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STUDIES ON ULCERATIVE LYMPHANGITIS IN BUFFALOES IN ASSIUT

(With 2 Tables)

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(Received at 28/2/1995)

دراسة عن التهاب الجلد التقرحي فى الجاموس فى محافظة أسيوط

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تم فحص ٣٠ حالة جاموس مصابه بمرض الجلد الاوديمى فى محافظة أسيوط وتمت مناقشة الاعراض المرضية لهذا المرض وأمكن عزل ميكروب ستريبتوكوكس فيكالس بنسبة (٣٣ر٣٪) وكورينى اوفس بنسبة (٣٣ر٨٣٪). تم عمل اختبار الحساسيه للميكروبات المعزوله ووجد اشدهم تأثيرا بالترتيب الاتى: الجنتاميسين - السيفالوشين - الريفاميسين - الارثروميسين - الكلورمفينكول والدانفلكزوسين وبدرجات متفاوته لكل من الكلوستين - أمبيسلين - كلوكسين - بوليميسين - حمض النالدسك ومقاوم لكل من نيتروفيورون - التتراسيكلين - دكسيلن. تم علاج الحيوانات المصابه بالمضادات الحيويه طبقا لنتائج أختبار الحساسيه للحالات الحديثه وعن طريق التدخل الجراحى والمضادات الحيويه فى الحالات المتأخره. تم مناقشة الشروط الصحيه لمقاومة هذا المرض.

SUMMARY

This study was carried out on 30 buffaloes aging (1-7 years) clinically affected by oedematous skin disease in different locality in Assiut Governorate. The clinical signs of affected animals has been described. The isolated organism in this investigation was one isolate of Streptococus faecalis (3.33%) and 25 isolates of Corynebacterium ovis (83,33%) which represent the main cause of this disease. In refering to the effective treatment of affected animals, sensitivity test was carried out on various types of antibiotics. The isolated organisms were hightly sensitive to Gentamycine, Cephalothin, Rifampicine, Erthromycin and Chloramphenicol. The hygienic measures in cantrolling the disease was discussed.

Keywords: Studies, ulcerative lynphangitis, buffaloe, Assiut, Egypt.

INTRODUCTION

Ulcerative lymphangitis which is locally known oedematous skin is an infectious disease which is spread over a large areas by unknown ways *(AWAD 1966).*

It affects buffaloes at different age from (1-7 years) and in both sex. It

spreads in different localities. The affected animal had one or more swelling in the dewlap, fore or hind, left or right limb, shoulder, abdomen and side of head and neck. The swelling varied in size from an egg of hen to the size of water melons. Some times nodules appeared in the form of chain along lymphatic vessles which might coalese particularly those on side of legs and dewlap accompanied with enlargement of regional lymph node. Unopend oedematous nodules contained bloody oedematous fluid. Oedematous parts had undergoes necrosis leaving deep suppurating lesion and in some cases pure pus, the animals conditions were fair, little change in appetite and milk yields, slight, rise in body temperature.

The affected animals showed lameness in one or two limbs. The disease had been spread in different areas of the world and caused by Corynebacterium pseudotuberculosis, (*ARPANO, 1934; PURCHASE, 1944; SOLIMAN et al., 1963; AWAD, 1966; FOUAD et al., 1974; BARAKAT, 1980; IBRAHIM et al., 1983; ESMAT, 1984; ABD-El-GAIL et al., 1986 and ABOU-ZAID and HAMMAM, 1994).*

So this work was done for isolation and identification of the causative agents of the disease in Upper Egypt [Assiut Governorate]. The effectve antibiotic for treatment of diseased animals were used after sensitivity test.

MATERIAL and METHODS

In this investigation 30 aspired samples were collected under complete aseptic conditions from unopend skin nodules, sternal fluids, oedematous parts in shoulder region, fore and hind limb accompanied by oedematous nodules containing pus (pus tanged with blood, pure pus and serous fluid) of infected buffaloes aging between (1-7 years), from different areas in Assiut province [Aboteeg-Abnob-Sedfa].

These samples were cultured seperately on blood agar, MacConkey agar plates media and incubated at 37°C for 3 days. The isolated organisms were tested by morphological and biochemical methods according to *CHRUICHSHANK (1975) and WILSON and MILES, (1983)* for its characteristics and types. Sensitivity test were carried out for several types of antibiotics using disc diffusion method described by *STOKYS (1986).* These antibiotics were Danofloxacine (5 mcg), Refampicine (30 ug), Nalidaxic acid (30 ug), Ampicillin (10 ug), Colistone (10 ug), Cephalothin (30 ug), Doxycyline (30 ug), Teteracycline (30 ug), Erthromycine (10 ug), Gentamycin (10 ug), Nitrofurantione (100 mcg), Chloramphenicol (30 ug), Cloxaclline (1 ug) and Polymycine (300 iu).

RESULTS

The results were tabulated in the Table (1) and (2).

DISCUSSION

Oedematous skin disease is an epizotic infectious disease appeared in buffaloes in Egypt *CARPANO (1934) and SOLIMAN et al (1963).* The animal signs were usually in the form of cutaneous nodules varing from a few to many, extensive oedema of one or two limbs, and marked swelling in the superficial lymph nodes. Secondary infection occuried, and extensive sloughing of the skin and underlying part was seen.

The result of this study showed that the incidence of Corynebacterium ovis isolated from skin lesion in buffaloes was 25 out of 30 (83.33%) as in Table 1. these results was nearly similar to those isolated by different workers. *CARPANO (1934)* described similar disease as accuring in a sporadic form on a small focci affecting cattles and buffaloes. The disease begins with isolated nodules inclosed in the thickness of the skin, these nodules increase in size, undergoes necrosis, ulceration and infilteration arround the ulcerate as a result of necrosis with surrounding skin participating in inflammatory process with implication of the regional lymph node, he isolated a Corynebacterium and described it as diphtheriae like organism. A similar outbreak of ulcerative lymphangitis in cattle in the Reft valley in Uganda caused by Corynebacterium ovis which was isolated from 16 out of 19 affected cases *(PURCHASE, 1944).* Also *SOLIMAN et al (1963)* described clinically an ulcerative lymphangitis in buffaloes, they isolated the causitive agents, typed, as a variety of C.pseudotuberculosis. This condition simulates those previously described one affecting cattle and buffaloes in Egypt by *CARPANO (1934), and PURCHASE (1944)* in affected cattle in Uganda.

From the Table 1. the isolation of Strept faecalis as one isolate which may be incriminated in some sub-cutaneous abscess as secondary invadors.

In (1966) Awad in his studies on the so-called oedematous-skin disease of buffaloes in U A R showed that suppuration and ulceration of the nodules which occurs usually on the skin of the lower parts of the legs along the lymphatics are the main characteristic feature of the ulcerative lymphangitis in cattle, *NEOVE (1951), HAGAN & BRUBNER (1961)* reported that the clinical picture is not that which has been met in ulcerative skin disease in buffaloes and showed that C.ovis have been isolated in pure culture from a cases of lumpy skin disease. *HENNING (1956)* stated that corynebacterium in pure culture commonly occurs in the uncota-minated pus in cases of lumpy skin disease. He conculuded that it is a clinical symptoms of lumpy skin disease.

Also *SOLIMAN et al (1963)* carried out a cross immunity and toxin neutrilization tests in typing the strains isolated from the disease in

buffaloes as a different strain of Corynebacterium Pseudotuberculosis.

KHATER et al (1981) could reproduce the disease by interadermal inoculation of a locality isolated strain of Corynebacterium pseudotuberculosis in buffaloes. *TORKEY et al (1982)* pointed out that Corynebacterium pseudotuberculosis produce a potent exotoxin being produced after experemiental injection resulting in a local area of supprative inflammition and necrosis. This explain that isolated microorganism may be the main cause of the disease. By using sensitivity test, it was found the most prodiminant effective antibiotics are arranged in chronological manner, Gentamycin, Cephalothine. Rifampicine, Erthromycin, Erthromycin, Chloramphenicol, Danofloxacing, Colistin Ampicillin, Cloxacilline, polymycine, Nalidaxic Acid, Nitrofuranes, Teteracycline and Doxcyline as in Table 2. These results are nearly similar to those obtained by *ABD-El-Galil et al (1986) and SHPIGEL et al. (1993)* who mentioned that Gentamycin, Cephalothin and Erthromycin, Cephalothin and Erthromycin were most effective against isolated organism.

The result of field treatment of infected animals with closed lesions (at early stage revealed good results) treated with Gentamycine for a 5 days, when closed lesion contained pus, surgical treatment with antibiotic locally and systymatic for 10 days gave good improvment. These results agree with *IBRAHIM et al (1983), SHPIGEL et al (1993) and ABOU-ZAID and HAMM (1994).*

From a Foremention studies, the organism may gain enterance through a skin abrasion and form initial suppurative inflammation of skin wound *(SOLTY'S 1963).* So contamination of wound may occurs especially those which are in contact with an infected sheep farm, as the animal secrete the organism in faeces *(MADDY 1953).*

BULL and DICKENSON (1933) and DANIES and AUSTIN (1932) recovered Corynebacterium ovis from the soil camping ground of sheep where caseous lymphadenitis was enzoetic. It is possible that the organism being present in the soil invades lymph spaces of dermis and subcutes, *SOLTY'S (1933).*

So it recommended that hygienic measure must be taken in consideration in rearing animals in an area free from infected animals to avoid transmition of the disease as well as treatment of wound and control of inscet vectors to prevent this disease.

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Table 1: Isolated organism from 30 Infected Lesion.

No.of case	Nature of Lesion	Nature of Samples	No. of + Ve Cases	Isolated Organism	%
22	closed lesion	Pus tinged with blood	22	Corynebacterium ovis	83.33
3	closed lesion	Serrous fluid	3	C.ovis	
I	closed lesion	Pure pus.	I	Streptococcus faecals.	3.33%
4	closed lesion	Pure pus.	-	---------	13.33%

Table 2: Antibiotic sensitivity test of isolated organism.

Isolated organism	No of isolates	Antibiotic Desic: Gentamycin (10 ug)	Cephalothin (30 ug)	Rifampicine (30 ug)	Erythtromycin (10 ug)	Chloramphenicol (30 ug)	Danofloxcine (5 mcg)	Colistin. (10 ug)
Corynebacter-		20 + + + +	19 + + + +	17 + + + +	17 + + + +	15 + + + +	10 + + + +	10 + + +
ium ovis	25	2 + + +	2 + + +	2 + + +	1 + + +	4 + + +	5 + + +	4 + +
		3 + +	4 + +	6 + +	7 + +	6 ——	5 + +	11 –
							5 –	–
							–	–
Strept-faecals	1	+ + +	+	+	–	–		

Isolated organism	No of isolats	Ampicillin (10 ug)	Cloxacilline (1 ug)	Polymycin (300 Iu	Nalidaxic Acid (30 ug)	Nitrofuranes (100 mcg)	Teteracycline (30 ug)	Doxcyline (30 ug)
Corynebacter-	25	8 + + +	7 + + +	5 + +	3 + +			
ium ovis		7 + +	8 + +	10 +	9 +	---	---	---
		10 -	10 -	10 -	13 -			
Strep-faecals	1	--	--	--	--	---	---	---