Primary Cutaneous Cryptococcosis Presenting as a Whitlow

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Sir,

Cryptococcosis, an opportunistic yeast infection with *Cryptococcus neoformans*, remains the most common systemic fungal infection in immunosuppressed patients. Cutaneous cryptococcosis is usually secondary to haematogenous dissemination. Primary cutaneous cryptococcosis (PCC) is characterized by skin lesions confined to one body region, positive culture for *C. neoformans*, and no evidence of simultaneous dissemination (1). We describe here a rare case of PCC in a male with normal cell-mediated immunity.

CASE REPORT

A previously healthy 71-year-old man presented to our accident and emergency department the day after suddenly developing a painful, erythematous and oedematous skin lesion on the pulp of the thumb of the right hand and pyrexia of 38°C. A small pustular area was noted and culture was performed. He denied trauma at the site of the whitlow or contact with bird excreta, but careful questioning evidenced handling of clothing in very poor hygienic conditions whilst working for an aid organization. General physical examination was otherwise unremarkable. Cloxacillin was given orally, but 7 days after initial presentation there was a lack of clinical response and the whitlow became haemorrhagic (Fig. 1). Culture of the pustule yielded *C. neoformans var. neoformans*. A full battery of biochemical tests, including urea and electrolytes, liver, bone, protein and thyroid function test, tumour markers, T-cell subset analysis, serum and urinary electrophoresis were within reference ranges. Human immunodeficiency virus (HIV) serology, serum cryptococcal antigen testing, urine and blood cultures were negative. Chest radiograph showed no abnormalities and Mantoux test produced 25 mm of induration. The patient refused lumbar puncture and was given oral fluconazole at a dose of 400 mg per day for one month, achieving complete lesion clearance, and 200 mg/day for a further 2 months. Neither skin recurrence nor systemic dissemination has appeared during out-patient follow-up for 3 years.

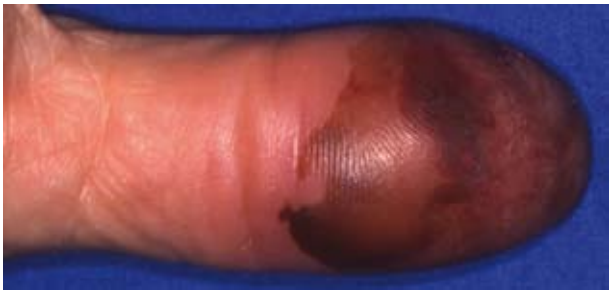

Fig. 1. A haemorrhagic lesion with an ill-defined pustular area on the pulp of the thumb.

DISCUSSION

C. neoformans is found world-wide as a soil organism affecting patients with impaired cell-mediated immunity (infection with HIV, complication of solid organ transplantation, lymphoma or corticosteroid therapy) but also immunocompetent individuals. *C. neoformans* is encapsulated yeast with 4 distinguishable serotypes: serotype A (*C. neoformans var. grubii*) has a worldwide distribution; serotype D (*C. neoformans var. neoformans*) is found mostly in Europe; and serotypes B and C (*C. neoformans var. gattii*) are limited to tropical and subtropical areas (1). Although the exact mechanism of infection is unknown, the airway is thought to be the main portal of entry, with subsequent spread to the skin, bone, genitourinary tract and central nervous system. However well-documented reports of PCC have been published (1–3). Serotype D of *C. neoformans* is more frequently found in cutaneous lesions in both secondary cutaneous cryptococcosis and PCC (1, 3).

The cutaneous manifestations of cryptococcosis are protean and may mimic other cutaneous diseases, including *molluscum contagiosum*, vasculitis and Kaposi's sarcoma (4). Neuville et al. (1) found that cellulitis, cutaneous ulceration and whitlow, are the most common presenting clinical features in PCC. Whitlow has also been reported as a rare presentation in secondary cutaneous cryptococcosis (5). Whitlow is a common bacterial skin disease, often seen in accident and emergency departments. Treatment is by antibiotics or incision and drainage under local anaesthetic. However, a lack of clinical response should alert the clinician about other causes. As the dermatological manifestations of cryptococcosis are polymorphous, mycological examination, among other tests, of refractory whitlows should be carried out.

Other epidemiological data more common in PCC than secondary cutaneous cryptococcosis are: history of skin injury, solitary skin lesion on uncovered areas (particularly the hands), participation in outdoor activities, life in rural areas, exposure to bird droppings and isolation of *C. neoformans var. neoformans* (1). Older age and lack of underlying immunosuppression are also

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more frequent in PCC than in systemic cryptococcosis (1). The prognosis in PCC is favourable, even for an immunocompromised host, and most patients respond favourably to short-term oral antifungal monotherapy.

Our patient's clinical presentation, physical findings and treatment response seem to fit well with a diagnosis of PCC. Although there was no history of trauma and no clear potential source, he did handle dirty clothing left outside and therefore possibly exposed to birds. However the presence of *C. neoformans* on a skin lesion should alert the clinician towards underlying systemic cryptococcosis, as it can be the only symptom and an early marker of disseminated disease. Therefore every effort should be made to seek extracutaneous manifestations of this fungal infection and to exclude coexisting immunosuppression before a diagnosis of PCC is established.

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