and there was little evidence of central clearing as is common in the classical tinea circinata. Occasionally superficial pustules were present in the centre of the lesions.

All of the 16 cases had been in contact with cattle or farm buildings, and in every case culture from hairs or epidermal scrapings produced *Trichophyton verrucosum*. At the start of this series an initial daily dose of 2 g. of griseofulvin was given for one week and then reduced as the clinical appearance of the lesion responded to treatment. In subsequent cases, however, treatment was started and continued with 1 g. daily—with little or no effect on the duration of clinical involution of the active lesions. No local treatment was used apart from 1/4,000 mercury perchloride lotion to the crusted and foul-smelling lesions and mechanical removal of all loose hairs in the area.

Routine blood examinations were done weekly on every patient, but no abnormality was detected. Liver-function tests were also carried out on several patients, but again these were normal.

Two patients complained of mild gastro-intestinal upset when taking 2 g. of the antibiotic daily, but this disappeared when the dose was reduced to 1 g. daily.

To compare the response to griseofulvin therapy four cases of cattle ringworm infection were kept on routine standard treatment. Three of these had acute inflammatory lesions of the beard and scalp and one had a widespread annular ringworm of the face, neck, and shoulders. Treatment consisted in removing loose hairs and using hot boric lint fomentations, antiseptic lotions, and fungicidal ointments. In the acute inflammatory cases treatment was continued for nine and ten weeks before resolution took place, while, in the case of annular ringworm, treatment was required for six weeks before fresh lesions ceased to appear. This has been our experience in the treatment of these cases over the past five years in Ayrshire.

The most noticeable difference, in our opinion, between the cases treated routinely and those treated with griseofulvin, apart from the duration of clinical involution, was the rapid disappearance of general malaise, pain, and discomfort in the cases treated with the antibiotic. In nearly all cases this had completely gone after one week of treatment. Another difference found was in the response of the early satellite lesions. In the griseofulvin-treated cases these did not develop further, as was the case in the routinely treated patients, but simply settled down with a rapid disappearance of all inflammatory signs.

In addition to these cases of acute cattle ringworm infections we have also started treatment of several other types of ringworm infections with griseofulvin. The results are summarized in Table II. In our opinion these results show that griseofulvin is an antibiotic of great value in the treatment of a large variety of fungus infections of the skin. It would appear to open up a new era in the treatment of human ringworm infection, and will banish for ever, we hope, the necessity to epilate a scalp or beard by x rays.

Comments

The new systemic antibiotic griseofulvin now seems to be the treatment of choice in acute cattle ringworm infections of the human skin.

A daily dose of 1 g. seems to be adequate at present. However, the minimum effective dose and the optimum dose of the drug have yet to be established. The duration of the infection does not seem to have any bearing on the response to treatment.

In acute inflammatory ringworm of the beard and scalp the duration of treatment has been shortened by approximately six weeks. The pain and discomfort in the lesions and the general toxicity of the patient clear much more rapidly with griseofulvin. The duration of treatment will depend on the type of infection and tissue involved.

In the present series of cases, only mild side-effects were seen in two patients. In prolonged treatment, however, as, for example, in tinea of the nails, routine blood examination is still thought advisable, although it would seem to be unnecessary when the antibiotic is given only for short periods.

We are indebted to the staff of the department of medical mycology, University of Glasgow, for their considerable help in supplying the culture reports in this series of cases. The griseofulvin used in this series was supplied by Glaxo Laboratories Ltd.

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Medical Memoranda

Calcified Subphrenic Abscess

Amoebic abscesses of the liver are fairly common in Singapore, and usually present with pain and tenderness over the right lower chest or hypochondrium, fever, and leucocytosis. The case reported here was diagnosed and treated as an amoebic liver abscess, the unusual feature being the massive calcification of the abscess. An almost identical radiological finding was reported by Bruce (1957) in a young Englishman who was symptomless but gave a past history of amoebic dysentery. Bruce concluded that his patient had a calcified amoebic liver abscess, but, because there were no symptoms, did not treat him. Necropsy of the present case, however, showed that the calcified abscess was in fact subphrenic and not in the liver.

CASE REPORT

A male Chinese cook aged 57 was admitted to the General Hospital, Singapore, with a five-days history of continuous pain in the right hypochondrium, aggravated by pressure and occasionally radiating to his right back and right shoulder; this was associated with anorexia, loss of weight, and mild fever. He had no cough, jaundice, or recent diarrhoea. He remembered having had similar pain in China at the age of 17 years, following an attack of diarrhoea, and eventually recovering without medical treatment.

On examination he was pale, thin, and wasted, with a temperature of 100.4° F. (38° C.); he was not jaundiced. The right lower chest was bulging anteriorly and laterally, and there was tenderness over the intercostal spaces in this

area. Air entry was good over both lungs, but few crepitations were heard over the right base. The right upper quadrant of the abdomen was distended, with guarding and tenderness over the right subcostal area. Neither liver nor spleen was palpable. There was no free fluid in the abdomen or any abnormality on rectal examination.

Investigations.—Haemoglobin, 8.4 g./100 ml.; W.B.C., 12,600/c.mm. (neutrophils 88%); E.S.R. 85 mm. (Westergren). Stools contained no *Entamoeba histolytica* cysts or trophozoites. An x-ray film of his chest showed moderate pulmonary emphysema with old tuberculous scarring at the right apex, increased pulmonary markings at the right base, and a calcified shadow under the right diaphragm. Further x-ray films and fluoroscopy revealed a massive oval calcified shadow measuring 16 by 12 by 10 cm. under the right diaphragm with mottled calcification in the periphery and a small fluid level in the upper portion (Fig. 1); the right diaphragm was moderately elevated.

It was concluded that the patient probably had a liver abscess with calcification in its wall, and, since most liver abscesses seen in Singapore are amoebic in origin, he was given a course of emetine and tetracycline followed by chloroquine. There was no clinical improvement, and an initial aspiration of the abscess produced 750 ml. of thick greenish sterile pus. A plain x-ray film of the abdomen then showed partial collapse of the medial wall of the abscess (Fig. 2). The patient's general condition improved, and after further aspirations of large amounts of pus he was discharged. Three months later he was readmitted with

FIG. 1

FIG. 2

FIG. 1.—Postero-anterior radiograph of the abscess. FIG. 2.—The abscess after aspiration, showing collapse of medial wall.

similar pain, and after more antibiotic and anti-amoebic therapy with further aspirations he again improved and was discharged. Two months later he was admitted a third time, and was given yet another course of anti-amoebic treatment and tetracycline in conjunction with aspirations. This time he did not recover. The calcified shadow had persisted since his first admission, partially collapsing with each aspiration but regaining its original rounded shape as it refilled again with pus.

At necropsy a large abscess (18 by 10 cm.) with a hard calcified wall 1.5–3 cm. thick was found immediately below the right leaf of the diaphragm, pushing the liver downwards and medially (Fig. 3). The diaphragmatic surface of the lower lobe of the right lung was bound down to the right leaf of the diaphragm, which could not be defined clearly, as it merged into the superior wall of the calcified abscess. The inferior wall of the abscess was adherent to the superior surface of the right lobe of the liver, which itself was normal. It was possible to open the abscess only by sawing through it. A small quantity of thick greyish pus, which was sterile on culture, filled the abscess cavity. Smears and culture did not reveal any *E. histolytica*. The gall-bladder and gastro-intestinal tract were normal.

FIG. 3.—Photograph of specimen showing abscess cavity (A), lung above (B), and ribs (C).

COMMENT

The remarkable feature in this case was the massive calcification which obviously prevented complete collapse of the abscess wall and occlusion of the cavity after each aspiration. In view of the calcification it is probable that the abscess had been present for a very long time and did not give rise to any symptoms except for a few days before his admission. That a subphrenic abscess can remain quiescent is not altogether unknown. Russell (1929) and Janz (1933) each reported a case in which the condition remained unrecognized for seven years after its onset. Lockwood (1921) and Grove (1930) have remarked on the occasional existence of subphrenic abscess with relatively few or no symptoms. There are only a few reports on calcification of subphrenic abscess—that by Freese in 1935, and the one by Bruce (1957) which on the basis of this case report was probably a subphrenic abscess. It is interesting to note that when Ochsner and DeBakey (1938) reviewed 3,608 cases of subphrenic abscess they did not mention seeing a calcified abscess.

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