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CLINICAL AND DIAGNOSTIC ON RINGWORM INFECTION IN CATTLE IN DIYALA PROVINCE OF IRAQ

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SUMMARY

Dermatomycosis (ringworm) was studied in 15 infected, out of 55 examined cows, 6 months to 2 years of age. Infected cows showed typical clinical signs and lesions of ringworm.

Both types of dermatophytes i. e. Trichophton and microsporum were isolated from these cases. The isolates were the following :

Tr. Verrucosum (40%), Tr. mentagrophytes (6.6%), Tr. megnini (6.6%), Tr. ajelloi (20%), M. nanum (20%) and M. gypseum (6.6%).

INTRODUCTION

A vital goal of veterinary preventive and therapeutical medicine is to have healthy stocks of animals that are free from various diseases. This is quite important from both, the economic and zoonotic reasons, and it is needless to emphasise the importance of skin diseases in this concern. Dermatmycosis in cattle is one of the most commonskin disease and it occurs more frequently among housed cattle due to frequent contact between animals (Ainsworth and Austwick, 1973).

Several species of dermatophtes are commonly capable of causing skin lesions in cattle and they include : Tr. Verrucosum,

Tr. mentagrophytes, Tr. megnini, Tr. verrucosum var album and Tr. verrucosum var discoides (Blood and Radostits, 1989).

The disease had been from different regions of the world like Britain (Pepin and Austwick, 1968), France (Guilhon et al, 1955), Germany (Kielstein and Weller, 1965), Egypt (Abou-Gabal et al, 1976) and South Africa (Scott, 1975). The disease was reported in Iraq by Abdallah and Al-Khayyat (1976) who described different cases of human ringworm of horse origin that was caused by the fungus Tr. equinum, by Abdallah et al (1978), by Al-Agady (1991) and also by verrucosum in cows.

The present study was designed to study the clinical signs of dermatmycosis in 15 infected cows in Diayla province of Iraq, beside the isolation and identification of the causative dermatophytes in these cows.

MATERIALS AND METHODS

Samples were collected from 15 infected out of 55 examined cows aged between 6 months and 2 years, in Diayla province. All samples were collected by scraping of the crusts and hairs from the periphery of the lesion, using sterile scalpe and test tubes, for cultural examinations, using Sabaroud's dextrose agar medium (Ajello et al, 1953). Two cultures from each sample were incubated, one at room temperature and the order at 37°C, (Jungerman and Schwartzman, 1972), for a maximum of 6 weeks. In this study the technique described by Carter (1975) was applied for isolation and indentification of dermatophytes from cows.

RESULTS

A- Clinical signs:

Typical lesions were seen in all infected cows, characterized by the presence of a heavy grey-white crust raised above the skin. The usual circular lesions were about 2-3 cm in diameter. Four cows showed moist skin surface below the crusts and the others showed

scab that become detached. Pityriasis and alopecia were present too (Fig. 1). Lesions were commonly observed on the neck and head in most case, however, a generalized distribution of lesions was seen in other particularly those of younger cows.

B- Direct microscopic examination:

All materials taken from lesions of the infected cows revealed mosaics or rows (chains) of arthrospores outside the hair (ectothrix) or inside it (endothrix). In some cases the presence of hyphae within the examined materials was noticed.

C- Cultural examination:

Cultural investigation findings including detailed gross description and microscopic findings of the colonies of various isolated dermatmophtes are shown in table 1. Accordingly, the identified dermatmophtes in this study were:
Tr. verrucosum, Tr. mentagrophytes, Tr. megnini, Tr. ajelloi, M. nanum and gypseum. Number of infectedcows and percentage of each isolated dermatmophtes were shown in the same table.

Table -1- Isolated dermatmophtes and their cultural and microscopical discripition.

Isolated fungi and thier percentage	No. of Infected cows	Cultural findings: colonies description an Microscopic characteristics.
Tr. verrucosum (40%)	6	Colony slow growing, glabrous, folded an heaped, with greyish-white surface, while t reverse is colourless. Macroconidia rare microconidia clavate. (Fig. 2).
Tr. mentagrophytes (6.6%)	1	Colony granular cream to light buff, finel powdery and pink tinged. Reverse is dee reddish. Macroconidia rare and microconidi abundant subspherical and borne along th hyphae
Tr. megnini (6.6%)	1	Colony flat, fluffy, heaped-up folded an radially grooved. Reverse is reddish. Colo slow growing. Macroconidia rare and microconidia abundant.
Tr. ajelloi (20%)	3	Colony flat or heaped and folded with powde surface and cream to tan-orang in colou Reverse is colurless. Macroconidia and microconidia are abundant. (Fig. 3).
M. nanum (20%)	3	Colony flat and floccose, initially white bu later buff in colour, powdery, with folde center, Reverse, calvate, smoothed walled an one celled. (Fig. 4).
M. gypeum (6.6%)	1	Colony initially white and floccose powdery granular and buff to cinnamon-brown in colo with centeral umbo and irregular fringed borde Reverse pale yellow. Macroconidia and microconidia abundant. (Fig. 5).

DISCUSSION

Although ringworm is known to occur worldwidely, it seems that keeping animals intensively and in close contact predispose for high incidence. Season of the year, humidity, level of nutrition and age of animal are important factors in the spread of the disease (Pascoe, 1979; Blood and Radostits, 1989; Jungerman and Schwartzman, 1972). Source of infection could be an infected animals and contaminated soil and utensile (Vander Hoeden, 1964), or even an infected owner or farm worker (Andrews and Edwardson, 1981).

In our study, the clinical signs that were noticed on the fifteen infected cows in Diyala province were similar to those reported previously by Pepin and Austwick, 1968; Jungerman and Schwartzman, 1972; Edwardson and Andrews, 1979 and Al-Delaimi et al, 1988).

Tr. verrucosum, Tr. mentagrophytes, Tr. megnini, Tr. ajelloi, M. nanum and M. gypseum were isolated from skin lesions of cows included in this study and from Diyala province of Iraq. One or more of the first three above isolates were previously reported as a cause of cattle skin disorders in Iraq or elsewhere by variousworkers (Abdallah and Al-Khayyat, 1976; Abdallah et al, 1978; Jungerman and Schwartzman, 1972; Gillaspise and Timony, 1981; Al-Delaimi et al, 1988; Blood and Radostits, 1989 and Al-Jashamy, 1993). However, the last three types of isolates, i. e. Tr. ajelloi, M. nanum and M. gypseum seems to be reported for the first time as a cause of dermatomycosis, in cattle, in Iraq or possibly abroad.

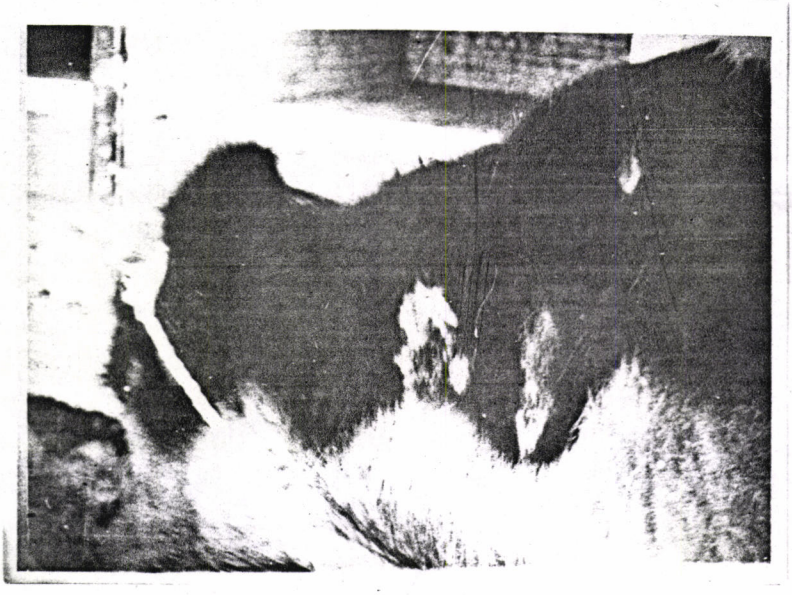

Fig. 1. Bovine ringworm with pityriasis and alopecia.

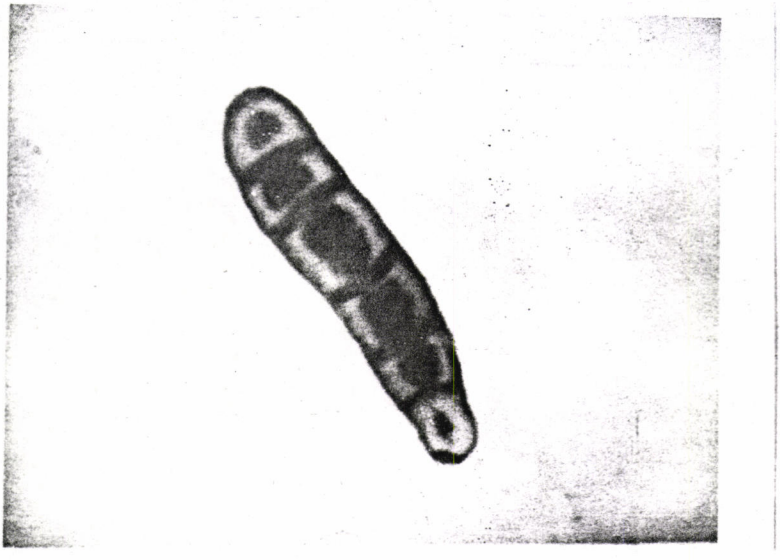

Fig. 2. Macroconidia of Tr. verrucosum.

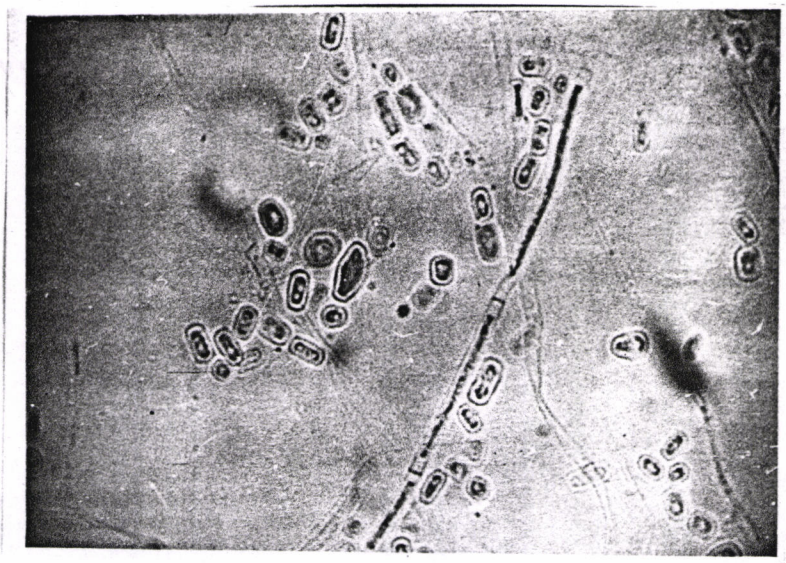

Fig. 3. Arthrospores and microconidia of Tr. ajelloi.

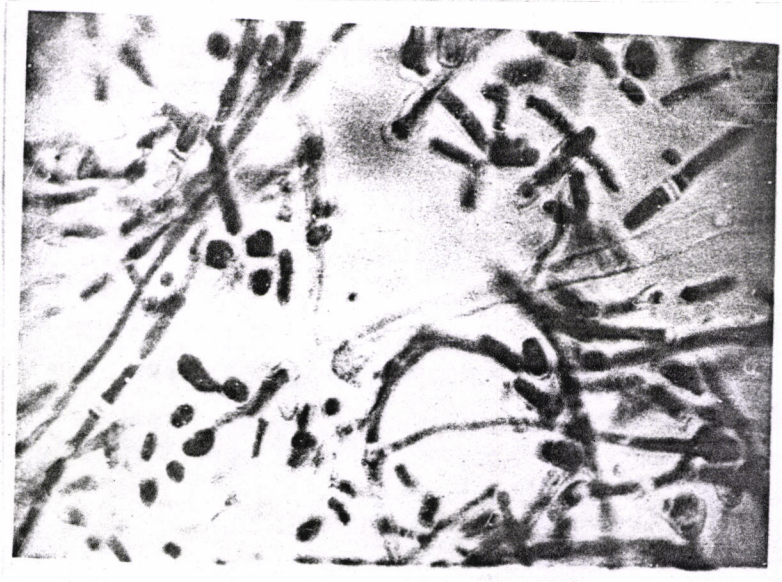

Fig. 4. Arthrospores and microsporum nanum.

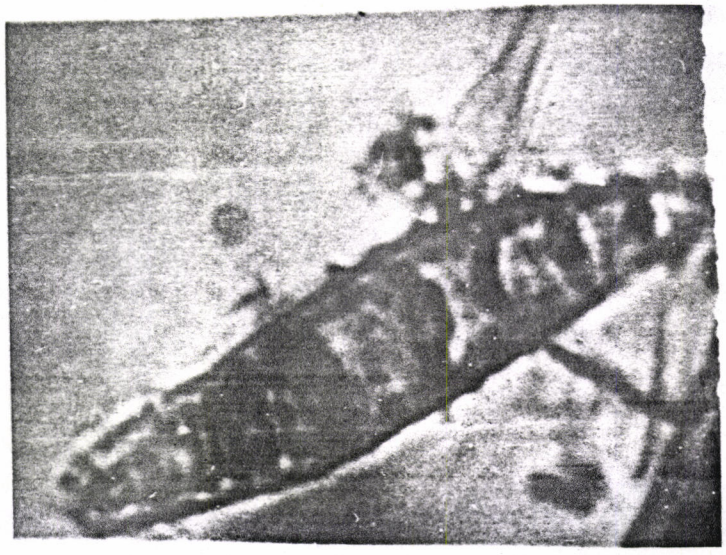

Fig. 5. Macroconidia of M. gypseum.

Previous reports from Iraq which were refered to in this study with the exception of Al-Jashamy (1993) mentioned Tr verrucosum to Tr mentagrophytes only as an isolated dermatophytes from cattle. Al-Jashamy (1993) managed to isolat Tr verrucsum from 10 cases and M. canis from 4 cases only when examined 2759 cows in Baghdad areas. Even in our study. Tr verrucosum represented the highest percentage of isolates (40%).

Because of the importance of dermatomycosis in animals and man, we suggest that enough attention should be given to this subject concerning:

i- The species specifity i.e. species of animals infected V species of dermatophyte isolated

ii- The zoonotic nature of the various epidemics of dermatomycosis.

iii- The role of vaccination and its validity as a mean for the prevention of ringworm infection in cattle or other livstook in Iraq.

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دراسة سريرية وتشخيصية عن مرض القوباء الحلقية بالابقار في منطقة ديالى – العراق

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الخلاصة

تم دراسة مرض الفطار الجلدي (القوباء الحاقه) في (15) بقره مصابه من بين (55) بقره مفحوصه تراوحت اعمارها بين (6) أشهر وسنتين أظهرت الابقار المصابة الاعراض والآفات النمطية المتوقعة للمرض.

تمكنا من خلال هذه الدراسةمن عزل كلا النوعين من الفطر الجلدي أي الترايكوفايتون والمايكسروسبورم من هذه الحالات المرضية وكانت العزولات الفطرية ونسبها كما يلي :-

Tr. megnini (6.6%), Tr. mentagrophytes(6.6%), Tr. verrcosum (40%) M. gypseum(6.6%), M. nanum(20%), Tr. ajelloi(20%).