungal tumour. The organisms producing this clinical picture belong mainly to three groups: the bacterial dimension *Nocardia*, the classical filamentous fungi, and the anaerobic actinomycotic group. It is important to identify the type to enable effective therapy to be carried out. In this report we record two cases of Nocardiosis occurring in unusual sites such as the shoulder girdle and thigh. The infection is confined to the soft tissues, sparing the bones and lungs. The general health of the patients remained good throughout. In both cases the identity of the organism was based on the nature of the granules, the cultural characteristics and the appearance of the organism in the histological sections. Both cases, the first *Nocardia brasiliensis* and the second *Nocardia pellitieri*, have responded to oral sulphadiazine therapy. This drug has to be given for a considerable time, e.g. one to two years. The tolerance to sulphonamides for such long periods is another interesting aspect worth remembering.
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REFERENCES

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