

قسم الميكروبيولوجيا
كلية الطب - جامعة أسيوط
رئيس القسم : أ.د/ ماهر مختار زكي •

فطريات القراع بجمال الصعيد

عبدالخالق الطماوي ، اسماعيل صديق ، محمد عطية

تم أخذ ٢٠٠ عينة شعر وقشور من ٢٠٠ جمل وزرعت على مستنبت السابارود دكستروز
أجار • وتم عزل وتصنيف ٣٢ عترة كآآتي : ١٤ (٧%) ترايكوفيتون فيروكوزيم و ٨ (٤ %) ،
ترايكوفيتون مناجرزفيتس و ٦ (٣ %) ميكروسبوريم كانيس و ٤ (٢ %) ميكروسبورييم
جيبسيسيم •

وقد عزل الترايكوفيتون تريسترا من ١٥% من الجمال السليمة وقد أظهرت نتيجة
فحص ١٠٠ عينة تراب أخذت من الأماكن التي يقطنها الجمال وأظهرت نتيجة الفحص
وجود ١٠٦ عترات على التوالي من الترايكوفيتون ترايسترا والميكروسبوريم جيبسيسيم
وقد جربت الفطريات المعزولة من الجمال على مقدرة العدوى لأنواع مختلفة من الشعر
(الأبقار - الجاموس - الخيول - الكلاب - الانسان) باستخدام طريقة الشعر وقد أظهرت
نتائج متنوعة •

وبإجراء اختبار الحساسية على عقاري الجريزوفلفين والنيوستاتين للفطريات المعزولة
وجد أن جميعها شديد الحساسية للجريزوفلفين ومقاومة لعقار النيستاتين حتى تركيز
١٦٠ وحدة / ١ سم •

Dept. of Bacteriology,
Faculty of Med., Assiut University,
Head of Dept. Prof. Dr. M.M. Zaki.

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CAMEL RINGWORM IN UPPER EGYPT
(With 6 Tables)

By
A.M. EL-TIMAWY; L SEDDIK and M. ATIA
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SUMMARY

Hair and Scale samples collected from 200 camels, were cultured on Sabouraud's dextrose agar. 32 strains of dermatophytes were isolated and identified as such: 14 (7%) strains Tr. verrucosum, 8(4%) strains of Tr. mentagrophytes, 6(3%) strains of M. canis and 4(2%) strains of M. canis and 4(2%) strains of M. gypseum. M. canis was isolated for the first time from camels in Upper Egypt.

Tr. terrestris was isolated from 15% of healthy camels. Examination of 100 soil samples collected from animals inhabitants revealed the presence of 16 and 10 strains of Tr. terrestris and M. gypseum respectively.

Susceptibility of the isolated dermatophytes to infect different types of hair (Cattle, buffaloes, horse, dog and human hair), was studied by hair bait technique and variable results were noted with the dermatophytes.

All strains of dermatophytes were sensitive to griseofulvin and completely resistant to nystatin in concentration of 20, 40, 80 and 160 unit/ml of media.

INTRODUCTION

The animal health plays a role in the economic and zoonotic importance to the human. NASSER (1969) reported that Tr. verrucosum was considered the main causative agent of camel ringworm. KHAMIEV (1982) observed that ringworm was widely spread between camels. This may be due to poor hygienic measures in the places where camels are kept as denoted by ABD EL-KADER (1985).

BOEVER and RUSH (1975) described a case of ringworm in female dromedary camel about 21/2 years old, while KUTTIN and BEEMR (1975) isolated Tr. mentagrophytes from two camels during their research on fungi isolated from birds, animals and two camels. CHATTERJEE, et al. (1978) isolated and identified Tr. schoenleinii from camel in Acireus in Calcutta.

KHAMIEV (1979) studied the camel ringworm and proved that the causative agent of the infection was Tr. verrucosum.

ABDEL-GALIL (1981) mentioned that M. gypseum and Tr. terrestris were the most common dermatophytes isolated from soil samples collected from cattle farms in Assiut province. KHAMIEV (1981) described the clinical symptoms of trichophytosis among camels. AHMED

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(1984) reported the presence of M.gypseum, Tr.terrestre, Tr.mentagrophytes, C.panorum and C.keratinophilum in soil samples collected from Upper Egypt.

The aim of this study was carried out to investigate the following:

- Estimation of the prevalence of ringworm in diseased as well as apparently healthy camels.
- Isolation of pathogenic dermatophytes from soil of camel's dwellings.
- Susceptibility fo different types of hair to infection with the isolated fungi.
- Sensitivity of the isolated fungi to some antimycotic drugs.

MATERIAL and METHODS

Samples were collected from the infected animals by scraping of the crusts and hair from the periphery of lesions by sterile scalpel. The prepared samples were examined microscopically for the presence of fungal infection. All samples were collected on Sabouraud's dextrose agar medium (AJELLC, et al. 1963). Two cultures from each sample were incubated one at room temperature and the other at 37°C for a maximum of 6 weeks. The technique described by VANBREUSEGHEM (1952) was applied for isolation and identification of dermatophytes from camels and soil.

Susceptibility of different hair to infection with the isolated fungi was carried out using "hair-bait technique" as described by REFAI and ABDALLAH (1971).

The in-vitro sensitivity test of isolated fungi to both griseofulvin and nystatin was adopted as described by LENHORT (1969).

RESULTS

The results of microscopical and cultural examination as well as the incidence of isolated fungi and percentage are denoted in Table (1) and (2). It was observed that the lowest percentage (3%) was recorded in Sedfa and the highest percentage was observed in Tema (5%). As regards the isolated pathogenic fungi it was noted that Tr.verrucosum was recorded in 14(7%) cases, Tr.mentagrophytes in 8(4%), M.canis in 6(3%) while M.gypsum in only 4(2%) cases. In apparently healthy camels only Tr.terrestre was isolated from 16 cases out of 60 examined camels.

The results of mycological examination of soil samples are recorded in Table (4).

It was found that all types of hair used in this research were susceptible of M.gypseum.

The effect of griseofulvin and nystatin on the growth of the isolated fungi is shown in Table (6). It was observed that nystatin in the different concentrations had no effect while griseofulvin at a concentration of 10 ug/ml inhibited the growth of M.canis and Tr.mentagrophytes while T.terrestre was inhibited at 40 ug/ml only.

DISCUSSION

Ringworm infection in camel was detected in some cities in Assiut and Sohage province. The infection was detected by both microscopical and cultural examination. It was found that 32(16%) cases were positive out of 200 examined camels while ABD EL-KADER (1985) denoted

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that 24% were positive to camel ringworm in Assiut. The main cause of infection was Tr.verrecosum since it was isolated from 14 cases (7%), and this result is higher than that reported by NASSER (1969) and ABD EL-KADER (1985). Tr.verrecosum was also isolated from camel ringworm by KHAMIEV (1979) and TORKY and HAMMED (1981). In our investigation T.mentagraphytes was isolated from 8(4%) cases and a similar observation was noted by other workers (KUTTIN and BEEMER, 1975; TORKY and HAMMAD, 1981 and ABD EL KADER, 1985). M.gypseum was isolated from 4(2%) of our camels and also 3 camels out of 100 camles by ABD EL KADER (1985). Besides, the same organism was isolated by BOEVER and RUSH (1975) from camel affected by ringworm. M.canis was isolated from Sohage for the first time and it was isolated by ABD EL KADER (1985) in Assiut province who denoted that camels can be infected by M.gypseum and M.canis at the same time. However, in our investigation no cases was recorded as mixed infection and it was observed that young camels were more susceptible to ringworm than older ones. The latter result is in agreement with that reported by KHAMIEV (1981) and ABD EL KADER (1985) because of young camel are commonly less resistant than older ones or it may not be previously attacked by any dermatophyte.

Tr.terrestre was isolated only from apparently healthy camles. It is concluded that camles plays an important role in the epidemiology fo mycotic infection of man and animals with M.gypseum, Tr.mentagraphytes and Tr.terrestre (CHATTERJEE, et al. 1980). In our study M.gypseum and Tr.terrestre were isolated form soil samples (16% and 10% successively) and many authors reported the isolation of these dermatophytes from soil (AJELLO, 1956; DOUPAGNE, 1959; ABDEL-GALIL, 1981; AHMED, 1984 and ABD EL KADER, 1985).

As regards the susceptibility of different type of hair to isolated fungi, it was observed that all the types were susceptible to M.gypseum in contrast to that reported with M.canis which did not affect any hair even that of dog. It should be mentioned that pathogenicity of dermatophytes depends on many factors other than the susceptibility of hair to invasion with these fungi (RIPPON, 1982). In addition, this observation may be of balue for isolation of dermatophytes from soil samples using the hair bait technique. The result of in-vitro sensitivity test of griseofulvin and nystatin are similar to that recorded by AHMED (1975), and ABDEL KADER (1985) since no effect was noted with nystatin while complete inhibition was reported with Griseofulvin at 40 ug/ml.

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Table (1)
The incidence of dermatophytes in the affected camels

Locality	No. of examined camels	+ve for dermatophytes	
		No.	%
Tema	50	10	5
Sedfa	50	6	3
El-Egal	50	8	4
Tehta	50	8	4
Total	200	32	16

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Table (2)
Types of the isolated dermatophytes from diseased and clinically healthy camels

No. of examined animals	Isolated fungi				M.canis		M.gypseum		T.terrestre	
	Tr.verrucosum		Tr.mentagrophytes							
	No.	%	No.	%	No.	%	No.	%	No.	%
Diseased (200) camels	14	7	8	4	6	3	4	2	0	0
Clinical healthy camels (control 60)	0	0	0	0	0	0	0	0	16	26.67

Table (3)
Relation between age and positive cases

Age group (year)	No. of Diseased animal	Positive cases	
		No.	%
From 1-5	60	10	16.67
From 6-10	140	22	15.71

Table (4)
Types of isolated fungi soil samples

No. of samples	Type of fungal isolates				Total positive		Negative samples	
	M.gypseum		T.terrestre					
	No.	%	No.	%	No.	%	No.	%
100	16	16	10	10	26	26	74	74

Table (5)

Susceptibility of different types of hair to infection with the isolated fungi

Isolated fungi	Human's	Horse's	Buffaloe's	Cattle's	Dog's
<u>M. canis</u>	-	-	-	-	-
<u>M. gypseum</u>	+	+	+	+	+
<u>T. verrucosum</u>	-	-	+	+	-
<u>T. mentagrophytes</u>	+	-	+	+	+

- : negative

+ : positive

Table (6)

Sensitivity of isolated fungi to griseofulvin and Nystatin

Isolated fungi	Griseofulvin concentration				Control	Nystatin concentration				Control
	5 ug/ml	10 ug/ml	20 ug/ml	40 ug/ml		20 un/ml	40 un/ml	80 un/ml	160 un/ml	
<u>N. canis</u>	+	-	-	-	+	+	+	+	+	+
<u>M. gypseum</u>	+	+	-	-	+	+	+	+	+	+
<u>T. verucosum</u>	+	+	-	-	+	+	+	+	+	+
<u>T. mentagrophytes</u>	+	-	-	-	+	+	+	+	+	+
<u>T. terrestre</u>	+	+	+	+	+	+	+	+	+	+

- : No growth

+ : normal growth.

