TINEA PEDIS , CLINICAL AND MYCOLOGICAL STUDY.

A THESIS

Submitted in partial fulfillment for the master degree of (Dermatology & Venereology)

BY

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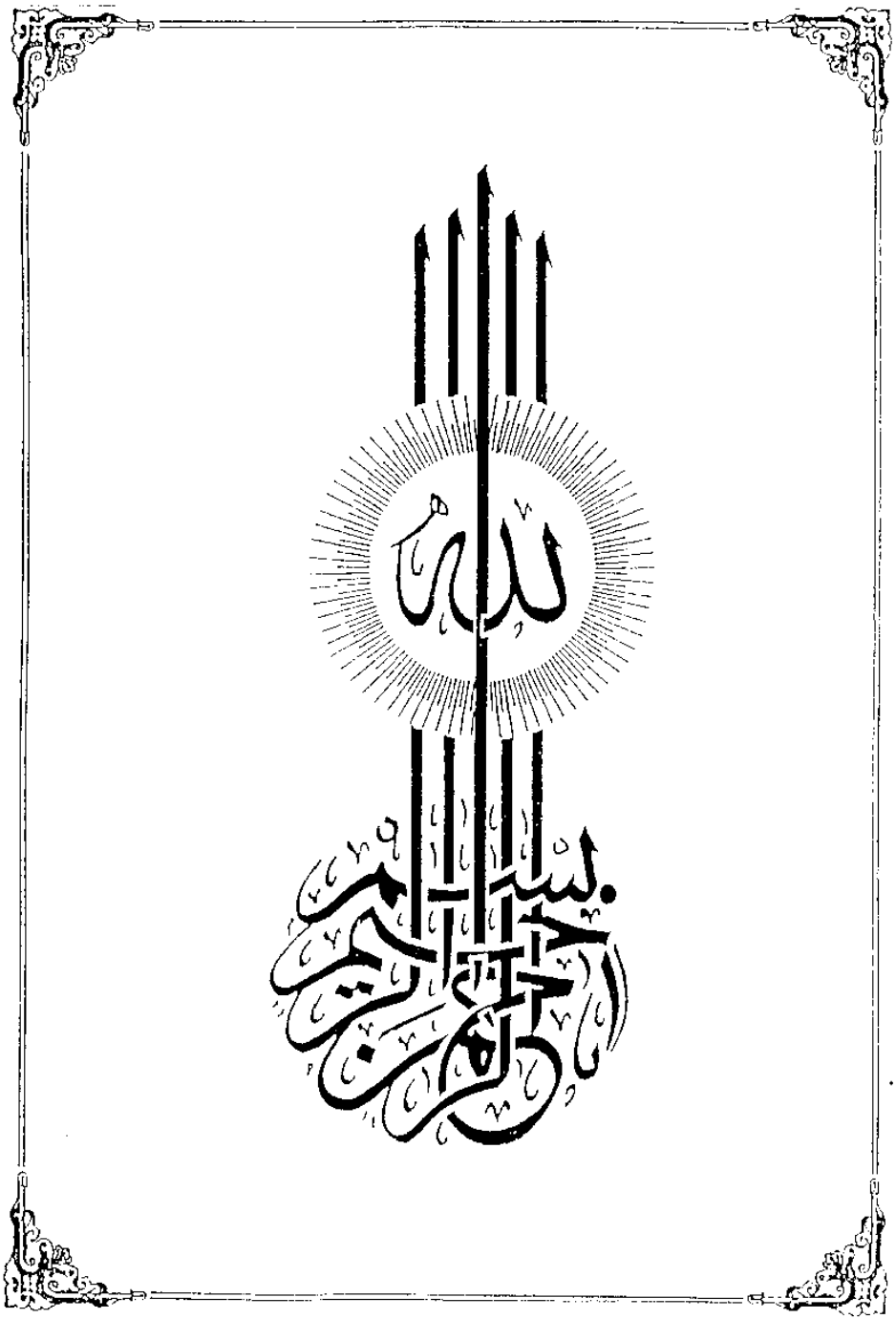

ACKNOWLEDGEMENT :

I have the honour to express my sincere gratitude to prof. Dr. HAFEZ MOHAMMAD KHAFAGY, professor and head department of Dermatology and venereology Ain-Shams University, for his generous effort, kind guidance, constant supervision and encouragement which pushed this work into view .

AIM OF THE WORK :

The aim of this thesis is to present a clinical and mycological study of interdigital fungous infection .

The thesis also includes a review of the available literature on the subject .

Our results were compared with the results of the previous workers.

Historical Review

Tilbury fox (1870) was probably the first observer to report a recognized case of Trichophyton infection of the volar surface (ormsby et al.) (1916).

Pellizari in 1888 reported the occurrence of Seven cases of infection of palms and soles in a series of 150 cases of trichophytosis capitis .

The frist careful and systematic study, however, was not made until 1892 by Djélaleddin-Moukhtar.

In 1908, Whitfield described fifre cases of ring worm of the hands and feet.

In 1910, Sabouraud reported Six cases of intertriginous eczema of the feet, four of which gave cultures of Epidermophyton inguinale .

In 1911 whitfield recorded observations in Seven additional cases .

Since 1911, the most comprehensive paper on the subject is that of Kaufmann-Wolff in 1914, She made a clinical, histologic and mycologic study of twenty-five cases which

formerly would have been accepted as dyshidrosis .

In America, Montgomery and Culver (1914) reported an infection of the feet, following eczema marginatum of the groin from which Epidermophyton inguinale was grown .

In 1916, Lane reported two cases one patient had lesions on the plantar surface of the foot and the other had lesions involving the nails and both dorsal and palmar surfaces of the fingers .

Whitfield, in 1921 classified the different manifestations into three types : -

1. Acute vesiculobullous: - sudden onset with all the characteristics of a vesicular eczema or dyshidrosis pus formation is usually absent .
2. Chronic intertriginous of toes : -
   White, sodden macerated area between the toes .
3. Chronic hyperkeratotic : -
   Enormous, irregular overgrown horny layer, that may involve the entire plantar surface .
   Scattered vesicles and pustules may be found .

Kaufmann-Wolff(1914) agreed with whitfield's classification.

She found, in a twenty five cases, three groups of lesions:-

1. Vesicular: - grouped vesicles accompanied by marked itching; mostly occurs in hot weather.
2. Squamous hyperkeratotic variety: resembles a scaling dyshidrosis.
3. Pyodermic variety: resulting from secondary infection .

These types are due to variation in location, duration of lesions and to seasonal changes.

A patient may present one type on one occasion and another the next time he is seen .

Tinea pedis

Synonyms : - Athlete's foot - macerated toe web-foot ring worm .

Definition : - Tinea Pedis is a fungal infection of the foot including the toe webs usually involving the toe nails and the sole .

The condition may be symptomless accidentally observed during routine examination of the foot for any other complaint or it may present with various symptoms and signs .

Clinical picture : -

1. Symptom free patients : -

here the patint is unaware of the disease process going on in his feet .

The condition is accidentally discovered by the examiner (Abdallah, et al (1971) or the patient may complain of a foul smell of his feet at the end of the day when he takes off his shoes and socks .

In other cases an " Id" eruption which is an allergic responce to a distant focus of dermatophyte infection, may drag the attention of the examiner to the condition

of the feet.

2. Chronic intertriginous type :

This is a very common type, in fect it is the commonest type (Gibbs, 1980).

There is peeling, maceration, slight scaling and fissuring in the interdigital spaces and sometimes spreading to involve the undersurface of the toes, (Rook, 1979), with accompanying malodor and pruritis.

Scaling is the most characteristic and almost invariable sign of ring worm, helping to differentiate ordinary forms of intertrigo (pillsbury, 1956).

Any or all of the interdigital webs may be affected, although most often the skin between the fourth and fifth toes of each foot is involved (Domonkos, 1971).

The reason for predelection of the disorder in the fourth interspace of the foot is that the shoe causes the fifth toe to be in a constant state of flexion and adduction, eventually, the last two toes become so molded, one against the other, that it is difficult to separate

them and renders proper cleansing difficult. Hence, as time goes on, the exfoliated epidermis, instead of being daily removed, remains and becomes macerated in this warm, moist pocket which offers an ideal condition for the growth of fungi (ormsby and Mitchell 1916).

Intertriginous ringworm of feet is rarely seen in persons who, on standing barefoot, show wide spreading of the toes, the toes, the first interspace is the largest anatomically and is the least often involved (pillsbury,1956).

Extension to the undersurface of the toes and the adjacent portion of the sole occurs frequently, and this may continue on to the ball of the foot (Hildich - smith, et al 1964).

The dorsal surface of the toes and feet are not commonly involved in a "pure" ring worm infection, a useful point in differentiating the condition from contact dermatitis due to foot gear or applied medication .

In a low grade subacute form, the intertriginous lesions may persist for months or years, always presenting some desquamation and maceration with recurrent pruritis.

The condition almost invariably becomes worse in warm weather, even during cold weather, undue exposure to heat may produce a prompt exacerbation (pillsbury,1956).

The inflammation is particularly prone to persist unabated in persons with hyperhidrosis, in whom the sweating is dependent upon emotional factors rather than thermal.

When acute flare-ups of intertriginous ring worm occur, the organisms may not be recoverable because they are being cast off rapidly .

Aside from itching, the malodor, and the constant temptation to apply this or that new topical medicament, the most serious complication is secondary bacterial infection which arises most frequently in fissures.

Intertriginous inflammation of the toes may persist frequently in the absence of fungi, this may be part of a more generalized process such as extensive seborrhoeic dermatitis or psoriasis or it may be due entirely to factors of maceration and irritation, to which fungi are making no contribution . (pillsbury, 1956).

It is probable in some cases that the initial inflammation was produced by fungi, which were then cast off, and the process was continued by other factors (pillsbury, 1956).

In many cases of intertriginous inflammation of the toes, the determination to whether or not fungi are present is a matter of academic interest only .

Even if found, the extent to which they are contributing to the inflammation may not be clear .

Bacterial cultures are sometimes helpful, though the recovery of pathogenic strains is, again, not a proof that they are contributing in the eruption .

3. Acute vesiculobullous type :-

Commonly caused by Trichophyton mentagrophyte, the fungus causes an acute inflammatory condition, when it invades the skin of the toes or of the soles a vesicular or bullous eruption occurs .

This manifestation of ring worm often accompanies the intertriginous type and is frequently an evidence of increased sensitization to the organism (pillsbury,1956).

The lesion may actually contain fungi or it may be a dermatophytid i.e. a sensitization reaction in the absence of fungi within the lesion .

The most common sites of involvement by vesicular ringworm are the instep portion of the sole and the heel and ball of the foot, in severe cases, the whole sole may be involved .

The condition may occur suddenly, often with the onset of very warm weather .

Deep seated vesicles, 2-3 mm in diameter, yellowish or when dried brownish, only slightly elevated, of variable size and number develope, these are not characterized by erythema at their onset, they frequently fuse to form bullae or multilocular blisters which contain a yellowish gelatinous fluid pillsbury , 1956).

Vesicles which occur in areas with very thick stratum corneum may appear to be papular and frequently resolve with the formation of a hard keratotic button which persists for a long time .

The rupture of the vesicles and bullae leaves a sensitive and eroded area at the border of which new blisters often form (pillsbury, 1956).

Dyshidrosis (or pompholyx) may be similar but : -

a. Fungi are absent .

b. Hands are usually affected simultaneously (Gibbs,1980).