PRIMARY PULMONARY MUCORMYCOSIS

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SYNOPSIS

Mucormycosis is an uncommon fungal infection in man and is usually opportunistic. A case of primary pulmonary mucormycosis with no predisposing cause is described.

INTRODUCTION

MUCORMYCOSIS is an infection by a fungus of the order mucorales in the class phycomycetes commonly known as bread mould or sugar fungus (Hesseltine, 1953). This fungus is an ubiquitous saprophyte frequently found on decaying vegetable matter or in the soil (Garrett, 1951; Morwood, 1954). Human infection is uncommon and most of the cases reported have been opportunistic, usually predisposed by diabetes mellitus, malignancy or steroid therapy (Baker, 1956; Mcbrideetal, 1960). We report a case of primary mucormycosis which to our knowledge is the first case reported in Malaysia.

CLINICAL RECORD

A 38 year old Chinese housewife was admitted to the University Hospital, Kuala Lumpur with productive cough and progressive exertional dyspnoea for eight months. She was apparently well until eight months ago when she complained of productive cough with small amount of whitish sputum occasionally streaked with blood. She had become progressively breathless on exertion and had lost some weight. She occasionally helped her husband in vegetable farming.

On examination she looked ill. A small firm, mobile and nontender right supraclavicular lymph node was palpable. The liver was enlarge 4 cm below the right costal margin. No other abnormality was detected.

Laboratory investigations showed that the erythrocyte sedimentation rate (ESR) was 82 mm in one hour, the haemoglobin 12.3 gm/100 ml and the white cell count 7200/mm^3 with a normal differential count. The serum uric acid, calcium, phosphate and liver function tests were within normal limits. The

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fasting blood sugar was 76 mgm/100 ml. Sputum for malignant cells and acid-fast bacilli were negative. Bone marrow was normal. The chest x-ray (Figure 1) showed bilateral hilar masses, enlargement of right paratracheal lymph glands and consolidation in the lingular segment of left lung. Mantoux test (1 : 10,000) was negative. Biopsy of the right supraclavicular lymph node showed reactive hyperplasia. Bronchoscopy revealed a narrow trachea above the carina due to compression by extrinsic mass. Mediastinoscopy revealed hard and matted lymph nodes anterior to the trachea and the biopsy of these showed non-specific necrotising granulomas. No micro-organisms were identified.

She was treated for probable pulmonary tuberculosis but showed no improvement after a month. She had developed partial superior vena caval obstruction. Open biopsy of mediastinal nodes was performed. Microscopic examination showed deeply eosinophilic areas of necrosis surrounded by neutrophil and eosinophil polymorphonuclear leucocytes, epitheloid cells, multinucleate giant cells, lymphocytes and plasma cells. Broad, irregular branching hyphae, 10-25 u in diameter and up to 250 u in length, were present within the necrotic areas (Figure 2). The hyphae stained with hematoxylin and eosin, periodic acid-Schiff and methenamine silver. The diagnosis of phycomycosis was confirmed by Professor W. St. C. Symmers. Sputum culture for fungi grew rhizopus. She was treated with Lugol's iodine but she died and chest X-ray (Figure 3) showed massive consolidation throughout both lung fields with numerous cavities. There was no post-mortem.

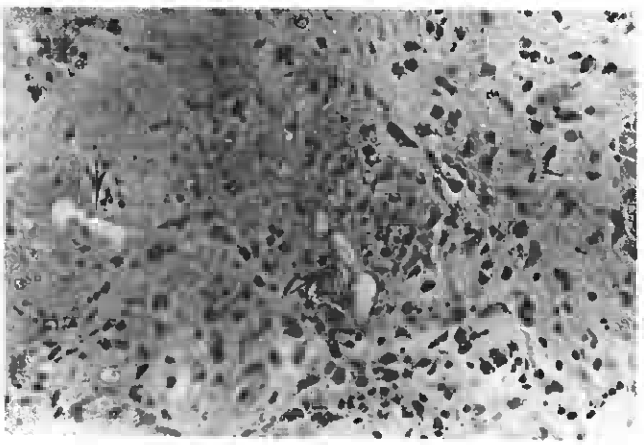

Fig. 2 Section of mediastinal node showing fungal hyphae (arrow) Haematoxylin and eosin x 300.

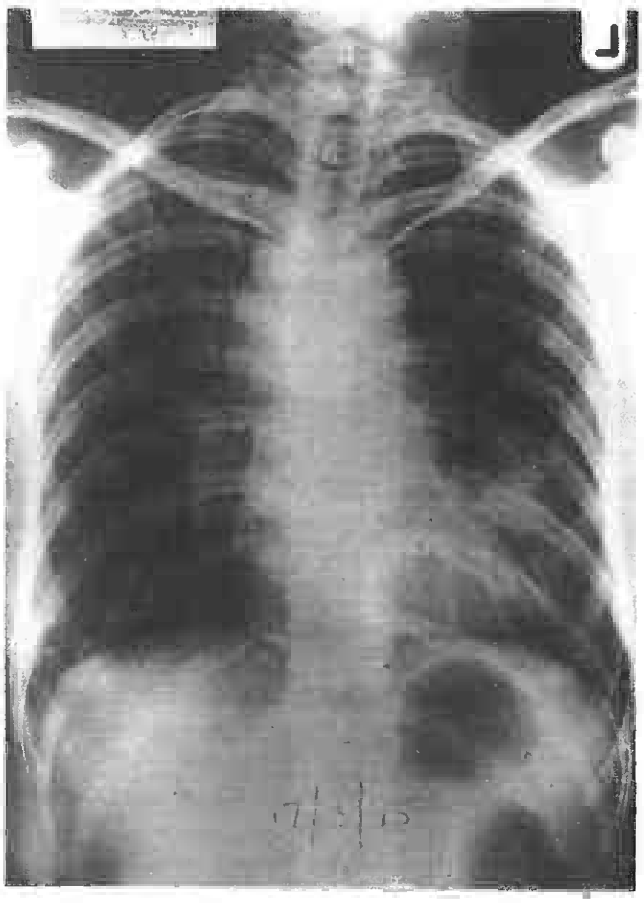

Fig. 1 Chest X-ray on admission shows bilateral hilar masses, enlargement of right paratracheal lymph glands and consolidation in the lingular segment of left lung.

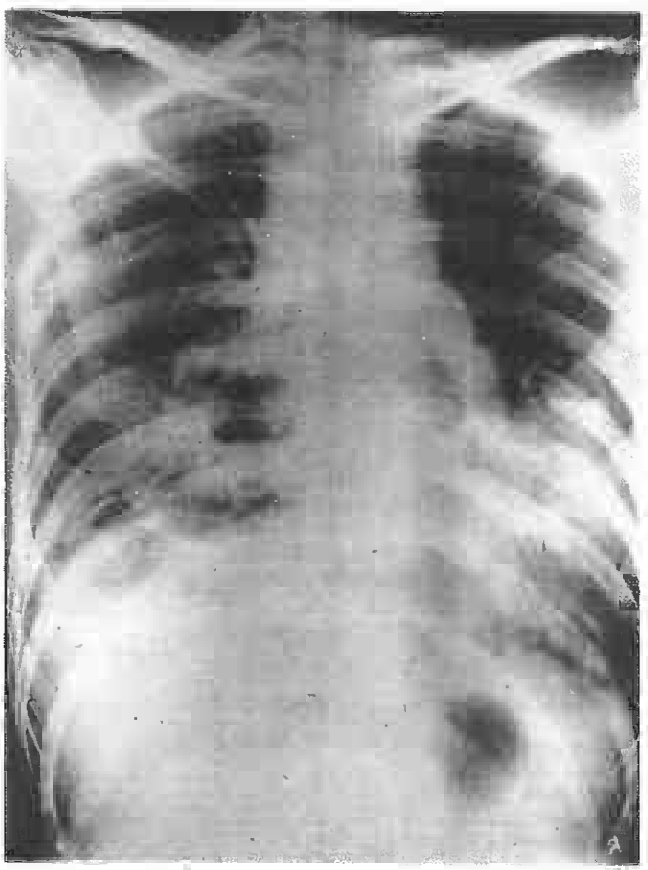

Fig. 3 Chest X-ray two days prior to death shows massive consolidation with cavities.

DISCUSSION

Infection in man by fungi of the order mucorales is rare and usually opportunistic. The common predisposing conditions include diabetes mellitus, leukaemia, lymphoma, corticosteroid therapy and malnutrition. Of the three genera of mucorales, rhizopus is the most frequent infecting organism. The infection may be focal or generalised and the brain and the lungs are the common sites (Baker, 1971).

Baker (1971) reviewed 78 cases of primary pulmonary mucormycosis and found that majority of the cases were opportunistic. In our case none of the known predisposing factors was present. Diagnosis in the pulmonary form remains difficult (Mcbrideetal 1960) and is dependent on the demonstration of the fungi in tissue. Culture of fungi from sputum may help in the diagnosis but interpretation may occasionally be difficult because of contamination as the organisms are ubiquitous (Baker 1956). The diagnosis in this patient was delayed due to absence of fungal hyphae in the initial biopsy. Despite failure to identify tubercle bacilli in the specimen, the patient was treated for tuberculosis since this is the commonest cause of necrotising granulomatous lymphadenitis in this country.

Treatment for this condition is unsatisfactory. Administration of iodides or amphotericin B and treatment of underlying disease have been recommended (Mcbrideetal 1960).

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