

## SPOROTRICHOSIS (A Case Report)

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### Summary

A case of subcutaneous sporotrichosis in the upper limb of an Indian male has been presented. Diagnosis of the disease was confirmed by isolation of fungus, *Sporotrichum schenckii*, on two occasions from the same lesion followed by a positive animal pathogenicity test. The patient responded well to oral potassium iodide therapy with complete cure.

Sporotrichosis, a chronic fungal disease caused by *Sporotrichum schenckii*, is world wide in prevalence in the tropical and subtropical regions. The reports of sporotrichosis from India, a tropical country too, are few. Most of these reports are from Bengal and Assam<sup>1-5</sup>. Some of them had been diagnosed on clinical features while in others the diagnosis was confirmed by isolation of the fungus and animal pathogenicity test<sup>1,3,5</sup>. Dharampal and Singh<sup>7</sup> reported one case based on histology. To this short series of about 20 cases during a period of 41 years one more case is being included.

### Case report

A 26 years old male was seen in the skin department of Military Hospital with a history of multiple ulcers on the left wrist and forearm for the past 5 months. It first started as a nodular swelling, firm and painless, on the outer side of the left wrist. After two months, the nodule broke down resulting in a small ulcer. Gradually more nodules appeared on the wrist

and the dorsal surface of the lower half of the left forearm which also burst to form similar ulcer.

The patient had been given treatment with a course of penicillin and tetracyclin but without any improvement.

He was a fairly well built individual in good general health. The disease was confined to the left wrist and left forearm. The wrist showed superficial ulcers. There was some thick slough in the centre of ulcers. No frank discharge was seen or could be expressed on pressure. Margins of the ulcers were indurated. Similar ulcers were found distributed on the lower half of forearm on the dorsal surface, more or less in line with ulcer on the wrist. No lymph glands were palpable at the elbow or axilla.

On enquiring into the history, it was noted that he was engaged in looking after the mules. No relevant history could be obtained.

### Mycology

A pus swab was received for fungal smear and culture. There was little material on the swab. Direct smear examination showed some polymorphonuclear cells and few bacteria but no

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fungal cell could be demonstrated by Gram staining, 20% potassium hydroxide, Giemsa and P. A. S. staining. Direct FAT was not done due to lack of specific antisera. Culture on Sabouraud's dextrose agar at 22°C grew greyish black moist raised colony which turned jet black in 12 days. The colony was compact, raised, convex and folded. The medium also turned first greyish black and later black (Fig. 1 Page No. 109). Lactophenol cotton blue mount of the colony revealed fine septate hyphae, 1-2  $\mu$  in diameter, and large numbers of pale and dark coloured conidia which were spherical (approximately 2-4  $\mu$  in diameter) and pear shaped with one end sharply pointed (approximately 3-4  $\mu$  long x 1-2  $\mu$  wide). Slide culture mount (Fig. 2 Page No. 109) revealed the presence of the same thin hyphae bearing large number of the round to pearshaped lateral sessile conidia. The typical condiophores and conidia arrangement of *Sporotrichum* species was clearly seen. Sabouraud's dextrose agar, both with and without blood incubated at 37°C, remained sterile for 3 weeks.

Another sample of pus received 3 days after the first sample also grew similar dark coloured *Sporotrichum* species, thus confirming it to be the etiological agent of the lesions.

#### Animal pathogenicity

Adult white mice weighing 30-35 gms were used for the test. They were inoculated with a thick ground suspension of the isolate by intraperitoneal and intratesticular routes. The inoculum for intraperitoneal route was given as a mixture in sterile 5% hog gastric mucin taking 0.5 ml of heavy suspension of the fungus in saline and 0.5 ml of sterile 5% Hog mucin. The mice did not die but was sacrificed after 15 days. It showed a small abscess in the spleen. 0.2 ml. of the thick suspension of fungus in saline was given intratesticularly

to another mouse which died after 1 month with an abscess involving both lobes of tests and multiple abscesses along the whole length of its tail (Fig. 3 Page No. 109).

Smear from all the abscesses by Gram stain revealed large numbers of rather large sized gram positive budding yeast cells, measuring about 3-6  $\mu$  in diameter (Fig. 4 Page No. 109). They were easily detectable even under high power magnification (magn. X 400). Majority of the yeast cells were spherical but some were elongated (approx. 5-8 x 2-3  $\mu$ ). Culture from all these abscesses grew the same dark coloured fungus i. e. *Sporotrichum schenckii* (Fig. 1 Page No. 109). Thus a diagnosis of Sporotrichosis with pathogenic *Sporotrichum* species was confirmed.

Animal pathogenicity was also confirmed at A. I. I. M. S., New Delhi by the kind permission of Prof. L. N. Mohapatra.

#### Treatment

The patient was given oral potassium iodide drops on the basis of clinical suspicion. The ulcers started regressing within a period of 2 weeks and the patient was discharged while still on potassium iodide therapy.

Follow up after 8 weeks showed that the ulcers had completely healed. No other antifungal therapy was needed.

#### Discussion

The isolation of *Sporotrichum schenckii* on two occasions from the same lesion and successful animal pathogenicity test with lesions in the spleen, testis and tail in the mice helped to make the mycological diagnosis of Sporotrichosis as the cause of the subcutaneous indolent ulcers on the wrist and lower half of forearm. This was further confirmed by the remarkable therapeutic response to potassium iodide

administration. The lack of demonstration of fungal cells in the clinical sample as happened in our case, is not an uncommon feature. Biopsy from the ulcer regions was not performed.

Majority of the case reports from India showed that the upper extremities were involved causing subcutaneous (lesions<sup>2, 3, 6</sup>) Sanyal et al, 1973.

In the present case too, upper extremity was involved causing ulcers on the left wrist and left forearm. No lymph glands in elbow or axilla were enlarged.

Most of the case reports of Sporotrichosis are from North East of India i. e. Assam and Bengal. The patient is a sepooy in the Military and could possibly have served in that part of the country. This could not be confirmed as the patient was discharged and transferred from Chandigarh when a final mycological diagnosis was made.

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**Final Diagnosis :** Disseminated tuberculosis with myelofibrosis.

Further investigations were done for arriving at a diagnosis. Lymph gland biopsy showed tuberculous lymphadenitis with many A.F.B. Skin biopsy showed pseudoepitheliomatous hyperplasia and acute inflammation. One A. F. B. was detected in the skin biopsy specimen. Liver biopsy showed extensive myeloid metaplasia with focal abscesses suggestive of a bacterial or fungal septicemia. Bone marrow biopsy showed fibrosis and atypical growth cells.

On the basis of the clinical and laboratory findings, a diagnosis of disseminated tuberculosis with myelofibrosis was made. Patient was started on steroids and antituberculous treatment. Skin lesions showed complete clearing within 10 days after starting steroids. This was tapered gradually and discontinued in 3 weeks. Patient continued the antituberculous treatment. When seen three months later patient was afebrile. His WBC count showed total of 12,000 cells/cmm with neutrophils of 72%. Eosinophils 2, Lymph 7, M 9, Myelocytes 1, Metamyelocytes 5 and Band forms 11. He continued to be anemic with 6.6G of haemoglobin. The liver and spleen did not show any regression with antituberculous therapy.