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Induction of Tinea Cruris by Topical Nitrogen Mustard and by Systemic Chemotherapy

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Abstract. The present report describes the rapid clinical appearance of superficial fungous infections after the initiation of topical nitrogen mustard treatment in one patient and a short course of systemic cytotoxic drugs in another.

Key words: Tinea cruris; Immunosuppression; Nitrogen mustard; Chemotherapy; Cyclophosphamide; Mycosis fungoides

CASE REPORTS

Patient 1

This 50-year-old white male had had maculo-squamous lesions over his trunk and extremities for 9 months. He also presented with plaques of poikiloderma vasculare atrophicans of the axillae and groin which had been present since childhood. There was no clinical evidence of fungal infection of the hands, feet, nails or elsewhere. Histologic examination of the lesions on the trunk and groin revealed mycosis fungoides.

Topical nitrogen mustard (10 mg in 50 ml of water freshly prepared) was applied over the entire skin ocne daily. By the seventh day the entire groin area was covered with a florid white scaling plaque which showed numerous hyphae on direct K●H examination.

The eruption cleared following 3 weeks of oral griseofulvin (500 mg b.i.d.) therapy, and discontinuation of the nitrogen mustard therapy.

Patient 2

This 54-year-old white male had had a generalized erythroderma and lymphadenopathy for 2 years. All of his toe nails were dystrophic and microscopic examination of the involved plate revealed hyphae. There was no other clinical evidence of fungous infection.

The patient was hospitalized and, on the basis of biopsies and general studies, a diagnosis of lymphoma cutis was made. He was given a course of cyclophosphamide, 9 mg/kg. I.V. daily ×5; vincristine, 2 mg ×1; prednisone, 80 mg/day. Upon completion of this 5-day course, he was discharged from the hospital, much improved. He was advised to take cyclophosphamide orally, 50 mg t.i.d.

Two weeks later, upon his return, he was found to have an exuberant scaling tinea cruris, as revealed by KOH examination. Treatment with griseofulvin (ultramiscrosize dispersion in polyethylene glycol), 250 mg/day, and topical miconazole cream was effective in eradicating both clinical and microscopic evidence of the fungal infection within 3 weeks. The lymphoma persists.

DISCUSSION

Although immunosuppressed patients show a heightened incidence of viral, bacterial, and systemic fungal infections of the skin (5), they do not commonly develop superficial fungal infections (4, 7). Nonetheless, the body does defend itself against dermatophytosis by immunological means (1, 8). Specifically, the defense is a cell-mediated immune one (3, 6). Interference with this immune system may account for the strange "tinea incognito" in patients treated topically with potent steroids (2).

In my patients, it seems likely that the topical nitrogen mustard (patient 1) and, in turn, the systemic cyclophosphamide (patient 2) each depressed the normal cell-mediated immunity to the point where the skin could no longer fend off the growth of dermatophytic fungi.

The present report appears to be the first in which a topical agent, known to impair the cellular immune system, was responsible for the appear-

ance of tinea. The effect of such focal immunosuppression on experimental infections deserves study. Thus, the use of topical nitrogen mustard should greatly facilitate the induction of model infections with fungi as well as with bacteria and viruses.

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Hepatic Injury in Dermatitis Herpetiformis

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Abstract. Liver function tests were performed in 60 patients with dermatitis herpetiformis. Abnormalities of bilirubin or elevated liver enzyme levels were found in 17% of the patients. 13% had abnormal liver enzymes or elevated bilirubin levels not due to haemolysis. In 8% of patients bilirubin levels were elevated as a result of dapsone-induced haemolysis. The incidence of liver function abnormalities was higher (19%) in those on a normal diet than those on a gluten-free diet (9%). The abnormalities were not associated with the presence of immune complexes, anti-mitochondrial or anti-smooth muscle antibodies.

Key words: Dermatitis herpetiformis; Dapsone; Gluten-sensitive enteropathy; Coeliac disease; Liver disease

Both adult and childhood variants of coeliac disease have been shown to be associated with hepatic damage (4, 6). These two studies showed an improvement of abnormal values in liver function tests with a gluten-free diet (GFD). Dermatitis Herpetiformis (DH) is known to be associated with gluten-sensitive enteropathy (1, 3). There are rarely overt symptoms or signs of malabsorption and the intestinal lesion is often milder than in coeliac disease. The mechanism of liver damage in coeliac disease is unknown and there is uncertainty as to its relation, if any, to the severity of the intestinal lesion.

In this study we have investigated patients with DH for evidence of liver damage, and compared the results of those taking a gluten-free diet with those on a normal diet.

There has been a report of cholestatic jaundice in patients taking dapsone and so we compared those patients receiving dapsone with those who were not (11).

PATIENTS AND METHODS

60 consecutive patients attending a dermatitis herpetiformis clinic were studied. The diagnosis had been made on clinical grounds, response to dapsone, and the demonstration of IgA in the uninvolved skin. 34 were on a gluten-free diet, but 13 of these still required dapsone or an alternative drug, 1 was taking sulphapyridine and 2 sulphamethoxypyridazine. 26 were on a normal diet, 20 took dapsone and 1 sulphamethoxypyridaxine, 5 took no medication—4 because the rash was trivial and one was newly diagnosed.

The following liver function tests were performed: estimations of bilirubin, albumen and activities of alkaline phosphatase, aspartate transaminase (AST) and gamma glutamyl transpeptidase (GGTP).

Reticulocyte counts and, when indicated, haptoglobin levels were estimated to assess the extent of haemolysis.

Immune complexes were estimated by the C_{1q} binding method, and non-organ-specific antibodies screened for in those with abnormal liver function tests.

Jejunal biopsies were obtained by a Crosby capsule and morphology and lymphocytic infiltration assessed in those patients who agreed to this investigation.