

Tinea Capitis In Assuit Governorate: (A Clinical and Mycological Study)

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Abstract

Tinea capitis is a common condition seen by clinician in all setting through out the world. Several investigations of the various superficial mycoses were carried out in Egypt, but they were mainly confined to urban areas.

In the present work, the predominant species causing dermatophytosis in Assuit Governorate were investigated, this is represented in rural and partially suburban communities. A clinical and mycological study was done for hundred patients attending the Dermatology Out-patient Clinic in Al- Azhar University Hospital in Assuit City. The ages of patient ranged from 3 to 20 years .

- 60% of cases were between 6-10 years of ages.
- Males were affected more than females in a ratio of 3: 1
- 60% of cases were from rural areas. Positive history of contact with animals was present in 40%.
- The most common clinical variety was scaly type 55% followed by black dot 22%, kerion 20%, and lastly favus 3%.
- Direct microscopic examination was + ve in 80% of cases. Positive culture results were obtained in 90% of cases.
- The results indicated that Zoophilic dermatophytes was the predominant causative species in these regions. Five dermatophytes were identified namely: *M.canis* was the most frequently isolated organism from the clinical varieties of dermatophytosis (55%) . followed by *T. violaceum* (20%). *T. rubrum* 12.8% , *M. gypseum* (10%) and lastly *T.soudanense* (2.2%).

Key Words: Tinea capitis – Mycology.

Materials and Methods

Hundred patients, diagnosed clinically as cases of Tinea capitis attending the skin and venereal diseases out – patients clinic in Al-Azhar University hospital in Assuit City were investigated in this work by history taking, clinical and mycological examinations.

Patients were examined during the period from October 2003 to November 2005, they were resident in Assuit and nearby villages. Cases known to have received topical or systemic antimycotic

therapy in the last 3 weeks were not included.

Materials for mycological examination obtained from the lesions was packed in small paper envelopes sealed and labelled.

Direct microscopic examination of 15% KOH preparations was carried out. Cultures were done on modified Sabouraud's cyclohexamide chloramphenicol agar slants (Rohman *et al.*, 1947) and (Zohdi *et al* 1988)

Two slants were used for every patient and each slant was inoculated with four to five particles at 25-27°C and

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observed for three to four weeks. The colonies were identified according to their rate of growth; macroscopic and microscopic characteristics.

Results :

1. Clinical Findings:

In our study, 100 patients clinically diagnosed as Tinea capitis, were investigated 60 patients were from rural areas and 40 were from urban areas.

Table (1): Age distribution of the studied cases.

Age group (years)	No. of cases	%
0-<5	29	29
5-<10	60	60
10-<15	8	8
15-<20	2	2
20-<25	1	1

Table (2): Sex ratio of the studied cases.

Sex	No. of cases	%	Ratio
Males	75	75	3:1
Females	25	25	

Table (3): Distribution of clinical types of T. capities.

Clinical types of T.capitis	No. of cases	%
Scaly type	55	55
Black dot	22	20
Kerion	20	22
Favus	3	3

Table (4): Distribution of different clinical types in relation to age.

Age group (years)	Total No. Of cases	Scale type		Black dot		Kerion		Favus	
		No.	%	No.	%	No.	%	No.	%
1-<5	29	20	64.5	7	25.08	2	9.7	-	0
5-<10	60	30	54.5	14	25.5	11	20	5	0
10-< 15	8	4	50	4	40	-	0	+	10
15-<20	2	1	33.3	1	33.3	+	33.3	-	0
20-<25	1	-	0	1	100	-	0	-	0

Table (5): Distribution of different clinical types in relation to sex.

Sex	Scaly type		Kerion		Black dot		Favus	
	No.	%	No.	%	No.	%	No.	%
Males	40	77.7	18	24	20	36.3	3	5.4
Females	15	27.2	2	3.6	2	3.6	-	0

Table (6): Findings of microscopical and cultural examination

Examination	Positive cases		Negative cases	
	No.	%	No.	%
Microscopic	80	80	20	20
Culture	90	90	10	10

Table (7): Clinical types of tinea capitis in relation to mycological findings:

Clinical types	Total no. of cases	+ve micro& +ve culture		+ve micro&-ve culture		+ve culture &-ve micro		- ve cluture &-ve micro	
		No.	%	No.	%	NO.	%	No.	%
Scaly Type	55	40	72.7	5	9	10	18	-	0
Black Dot	22	10	81.8	2	10	1	4.5	1	4.5
Kerion	20	10	80	2	9	4	20	-	-
Favus	3	-	0	2	66.6	-	0	-	0
Total	100	72	72	10	10	17	17	1	1

Table (8) Percentage of isolated causative organisms.

Organism	No.	%
M.Canis	45	55
T. violaceum	20	20
T. rubrum	12	12.8
M.gypseum	9	10
T. soudanense	2	2.2
Total	88	100

Table (9) Causative organisms of each clinical type of tinea capitis

Clinical type	Total No. of cases	+ve culture		M. canis		T. violaceum		T. rubrum		M. gypseum		T. Soudanense	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Scale	55	52	94.5	30	54.5	10	18.1	6	10.9	5	9	1	1.8
Kerion	20	18	90	10	10	4	20	2	10	1	5	1	5
Black dot	22	15	68	8	61.5	4	30.7	1	7.7	2	0	-	0

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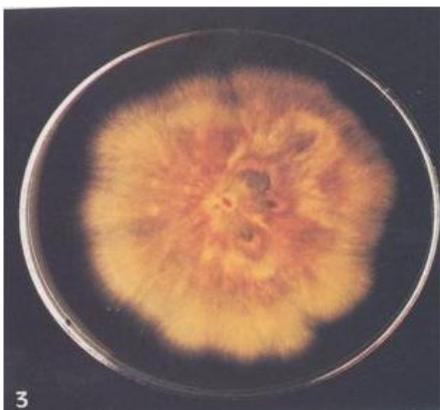


Fig. (1):M. canis (macroscopic examination)



Fig. (2):M. canis (microscopic examination)

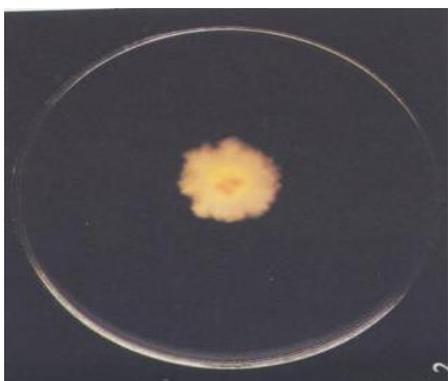


Fig. (3):T. violaceum (macroscopic examination)



Fig. (4):T. violaceum (microscopic examination)

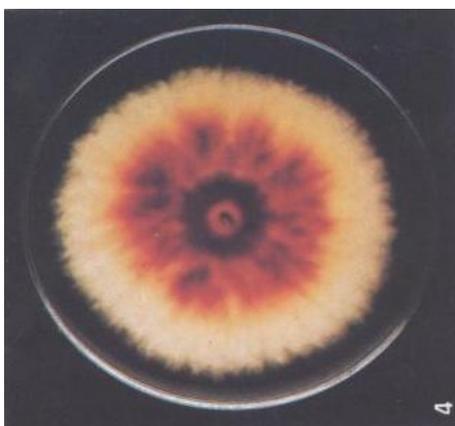


Fig. (5):M. gypseum (macroscopic examination)

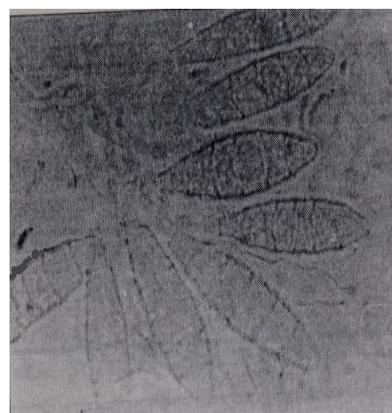


Fig. (6):M. gypseum (microscopic examination)

Discussion

Tinea capitis is one of the most prevalent dermatomycoses and it still represents a major health problem among children of school- age in Egypt. (Aballah *et al* ., 1985). It occurs primarily in prepubertal children over the age of six months. The clinical appearance of infection is most variable, depending on the type of hair invasion (which is species determined), the level of host resistance and the degree of inflammatory host response. (Abdel fattah *et al.*, 1967 and Amer *et al* ., 1981).

In this study , most of the cases were children between 5-10 years, representing about 60% of cases. This may be due to the following factors: 1) the lack of natural protective mechanism of saturated fatty acids in the sebum of children, being less in amount than adult sebum (Rohman *et al* ., 1947. 2) Poor health habits at this period of life especially in rural areas. 3) Contact in school. This result agrees with many reports from Egypt (Zohdi *et al* ., 1988 and Moubasher *et al* ., 1992) , Nigeria Ajao *et al.*, 1985 , India Sehgal *et al* ., (1985) , Saudi Arabia Sehgal *et al* ., 1985 and also nearly agrees with the results reported from Pakistan Hussain *et al* . (1994) . Also, tinea capitis is regarded as rare in adults, except in patients with immunologic disturbance. (Barlow *et al* ., 1988).

In the present study, we found only 2% of cases in the age group (12-20) years and also 1% of cases in the age group (20-25) years. These results were also reported by many studies (Zohdi *et al* ., 1988 and Moubasher *et al* ., 1992) ; (Ajao *et al.*, 1985); (Sehgal *et al* ., 1985) ;(Sehgal *et al* ., 1985) ; (Hussain *et al* ., 1994) and (Barlow *et al* ., 1988). Also it was found that males were more commonly affected than females in a ratio of 3:1, this male preponderance is in agreement with several reports (Sehgal *et al* ., 1985) ;(Sehgal *et al* ., 1985) and (Hussain *et al* ., 1994).

Scaly ringworm was the commonest clinical type found in this study 55% followed by black dot (22%), Kerrion (20%) and lastly favus (3%). Similar results

were also reported from several studies (Sehgal *et al* ., 1985) ; (Sehgal *et al* ., 1985) and (Hussain *et al* ., 1994) .Other studies reported that black dot type was the commonest mode of presentation followed by scaly type, Kerion and agminate folliculitis Al-Sogair *et al.* ,1989 and Lestringant *et al.*, 1991).

Of 100 evaluable patients, the direct microscopic examination was positive for fungal pathogens in 80 % while culture results were positive in 90% of cases. So, in laboratory diagnosis of tinea capitis, it is advisable to depend on both microscopical as well as cultural examinations. Among the isolated pathogens, *M. canis* was found most frequently, in 45 patients, *T. violaceum* in 20 patients and *T. rubrum* was found in 12 patients. This finding is in agreement with other reports from New – valley Governorate Moubasher *et al* ., 1992, Saudi Arabia Al-Sogair *et al.* ,1989 Kuwait Al-Fouzan *et al* , (1993). United Arab Emirates Lestringant *et al.*, 1991 and Qatar El-Benhawi *et al* , (1991). On the other hand, some investigators reported that *T. violaceum* was the pathogen most frequently isolated followed by *M. canis*. These reports were from Ismalia Zohdi *et al* (1988). Cairo and Netherlands Willigen *et al* ,(1990) . In Pakistan El-Benhawi *et al* , (1991). *T. violaceum* was the most predominant etiologic agent while *M. canis* was not isolated. Other rare organisms which were encountered in this study included *M. gypseum*, *T. soudanense*. These rare dermatophytes were also reported from New Valley and Kafr El Sheikh governorate (Amer *et al.*, 2000).

In conclusion , the present study gives an idea on the clinical and mycological aspects of tinea capitis in Assuit Governorate and showed that the disease is still a public health problem in rural as well as urban areas and needs more medical care.

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دراسة إكلينيكية وفطرية لتينيا الرأس في محافظة أسيوط

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تعتبر تينيا الرأس من أكثر الأمراض الجلدية الفطرية انتشارا في مصر والتي مازالت تمثل أحد المشاكل الطبية و الإجتماعية و البيئية التي لها جانب إقتصادي في مصر خصوصا بين أطفال المدارس .

وقد أجري هذا البحث علي مائة مريض من بين المرضى المترددين علي العيادة الخارجية للأمراض الجلدية و التناسلية بمستشفى كلية طب الأزهر فرع أسيوط . وقد تم فحص المرض من الناحية الإكلينيكية و الفطرية وقد وجد أن أعمار المرضى تتراوح من سن ثلاثة وحتي عشرون سنة وقد سجل حدوث المرض في الأطفال الذين تراوحت أعمارهم من 6 إلي 10 سنوات أعلي نسبة عن باقي الأعمار وقد وجد أن الذكور أكثر إصابة بالمرض (75 %) من الإناث (25 %) وقد وجد أيضا أن (60 %) من المرضى يقطنون في المناطق الريفية بينما (40 %) يقطنون في المدن وكان أكثر الأنواع انتشارا هو النوع القشري العسلي (55 %) و بالفحص المجهرى وجد أن (80 %) إيجابية للفطر وكانت نتيجة المزارع إيجابية في (90 %) من الحالات . وقد أمكن عزل خمسة أنواع مختلفة من الفطريات وهي ميكروسبورم كانس (55 %) , ترايكوفيتون فيولاشيم (20 %) , ترايكوفيتون روبروم (12.8 %) , ميكروسبورم جبسيوم (10 %) , و ترايكوفيتون سودانينس (2.2 %) .

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