ACUTE PULMONARY PARACOCCIDIOIDOMYCOSIS IN AN IMMUNOSUPPRESSED PATIENT

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Abstract

A case of an acute pulmonary paracoccidioidomycosis following the use of immunosuppressive therapy in a solid cancer patient is reported.

Introduction

An immunosuppressed host is a patient presenting a primary underlying condition and/or one who is receiving therapy that impairs resistance to infection (12). This subjacent disease may be cancer, particularly hematologic or lymphatic malignancies. However, it has been questioned whether a patient with solid cancer should be considered a compromised host (10) unless he is also receiving chemotherapeutic treatment (2).

An increasing prevalence of the opportunistic fungal infections (candidiasis, aspergillosis, visceral mucormycosis, etc.) has been observed in severely immunosuppressed cancer patients. A similar increase has not been noted in patients with systemic mycosis (histoplasmosis, coccidioidomycosis, criptococcosis and blastomycosis) (2), but the dissemination of these infections has occurred in immunosuppressed patients (10, 12). An acute form of these infections could also occur during cancer therapy, which could represent a reactivation of a latent infection (2, 10, 12).

An acute pulmonary paracoccidioidomycosis occurring in a solid cancer patient when submitted to chemotherapy and the bizarre aspects that the fungus presented in the lesions will be reported.

Case report

A 55 year-old caucasian male, a heavy smoker, presented with a two-week history of sternal pain, dysphagia, anorexia, asthenia, weight loss and cough with purulent, sometimes blood-tinged expectoration. Physical examination revealed a fairly well nourished man, presenting slightly clubbed fingertips and some nodules on the scalp. A chest X-ray, taken on admission (July 26), showed a mass in the mediastinum, slight infiltration and some micronodules scattered on both lungs. A vegetating mass situated on the tracheal carina was seen on bronchoscopic examination. Biopsy of this mass revealed, histologically, an 'oat cell' carcinoma. Laboratory data included a hematocrit of 43 per cent, a hemoglobin of 14.5 gm per cent and a white blood cell count of 10700 c/mm³ (one per cent eosinophils, 15 per cent basophils, 70 per cent neutrophils, 10 per cent lymphocytes and four per cent monocytes). In the smears prepared for exfoliative cytology, elements of the 'oat cell' carcinoma and many larvae of Strongyloides stercoralis were seen. No acid fast bacilli, but many larvae of S. stercoralis were observed on sputum examination. These larvae were also found in the feces.

Therapy for the treatment of the helminthiasis was initiated with thiabendazole. Three days later, cyclophosphamide (1 gm), vincristin (1 mg) and adriamycin (50 mg) were administered intravenously. Before antineoplastic therapy, a chest X-ray (Aug. 9) showed no variation from the first one. Inasmuch as the general state of the patient deteriorated, another chest X-ray was taken (Aug. 15). It revealed slight, diffuse infiltration in both lungs, mediastinal and interlobar adenopathy and a circumscribed consolidation in the right lower lobe (Fig. 1). On August 28 the patient died.

Necropsy. Examination of the thoracic cavity revealed a mediastinal, bosselated, firm, white mass, measuring 5 × 4.5 × 4.5 cm. The mass surrounded and invaded the main bronchi, the mediastinal nodes and the esophagus.
Fig. 1. Chest X-ray on Aug. 15: note round consolidation in the right lower lobe.

The lung presented two large foci of consolidation. One of these, localized in the right lower lobe, was round, 4.5 cm in diameter, and, on dissection, presented a yellowish surface and a purulent, necrotic center. The other one, localized in the left upper lobe, measured 12 × 7 cm, and, on dissection, presented a pinkish surface (Fig. 2). Also some small foci of consolidation and many nodules and micronodules were seen scattered on both lungs. White, firm nodules were found on the scalp, pericardium, right kidney, right adrenal gland, and on the liver, which was hypertrophied. Congestion and autolysis were found in the small bowel.

Microscopic examination of H & E stained sections from the nodules and micronodules disclosed elements of an 'oat cell' carcinoma. H & E stained sections taken from the pulmonary foci of consolidation showed large necrotic areas and that the alveoli and bronchioli were filled with an abundant fibrinous purulent exudate (Fig. 3). In the sections taken from the focus in the left upper lobe, there was found a conjunctive proliferation of the interstitium, a slight fibrosis and a predominantly mononuclear infiltrate. Many double walled, round elements were seen among the necrotic debris, pus cells and macrophages (Fig. 3A). In Grocott stained sections, these elements showed the characteristic multibudding forms of Paracoccidioides brasiliensis (Fig. 4). Neither the fungus nor the granulomatous or supurative foci were found in the other organs. No helminthic forms could be seen in section taken from the lungs and small bowel.

Mycology. An enormous number of elements of P. brasiliensis were present in the supurative foci. There were medium sized, round, nonbudding or one-budding elements among numerous bizarre, multibudding forms. These bizarre forms presented two basic aspects: 1) isolated, large, round elements surrounded by many

Fig. 2. Cut surface of the lungs on Aug. 28: note the abscess in the right lower lobe and the pneumonic focus in the left upper lobe.