

EXFOLIATIVE DERMATITIS — DERMATOPHYTID (case reports)

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Summary

Exfoliative dermatitis is a symptom complex. Varied aetiology are operative in the causation of generalised exfoliation. Two cases of exfoliative Dermatitis, one above the age of 50 and the other 15 years are reported caused by superficial Keratolytic fungus belonging to the Trichophyton group as proved by culture. It is worthwhile to note the seasonal variation of exfoliative dermatitis due to fungus, occurring commonly in the colder months.

Case Report

Case No. (1) A 15 years male patient was seen for a generalised scaly dermatosis of 3 weeks duration. Severe itching accompanied the dermatosis. Fig. 1

Clinical Examination

A moderately nourished youngster showing generalised dry scaly dermatosis over the trunk, extremities and face. Scalp hair was unaffected but moderate loss over lateral third of eyebrows was seen. He had also enlarged lymph glands over the axilla and in the inguinal regions bilaterally. All other systems were normal.

Patient also had fever with chills due to the exfoliation.

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Received for Publication on 12-2-1973



Fig. 1

Investigations

Skin scraping for fungus — Positive.

Blood Total count, Differential count, ESR, RBC, Hb%, Motion, Urine were within normal limits.

Culture: in Sabouraud's medium - +ve for *T. rubrum*.

Case No. 2 A 50 years male Patient was seen for bilateral, symmetrical eczema over the lower 1/3 of both legs and a papulo vesicular eruption over the trunk of 6 months' duration. Fig. 2

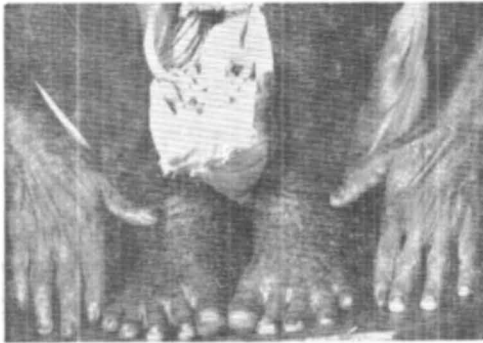


Fig. 2

Clinical Examination

Tall atheletically built individual showed generalised dermatosis of trunk and extremities with lichenification and pigmentation. His finger nails and toe nails showed dystrophy and crumbling of nails distally and over the lateral folds bilaterally, but asymmetrically. He had also enlarged inguinal glands and axillary glands bilaterally. Rise of temperature with rigor were noted features. Both cases showed dermatopathic lymphadenopathy.

Investigations

Skin scraping in KOH 10% Negative for fungus.

Nail clippings in KOH 40% positive for fungus.

Culture in the Sabouraud's medium Positive for *T. Rubrum*.

Blood TC, D, C, RBC, ESR, Hb, Urine and Motion were within normal limits.

Discussion

Superficial Keratolytic fungal infections are common in the tropics. The most commonly met with species affecting the hair, nail and the body being *Trichophyton*, *Microsporum* and *epidermophyton* respectively. Hair involvement is seen in childhood (*Taenia Capitis*) most probably based on loss of sebaceous activity at that age. Body fungus is common at any age group mainly because of the easy mode of conveyance of the disease. Fungus affects the lateral folds and the nail plate with involvement of subungual keratin.

In case No. 1 activity of the fungus was evidenced by a positive wet preparation of skin scraping and culture for *Trichophyton*. The exfoliation noted is due to widespread involvement with the fungus. The rigor and irregularities of temperature are constant accompanying features in any type of Exfoliative Dermatitis. In Exfoliative Dermatitis chills occur in a cool environment due to heat loss by radiation from the vascular bed and rise of temperature in a hot environment due to reduced sweating or anhidrosis. Due to the exfoliation protein loss is significant.

In case No. 2. fungus of the Nails was the primary focus for the generalised Id reaction. Although dermatophytes live only in dead keratin they cause variable degrees of inflammation in the underlying tissue as a result of an allergic response to and irritation by products of fungus. Generalised hypersensitivity frequently develops especially with severe inflammatory infections and reactions in the skin remote from the focus of infection known as dermatophytids, are common. Id reactions in fungus results from the passage of fungal elements or their

allergenic products into the blood stream and their dissemination. Areas of constant friction, and mechanically protected areas are prone for active fungus infection.

Id reactions are normally found in a generalised manner and the subsequent itching causes deterioration in the lesions. Fungal elements could be cultured from the blood and found in the Id lesions in severe cases. The allergic state can be demonstrated by the intradermal injection of *T. mentagrophytes* (a common antigen). In the tropics Id reactions are common in the colder months whereas active lesions are more common and persistent in the warm humid summer months. Most probably the natural dryness of the skin along with altered pH in colder months with the generalised pruritus may give rise to the clinical manifestations. Dermatophytids may take the form of:—

1. Recurrent vesiculo bullous eruptions—desquamating and eczematous over the hands and feet (pompholyx).
2. A lichenoid follicular, papular, eruption affecting the face, trunk and proximal parts of the limbs (Id in *Taenia Capitis*).
3. Erysipelas—like eruption of the leg.
4. Scarlatiniform, macular, papular or vesicular generalised eruptions.
5. Erythema nodosum, Erythema multiforme, Erythema annulare gyratum.
6. Thrombo-phlebitis migrans and urticaria.
7. Exfoliative dermatitis.

Keratolytic fungal infections—*Trichophyton rubrum* or their Ids, when they do not respond to specific treatment,

underlying causes like lymphomas (Hodgkin's) or internal malignancy must be astutely sought for.

Diagnosis is dependent on

1. Clinical Picture.
2. Wet preparation :—10% KOH (Body fungus), 40% KOH (hair and Nail).
3. Wood's lamp examination :— Useful in certain fungal infections and also a prognostic guide.
4. Culture : Sabouraud's medium. Useful in identification of species.
5. Biopsy and special stain with PAS or Hotchkiss—McMannus technique.
6. Intradermal antigenic test (Theoretical).

A Note of caution

Collection of material for culture is a simple procedure. In nail fungus subungual Keratin is rich in fungal elements. In body fungus the active viable portion is scraped. In hair fungus the hair-root is collected. The material is preserved between two clean glass slides for a few days, for the out-growth of contaminants before inoculation into the Sabouraud's medium. Culture in the tropics at room temperature without an incubator is possible in the colder months.

Treatment

For active fungal lesions of the body surface a keratolytic agent containing salicylic acid and Benzoic acid is useful. This has to be used for a period of three weeks after cleansing the area before each application. Personal hygiene should be above par, as fomites convey the disease, the clothing should be boiled or laundered.

In extensive fungal infections of the skin surface, in addition, griseofulvin therapy may be instituted for a period of three weeks, the dosage being 1 gm./day or 0.25 gm. 4 times a day, to be taken after a full meal.

Griseofulvin - A metabolic product of *penicillium griseofulvum* is a fungicide and all the Keratolytic ring worm fungus are susceptible to it. In the concentration obtained in the stratum corneum, Griseofulvin acts as a

fungistatic rather than a fungicidal agent. Since the active pointed ends of the hyphae become blunted and curled due to the action of Griseofulvin, it is otherwise known as the 'Curling factor'. In fungus of the Nails (*Onycho mycosis*) and in *Taenia capitis* Griseofulvin therapy may have to be extended up to 3 - 6 months. Treatment of the primary focus clears up the generalised Id reaction and hence symptomatic therapy only is required for Id reaction.

TRUE or FALSE

Immunofluorescence and immunoglobulin studies of cases of Dermatitis Herpetiformis and Bullous Pemphigoid give features which differentiate between the two conditions.

(Answer page No. 183)