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Study of tinea cruris in Egypt

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Introduction

Tinea cruris (Eczema marginatum Hebrae) is not uncommon in Egypt. The disease is observed in a good proportion of patients attending dermatologic clinics especially in late summer and early autumn. Sometimes it is seen localised epidemics as in residential schools, sport clubs, persons attending swimming pools etc.

As a part of our serial investigations of the various superficial mycoses of the skin in our country, we report in the present paper the results of study of tinea cruris.

Material and Methods

From patients attending the Dermatology Clinic, Ain Shams University Hospitals, one of the authors selected 298 patients with the clinical diagnosis compatible with tinea cruris. Full clinical history and description of the lesions were done by two of the authors separately. All patients who received antimycotic therapy in the last 3 weeks were excluded from this study.

With a sterile scalpel scrapings were taken in the laboratory and inoculated directly on Sabouraud-dextrose-agar with actidione and chloramphenicol. The agar was distributed in screw capped bottles with wide mouth to facilitate direct inoculation by the scalpel. A portion of the scrapings was examined in 20 % KOH microscopically. All the steps of work including the preparation of agar were done by the authors due to lack of medical technical assistants.

Results

A. Clinical examination: (Fig. 1—3)

Of 298 cases examined 215 yielded positive cultures and showed the following clinical varieties:

1. Progressive, centrifugally spreading semicircular lesions, with an active elevated cord-like edge, covered with crusted papules and vesicles, 1—3 mm in diameter. The center of the lesions was brownish and scaly. In this variety the lesions started often on the upper medial part of the thigh at the point of maximum friction with the scrotum in males or with the other thigh in obese females. In some cases the lesions started on the buttocks. Inguinal lesions extended relatively rapidly to involve the perineum buttocks and pubic area. In extreme cases of long duration the edge of the lesion reached the level of the umbilicus. This clinical variety was observed in 133 patients (61,86 %).

2. In 61 cases (28,38 %) plaque-like, red, semicircular lesions, sometimes with eczematous center were observed. The edge of the lesions showed more activity than the center.

3. Brownish-red, scaly areas without active edge, clinically resembling erythrasma were present in 17 cases (7,90 %).

4. Lichenified lesions suggesting neurodermatitis were seen mainly in cases of long duration, suffering from severe itching. This type was seen in 4 cases (1,86 %).



Fig. 1: Extensive tinea cruris and corporis

Lesions of the last 3 varieties were often confined to the upper medial part of the thigh. Genitalia were affected in only 2 cases (table 1).

Table I: Extent of lesions in cases of tinea cruris

Upper medial sides of both thighs	101
Upper medial side of one thigh	16
Buttocks alone	16
Genitalia	2
Axilla	7
Extensive spread of lesions on thigh, perineum, buttocks and pubic area	37
Lesions of tinea cruris + tinea corporis	36

Of the 179 patients, where the infection was confined to the genitocrural areas and/or buttocks 132 were males (73,74 %) and 47 females (26,26 %). The age varied from 7 to 65 years; but the commonest age affected was between 21 and 30 years (table 2).

Table II: Age distribution of cases of tinea cruris

Age group	No. of cases
Under 10 years	1
11—20 "	50
21—30 "	80
31—40 "	21
41—50 "	17
Above 50 "	10



Fig. 2: Tinea axillaris

The duration of infection varied from few days to several years; but the majority of the cases were seen within 6 months of infection (61,2%). In 8 patients the disease was present for more than 5 years. Two patients had lesions of tinea cruris for more than 10 years. Itching was a constant symptom as 97% of the patients suffered from it. The severity of itching varied from mild discomfort to intolerable one. 72% of the patients claimed that itching was more severe by night.

Of the 179 patients 86 were students. Half of them were living in student houses. 97 patients claimed to sweat profusely and 52 practiced sports, mostly football and swimming.

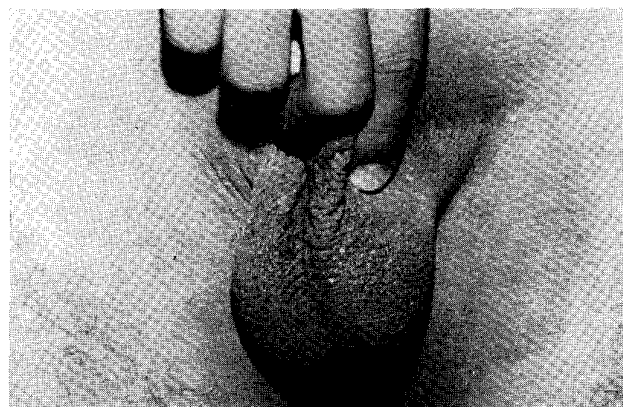


Fig. 3: Erythrasma-like lesion

B. Mycological examination:

In all cases fungal elements were seen in KOH preparations. In cultures *Trichophyton rubrum* was isolated from 111 cases (62,02%), *Epidermophyton floccosum* from 45 cases

(25,14 %), *T. mentagrophytes* from 21 cases (11,73 %) and *T. violaceum* from 2 cases (1,11 %), (table 3).

Table III: Dermatophytes isolated from cases of tinea cruris

Dermatophyte	No. of isolations	%
<i>Trichophyton rubrum</i>	111	62,02
<i>T. mentagrophytes</i>	21	11,73
<i>T. violaceum</i>	2	1,11
<i>Epidermophyton floccosum</i>	45	25,14

Discussion

Although it is commonly mentioned that tinea cruris is a rare disease of females, yet more than one quarter of our cases were females (26,26 %). ALTERAŞ (1968) in a similar study in Romania reported infection in females in 21,4 % of his cases. He attributed such a relatively high incidence to the change in the social life of ladies in the last years with more possibility of attending public places and consequently more chance of exposure to infection.

The prevalence of tinea cruris in males is usually explained on the basis that the space between the scrotum and thigh retains sweat and provides more favourable conditions for the growth of dermatophytes. On the other hand, females are less affected, because the inguino-labial fold does not provide such increased humidity. The fact that the infection started at the point of maximum friction between the thigh and scrotum in males, and between the two thighs in females showed that mild friction trauma helps localisation of dermatophytes on the skin (ABDALLAH, 1971).

Careful inquiry of the married couples suggested that conjugal infection was not common. SABOURAUD (1936) pointed out that in the case of conjugal transmission of tinea cruris "la contagion n'est pas constante". On the other hand many of our patients were either living in student houses or practicing sport, where the possibility of contracting the infection is great. CLAYTON et al. (1961) reported an outbreak of tinea cruris in a male residential police college, and suggested that *Epidermophyton floccosum* was transmitted by infected sheats, blankets and dust. They could isolate the organism from the top of blankets of all 11 mycologically proven cases.

In 4 patients living in student houses, the infection started on the region of the buttocks suggesting that the infection had been contracted from the seats of W. C.

Isolation of dermatophytes was successful in only 215 of 298 cases examined, although all cases were positive in KOH preparations. For economic purposes we used only one screw capped bottle for each sample. This may be not enough. RIETH (1965) recommended the use of at least 4 slants for every specimen and each slant is inoculated at least at 4 points to increase the chance of successful cultures.

T. rubrum was responsible for the majority of cases in our series. It was sometimes difficult to identify, as colonies were similar, to a large extent, to *T. violaceum* or *T. megninii*. A detailed study of such *T. rubrum* strains is reported by ABDALLAH et al. (1972). SANDERSON and SLOPER (1953) in an investigation of tinea cruris among British troops in Malaya and Hong Kong found *T. rubrum* in only 5 % of the cases and *T. mentagrophytes* was the common cause (61 %). In Romania, ALTERAŞ (1968) reported the isolation of *E. floccosum* as the main causative organism of tinea cruris.

Although *T. violaceum* is the commonest dermatophyte isolated from tinea capitis and tinea corporis in Egypt (ABDEL-FATTAH et al., 1967 and EL MAZNY et al., 1972), it was isolated from only 2 cases of tinea cruris. In both cases, the lesions were confined to the buttocks. It seems that crural areas provide unsuitable conditions for the growth of *T. violaceum*.

Summary

The results of clinical and mycological study of 215 mycologically proved cases of tinea cruris done at Ain Shams University, Cairo are reported. Of these 36 cases are associated with tinea corporis. Four clinical varieties are described. The age and sex incidence are analysed and discussed.

T. rubrum is the most common organism isolated (62.02 %) followed by *E. floccosum* (25.14 %). The results are discussed and compared with reports from other parts of the world.

Zusammenfassung

Die Ergebnisse der klinischen und mykologischen Untersuchung von 215 mykologisch gesicherten Fällen von Tinea cruris aus der Ain Shams-Universität in Cairo werden mitgeteilt. 36 dieser Fälle hatten zusätzlich eine Tinea corporis. 4 klinische Variationen sind beschrieben. Der Einfluß von Alter und Geschlecht auf die Häufigkeit des Vorkommens wurde analysiert und diskutiert.

Trichophyton rubrum wurde am häufigsten isoliert, nämlich in 111 von 179 Fällen mit Befall der Genitocruralgegend (62,02 %). Am zweithäufigsten wurde *Epidermophyton floccosum* gefunden: 45 Fälle = 25,14 %. Dann folgte mit 21 Fällen (= 11,73 %) *Trichophyton mentagrophytes* und schließlich *Trichophyton violaceum* mit 2 Fällen (= 1,11 %).

Die Befunde wurden mit Berichten aus anderen Teilen der Welt verglichen und diskutiert. Der stärkere Befall der Männer (132 Fälle) gegenüber 47 entsprechend erkrankten Frauen wird durch die anatomischen Unterschiede erklärt.

Auffällig ist, daß nur in 2 Fällen *Trichophyton violaceum* isoliert wurde, obwohl dieser Pilz in Ägypten als Erreger von Tinea capitis und Tinea corporis häufig vorkommt.

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