

SPOROTRICHOSIS IN MADRAS

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Summary

This is the first case report of sporotrichosis from Madras. The patient, a 32 year old male, was admitted as a case of mycetoma left foot. The diagnosis of sporotrichosis was made by isolation of *Sporotrichum schenckii* in pure culture from the purulent material of the discharging lesion and demonstration of its pathogenicity to mice, rat and chick embryos. Histopathological examination of the biopsy material revealed the presence of microabscesses with acidophilic, asteroid bodies and no fungi.

Introduction

Sporotrichosis, caused by *Sporotrichum schenckii* is a chronic, progressive infection characterized by the development of nodular lesions in the lymph nodes, skin or subcutaneous tissues, which ultimately soften and breakdown forming indolent ulcers.

Schenck¹, in 1898 reported the first case of sporotrichosis from Baltimore. Since then, a number of reports were available from all over the world. In a tropical country like India, contrary to expectation, the reported incidence of sporotrichosis is quite few. So far, only about 19 cases of subcutaneous sporotrichosis have been reported from our country and almost all of them were from Assam and its adjacent areas in eastern part of India. The first case of sporotrichosis was reported by Ghosh² in 1932, where the causative

agent was *S. beurmanni*. Between 1932 and 1947, 12 cases were clinically diagnosed at the Calcutta School of Tropical Medicine. Besides, Panja et al³ reported a case from the same place caused by *S. tropicale*. Dey et al⁴ in 1958 reported two cases based on histopathology, however, out of the two cases he had isolated the causative organism, *S. Schenckii* from one case. Based on histopathological examination alone Dharampal and Singh⁵ diagnosed and reported one case. Subsequently the case reports of Banerjee and Dutta⁶, Banerjee et al⁷ and Maya Sanyal et al⁸ were all confirmed both by culture and animal pathogenicity.

This is the first case report of sporotrichosis from Madras and probably the first from the whole of South India, where the diagnosis was made by isolation of *S. Schenckii* in pure culture from the purulent material of the discharging lesion and demonstration of its pathogenicity to mice, rats and chick embryos.

Case Report

A 32 years old male, a resident of the Madras city, was admitted with a

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complaint of severe pain and swelling of the left foot of one year duration. It started as a small nodule, a few months after having been traumatized by a thorn. Gradually multiple nodules appeared in the neighbourhood, ulcerating and discharging seropurulent material.

Clinical examination revealed the whole of the left foot to be swollen. Multiple, fungating, papillomatous lesions were present (Fig. 1 page No. 144) without evidence any associated lymphatic spread.

X-rays: Roentgenogram of the left foot revealed a soft tissue shadow with bony erosion. Chest X-ray was normal.

Laboratory examination: Haemogram, Erythrocyte sedimentation rate, urine analysis, Blood sugar and Blood urea were within normal range.

Histopathological examination of the biopsy revealed the presence of microabscesses with acidophilic, asteroid bodies (Fig. 2 page No. 144). No fungal elements were seen.

Mycological Investigation

Direct examination of the purulent material revealed no fungal elements.

Culture: The material was inoculated on Sabouraud's dextrose agar slants with and without antibiotics and incubated at 26°C and at 37°C respectively. Growth was visible in a few days time. The colonies were moderately fast growing, white and fluffy, darkening a little with age and without any pigmentation on the reverse side (Fig. 3 page No. 144). Culture mount revealed delicate (2 μ in width) septate hyphae and oval to globose conidia.

Slide culture showed delicate branching septate hyphae bearing oval to globose conidia laterally or in groups

from the ends of conidiophores, (Fig. 4 page No. 144) characteristic of *S. Schenckii*.

Conversion into yeast forms: No growth was obtained at 37°C. Repeated subcultures on brain-heart infusion glucose blood agar at 37°C failed to produce any growth. *S. Schenckii* isolated in the present case was exceptional, in that it was not possible to obtain the yeast phase in culture.

Animal Pathogenicity: A heavy saline suspension of the filamentous culture was inoculated intraperitoneally into male white mice and rats. The animals died in 4 to 6 weeks time and the gram-positive, round, oval or cigar shaped yeast cells were demonstrated in the peritoneal exudate. (Fig. 5 page No. 145) *S. Schenckii* was recovered in pure culture from the pus. Histopathological examination of the testis and epididymus showed evidence of inflammatory reaction with numerous gram-positive, oval bodies in sections stained by Brown and Brenn's modification of Gram's stain (Fig. 6 page No. 145). The suspension was also inoculated intramuscularly into the hind leg of the mice which resulted in the formation of local abscesses breaking down to discharge pus which contained numerous round or oval yeast cells typical of *S. Schenckii*.

Inoculation of the suspension into the yolk sac of 7 day old hen's eggs, resulted in the death of the embryos in about a week's time. Round or oval yeast cells were also demonstrated in the yolk sac and the organisms were recovered in pure culture and sections of the yolk sac stained by Gomori-Grocott's methenamine silver stain revealed the characteristic round or oval yeast cells - the tissue phase of the organism *S. Schenckii*.

Treatment: Since the patient was clinically diagnosed as a case of mycetoma and as he could not tolerate the

severe pain any longer and no improvement was obtained even after prolonged antibiotic therapy and surgical excision with plastic repair, below-knee amputation was carried out before the mycological diagnosis of sporotrichosis could be made.

Discussion

Although the patient was admitted as a case of mycetoma foot, the diagnosis of sporotrichosis was made here by isolation of *S. Schenckii* in pure culture from the purulent material of the discharging lesions and establishment of its pathogenicity to mice, rats and chick embryos. The success in diagnosis of sporotrichosis lies in proof of isolation of *S. Schenckii*, although histopathological features of the present case showed the presence of micro-abscesses with asteroid bodies.

The *S. Schenckii* isolated in this case is peculiar, in that it was not possible to obtain the yeast phase even after repeated subcultures under appropriate conditions. The yeast forms were observed only in the animal tissue. Staib et al⁹ in a study of the pathogenicity of 16 strains of *S. Schenckii* from human and natural sources, reported 12 strains to be pathogenic to animals by both intramuscular and intraperitoneal routes. Of the 12 pathogenic strains, they had one strain which produced little or no growth at 37° C and possessed low virulence when compared with the rest. Mariat¹⁰ reported one strain isolated from Paris air which was unable to grow when first isolated at 37° C although he was successful in obtaining a variant of that strain growing at 37° C later on.

This being the first case report of sporotrichosis from Madras and probably the first from the whole of South India, we are reporting the case here so as to increase the awareness of the fact that favourable conditions do exist in different parts of our country for the

growth of *S. Schenckii* – a saprophyte of the soil and plants. Hence sporotrichosis should be considered in the differential diagnosis of non healing, ulcerative papulonodular lesions, especially when the condition is amenable to therapy with potassium iodide, before resorting to any drastic surgery.

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REFERENCES

1. Schenck BR : On refractory subcutaneous abscesses caused by a fungus possibly related to the sporotricha, Bull John's Hopkins Hosp, 9 : 286, 1898.
2. Ghosh LM : An unusual case of sporotrichosis, Ind Med Gaz, 67 : 570, 1932.
3. Panja D, Dey NC and Ghosh LM : Sporotrichosis of the skin in India, Ind Med Gaz, 82 : 200, 1947.
4. Dey NC, Saikia T and Majumdar CT : Sporotrichosis in Assam, Ind J Dermat, 33 : 103, 1958.
5. Dharampal and Singh G : Sporotrichosis Association activities, Ind J Derm Vener, 28 : 106, 1962.
6. Banerjee BN and Dutta AK : Proceedings of the clinical meeting of the Dermatological Society, India, Ind J Dermat, 12 : 68 : 1967.
7. Banerjee AK, Basu N, Sur Roy Chowdhury D et al : Sporotrichosis, Bull Cal Sch Trop Med, 19 : 56, 1971.
8. Maya Sanyal, Basu N, Thammayya A, et al : Subcutaneous sporotrichosis in India, Ind J Derm Vener, 39 : 88, 1973.
9. Staib F, Randhawa HS and Blisse A : Observations on experimental sporotrichosis of the muscle, A Med Mikrobiol Parasitol, 221 : 250, 1972.
10. Mariat F : The epidemiology of the mycosis : Some comments in relation to a particular case of sporotrichosis, Systemic Mycoses, A CIBA foundation symposium, Edited by Wolstenholme GEW and Porter Ruth, J and A Churchill Ltd, London, 1968, p 144.