Mycoses imported from the West Indies. A report of three cases

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Summary
There have been isolated case reports of deep fungal infections from the Caribbean area but little is known about the distribution of mycoses there. Three cases, one of mycetoma, one of chromomycosis, one of histoplasmosis, are described. Their management and the advantages and disadvantages of treatment outside the area of origin are discussed.

Introduction
The Caribbean and West Indies are surrounded on 3 sides by endemic zones for most of the major deep mycoses. To the north in the United States there are the southernmost limits of the endemic areas of histoplasmosis and blastomycosis with coccidioidomycosis further to the west in Texas. In Mexico significant numbers of cases of sporotrichosis and mycetoma (madura foot) are seen, while in Central and northern South America chromomycosis, Lobo's disease and paracoccidioidomycosis make their appearance. However little is known about fungal infections within the West Indian islands although there have been sporadic reports of such cases. These have included acute pulmonary histoplasmosis in Puerto Rico (de Jesus and Morales, 1968) and rhino-entomophthoromycosis from Grand Cayman island (Bras et al., 1965). Chromomycosis and mycetoma are known in Jamaica, Cuba, Puerto Rico and Trinidad. More recently, Lobo's disease has been found in dolphins taken from Caribbean waters. The organism *Histoplasma capsulatum* has been isolated from bat and oil bird caves in Trinidad (Ajello et al., 1962).

In any consideration of imported mycoses the large population originating from the West Indies living in the United Kingdom is of great importance. Travel between both areas is also relatively frequent and it is likely that tropical fungal infections from the West Indies will be seen increasingly in the United Kingdom. Between July 1977 and August 1978, 14 cases of tropical mycoses, excluding dermatophyte or *Hendersonula* infections, have been recorded at the London School of Hygiene and Tropical Medicine and of these, 6 have occurred in West Indians, namely mycetoma (3), histoplasmosis (2) and chromomycosis (1). This report concerns 3 of these patients.

Case reports
*Patient 1* was a 56-year-old Jamaican woman who presented with a swollen left foot. The swelling on the dorsum of the foot had been present for 5 years. The patient had come to the United Kingdom 10 years before, and in Jamaica she had been in the habit of going barefoot while working in the fields. The histology of the material removed at surgical exploration showed that the cause was a mycetoma, a pale, grain eumycetoma, and although cultures were not available counter-immunoelectrophoresis of serum showed the presence of precipitins to *Acremonium (Cephalosporium)* spp. The patient was treated with miconazole 10 g given i.v. in divided doses over 2 weeks and this was followed by 250 mg given orally 4 times daily for 6 months. At this stage there was no sign of recurrence after surgery although it is almost certainly too early to assess the results.

The treatment of choice for a eumycetoma or true fungal mycetoma is surgery, usually amputation (Mahgoub and Murray, 1973) although there have been very rare descriptions of 'cures' using a variety of agents from griseofulvin to amphotericin B. The justification for using a new drug, miconazole was the reported activity of the compound against *Cephalosporium* spp. (Van Cutsem and Thienpont, 1972) coupled with the ease of out-patient follow-up in the U.K. A relapse can be recognized and treated appropriately and promptly.

*Patient 2* was a 53-year-old man from the island of Monserrat. He had been in the U.K. for 8 years and had noticed the development and spread of nodules on his right ankle over 5 years. These were situated over the Achilles tendon. Before coming to this country he had been a fisherman and farmer. Biopsy of a nodule revealed the presence of abscesses and giant cells in the upper dermis containing the typical brown cells of chromomycosis. An organism provisionally identified as *Phialophora pedrosi* has been isolated. The patient was treated with flucytosine orally with a maximum daily dose of 8 g over
4 months. The nodules have shrunk in size over this period.

Numerous treatment regimes have been recommended for chromomycosis (Table 1) although most success has been obtained using thiabendazole (Bayles, 1971), flucytosine alone and with amphotericin B. Recently the development of resistance to flucytosine has been described in patients from Brazil (Lopes et al., 1978) and this may be similar to the secondary resistance seen in candidiasis or cryptococcosis.

![Table 1. Treatment of chromomycosis](image)

<table>
<thead>
<tr>
<th>Drugs</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Metals, e.g. arsenic, gold</td>
<td>Amphotericin B</td>
</tr>
<tr>
<td>Sulphonamides</td>
<td>Thiabendazole</td>
</tr>
<tr>
<td>Calciferol</td>
<td>Flucytosine</td>
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<tr>
<td>Potassium iodide</td>
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<tr>
<td>Isonicotinic acid anhydride</td>
<td>Surgery</td>
</tr>
<tr>
<td>Hamycin</td>
<td>Radiotherapy</td>
</tr>
<tr>
<td>Griseofulvin</td>
<td>Local heat</td>
</tr>
</tbody>
</table>

Patient 3 was a 31-year-old Caucasian university teacher from Jamaica. He was one of a group exploring the St Claire caves and with most of the others developed a pyrexial illness about 12 days later. His symptoms consisted of fever, night sweats, headache and a dry cough. In the middle of this illness he flew to England. When he was seen 2 weeks after the onset of symptoms he was feeling well although weak and the only abnormal finding was patchy consolidation on chest X-ray in the lower zone. His *Histoplasma* complement fixation test was positive for the same organism. Three weeks later the former titre was unchanged, the precipitins had disappeared and his chest X-ray was clear. However, the histoplasmin skin test was positive, mean diameter 15 mm.

A small proportion (5%) of patients with acute epidemic histoplasmosis need treatment with amphotericin B because of persistent or progressive pneumatic changes or deteriorating clinical or chemical data, e.g. falling arterial *P*O₂. This patient recovered spontaneously.

**Discussion**

The management of mycoses imported into a country is not significantly different from management elsewhere. However, the treatment may be modified by a number of factors.

Firstly, the ready availability of health care providing the needs of a relatively small population, such as occurs in the U.K., facilitates out-patient follow-up. It makes a trial of chemotherapy in, for instance, Patient 1 a reasonable course of action, although previous experience would suggest that an amputation may ultimately be necessary. Secondly, similar factors, such as the type of health service available, may lead to the presentation of a patient to a clinic at a much earlier phase of the disease. In Patient 2 the lesions of chromomycosis were in an early stage of development which is in striking contrast to the extensive disease so often seen in the tropics at the first visit to the clinic.

The results of skin tests or serological reactions have to be interpreted with caution particularly in areas endemic for histoplasmosis where there may be widespread exposure to the organism amongst the general population. The low serological titres, seen in Patient 3, are much more significant in a patient who has had a limited stay in an endemic zone. Likewise the positive skin test is more significant although, in the case of histoplasmosis, it is best used with caution as it may induce the formation of antibodies, thus giving false positive serological results (Kaufman et al., 1967).

Finally, these advantages in the management of a patient with an imported fungal infection may be totally invalidated if the disease is either incorrectly diagnosed or if inappropriate treatment is instituted. This often occurs because tropical mycoses are rarely seen in European hospitals.

**References**


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