

Epidemiologic and Clinical Features of Camel pox in Jazan Region, Saudi Arabia

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Abstract: An outbreak of camel pox occurred in Jazan region, Saudi Arabia in the period from December 2003 to July 2004. Out of 25 camel herds 19 (76%) were found to be clinically affected. The disease affected both sexes as well as different ages specially camels under one year of age. The overall morbidity and mortality rates were 41 and 3.6%, respectively. Clinical features observed in camels included pox lesions in some or all parts of the body, fever, weakness, enlargement of the lymph nodes, swelling of the face and head, lacrimation and abortion. The course of the disease ranged from three to five weeks.

Key words: Epidemiologic, clinical features, camel pox, lymph nodes, lacrimation

INTRODUCTION

Camel pox is caused by a virus (camel pox virus) belonging to the genus orthopox, family poxviridae. It is a specific contagious disease of camels (dromedaeies) and is characterized by generalized pox lesions (Munz *et al.*, 1985). The disease was reported first in 1909 and it was continued to be described in most camel raising countries (Hafez *et al.*, 1992). The disease was reported in different parts of the world and literature revealed that it was extensively studied so far (Ramyar and Hessami, 1972; Chauhan and Kaushik, 1987; Hafez *et al.*, 1992; Nguyen *et al.*, 1989; Higgins *et al.*, 1992). The virus was isolated in Iraq in 1977 (Falluji *et al.*, 1979). In 1994 the disease was reported in the eastern region of Saudi Arabia and described, where morbidity rate was 10% and the mortality rate was zero (Alhendi *et al.*, 1994). Also, the disease was reported in Alahsa region of Saudi Arabia where morbidity rate was 100% and mortality rate was zero (Abu Elzein *et al.*, 1999). This research reports an outbreak of camel pox in Jazan region of Saudi Arabia and describes the epidemiologic and the clinical features of the disease.

MATERIALS AND METHODS

Outbreak area: Jazan region is located in the south west of kingdom of Saudi Arabia. It is surrounded by the Red Sea from the west, Yemen Republic from the south and east and Asir region from the north. This region is distinguished as a source of livestock in the kingdom.

Epidemiologic and clinical investigation: Twenty five herds of camels were visited by the first author in the

period between december 2003 and July 2004 to collect data on camel pox occurrence. During the period of the study, about 800 animals in 25 herds of camels were investigated. Data collected were about history of the disease, host characteristics including sex and age, morbidity and mortality. Sick animals were examined for clinical signs, location and progress of lesions.

RESULTS

Epidemiology: Twenty five herds of camels (800 animals) in Jazan region were investigated for occurrence of camel pox. Nineteen herds (76%) were found to be affected. These herds consist of 576 animals categorized into three groups according to age, 129 animals were less than one year, 123 animals were between one to four years and 324 animals were more than four years. Out of 576 camels 330 (57.3%) were found to be infected with camel pox (Table 1).

The results revealed that 112 (86.8%) cases were recorded in camels less than one year of age, 98 (79.7%) in camels between one to four years and 120 (37%) in camels more than four years of age. Mortality rate of 8.9% (10 animals) occurred in age less than one year, 1% (one animal) in age between one to four years old and 0.8% (one animal) occurred in age above 4 years (Table 1).

Table 1: Distribution of cases of camel pox in Jazan region by age

Age	No. of animals	Infected (%)	Died (%)
Less than one year	129	112 (86.8)	10 (8.9)
Between 1-4 years	123	98 (79.7)	1 (1)
More than four years	324	120 (37)	1 (0.8)
All ages	576	330 (57.3)	12 (3.33)

Table 2: Distribution of cases of camel pox in Jazan region by sex

Sex	No. of animals	Infected (%)	Died (%)
Male	107	(61.7) 66	(7.5) 5
Female	469	(56.3) 264	(2.7) 7



Fig. 1: Enlarged lymph node and lacrimation



Fig. 2: Proliferative lesions in the udder and abdomen

As far as sex is concerned, morbidity and mortality in males were 61 and 7.5% respectively, whereas in females were 56 and 2.7%, respectively (Table 2).

Clinical signs: Affected animal showed fever (40.5-41°C), weakness because they cannot suckle their dams or graze due to the ulceration, enlarged lymph node and lacrimation (Fig. 1). Initially the lesions were observed as a congested area first seen on the lips and nostrils, the lesion extended to the mucosa of the mouth and nostrils, then they progressed to papules and pustules before

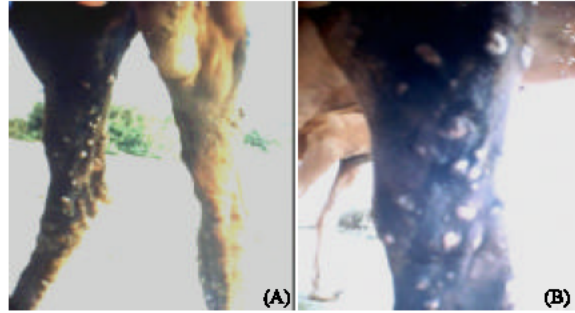


Fig. 3: Lesions on the inner part of the leg (A) and distal part of the thigh (B)



Fig. 4: A camel less than one year suffering from difficulty in respiration

encrusting and dropped off after 3-6 week. The lesions diffused on the other parts of the body, neck, abdomen, udder (Fig. 2), distal part of the legs, inner part of the thigh (Fig. 3) and tail. Also, swelling of the head, difficulty in respiration (Fig. 4) were observed. Cases of abortion were observed in two pregnant animals. The course of the disease may extend from two to 4 months in some cases but in general it was found to be between 3-5 weeks.

DISCUSSION

In this study, we have confirmed an outbreak of camelpox in herds of camels in Jazan region, Saudi Arabia. The tentative clinical diagnosis of camelpox has been confirmed by Immunofluorescent (IF) test and isolation of the virus in chorio allantoic membrane. According to the herders similar clinical signs were observed in the last ten years. However, this is the first report of camel pox in this region.

The clinical signs observed in this study do not differ significantly from those described previously in the literature (Mc Grame and Higgins, 1985; Buchnev *et al.*, 1987; Dioli and Stimmelmayer, 1992; Khalafalla *et al.*, 1996). According to these report the disease manifested

itself as one form with varying degrees of severity. However, other studies reported that the disease manifested itself as two or more clinical forms (Buchnev *et al.*, 1987; Kriz, 1982). Khalafalla *et al.* (1996) observed that the disease characterized by localized pox lesions on the head or legs in adult animals. However, in our study the lesions were observed all over the body in all ages. The morbidity and mortality rates of camelpox vary according to the geographic location and season (Khalafalla *et al.*, 1996). Previous studies reported a 100% morbidity rate and a zero mortality. However, in this study morbidity rates of 41% and a mortality of 3.6% were observed. Moreover, the clinical signs observed in this study demonstrate that camelpox virus can affect camel of both sexes at any age, however camels less than one year and between 1-4 year were more commonly affected (86.8 and 79.7%, respectively). Also eighty three percent decinal three of the deaths attributed to camelpox occurred in ages less than one year and 8.3% occurred in ages between 1-4 years and 8.3% in age more than 4 years.

The findings of the present study, revealed that camelpox was wide spread in Jazan region after the rainy season and during the winter and the spring the (26 December to 24 July). It is speculated that the system of herding camels in the region may facilitate the spread of infection easily.

The history of the disease and the findings of this study confirm that camelpox is endemic in Jazan region.

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