



A POSSIBLE CASE OF CAMELPOX IN MAN

by

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*Poxvirus*

Summary

In June 1978 a case of eruptive skin disease occurred in a member of a nomadic group in south western Somalia. The case was a 40-year old man who developed four lesions resembling those of smallpox, which left vaccination-like scars. The man had been milking a sick camel from which specimens were subsequently taken. These proved positive for poxvirus by electron microscopy examination and camelpox virus was isolated on chorio-allantoic membrane.

Introduction

Camelpox is a common disease of camels in south western Somalia. It mainly affects young animals and appears to create life-long immunity. The causative virus belongs to the orthopox group of poxviruses and is believed to cause disease among camels only. It appears to be of no epidemiological importance for humans. In this report we present a possible case of camelpox in man.

Detection of the Case

One member of a nomadic group who had settled in a bush area of Sako district, Middle Juba region, reported to a smallpox eradication programme surveillance agent that one of his family was suffering from camelpox. This was surprising because nomads generally consider camelpox is not transmissible to man, however, in this case the man who developed the rash believed that he had contracted the disease from his camel and had expressed this to other members of his group. The surveillance agent reported the case to the Sako District Team Leader who immediately investigated the outbreak on 2 July 1978.

Investigation Findings

The nomadic group consisted of three families with 38 members. They had been settled for 10 days in an area called Maytfor, 18 km from Salagle, the nearest village in Sako district, Middle Juba (fig.1). For the past 20 years this group had been living only within Sako district. They owned three herds of camels with a total of 61 animals. They do not cultivate land and have no permanent houses.

The first case of camelpox among the three camel herds had occurred during May 1978. By 13 July, 16 camels were affected in the three herds (Table 1); none of them died. The rash, in most cases, had a typical distribution - the extremities and the head, around the mouth, were most affected. Some of the animals had severe lesions in the genital area and on their milk glands. The duration of the disease was usually 15-25 days, but in some cases a few scabs remained for more than one month after the date of onset of rash.

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TABLE 1  
CAMELS WITH CAMELPOX IN SAKO DISTRICT, MIDDLE JUBA, SOMALIA, 1978

Herd No.	No. of camels		Cases		Onset of rash	
	M	F	M	F	first case	last case
1	11	39	3	2	10.6	2.7
2	3	7	3	7	10.5	28.6
3	1	0	1	0	16.6	-
Total	15	46	7	9	-	-

The age distribution of the 16 camelpox infected camels is shown in figure 2. Specimens taken from camels and results of laboratory investigation are shown in Table 2.

TABLE 2  
RESULTS FROM SPECIMENS TAKEN FROM CAMELS

No.	Specimen No.	Herd No.	Age	Sex	Onset of rash	Date of collection	Results	
							EM	Isolation
1	1906	1	3	M	3.6	2.7	Poxvirus	Positive
2	1907	1	4	F	30.6	2.7	"	12.8
3	1712	2	6	F	28.6	2.7	"	Negative
4	1716	*	3	M	5.6	1.7	"	"

\* Specimens collected in the same area but from different nomadic group.

The number of persons in the three families and their smallpox vaccination status is shown in Table 3.

TABLE 3  
SMALLPOX VACCINATION STATUS OF FAMILIES WITH CAMELS

Family No.	No. of members	Vaccination scar present	
			%+
1	14	3	21
2	7	0	0
3	17	5	29
Total	38	8	21

A 40-year old man, who was unvaccinated and head of family no. 2, developed a rash on 12 June 1978, 2-3 days after feeling malaise. There were three lesions on the left arm and one on the right arm. They all appeared on the same day and took 7 days to develop to full size vesicles. The vesicles then changed to pustules and later to scabs which fell after 14-15 days of rash. The pustular stage was clearly described by another member of the group and by the patient himself. The lesions were circular in shape having a central depression and encircled by pus. Five days after the scabs had fallen off the patient was seen by a surveillance team leader who found scars 7-8 mm in diameter having a pale pink centre. After another 11 days scars were clearly visible, were 0.5 mm deep and a similar colour to the surrounding skin; they resembled smallpox vaccination scars. Serum specimens were taken and appropriate laboratory testing is under consideration.

The patient had a wife, aged 30 years, and five children (14 F, 11 M, 8 M, 5 F, 2 M). The youngest, a 2 year old boy, was unvaccinated. He developed a rash during family travel to an animal grazing area on 23 June 1978. The rash was located mainly on his lower extremities and back. According to his mother, the rash appeared on one day and passed through a vesicular stage progressing to scabs on approximately the tenth day. During our investigation on 13 July most of the scabs had already fallen off and scars were superficial, about 8-11 mm in diameter with a white/pink centre. The scabs and scars resembled tropical ulcers or superinfected insect bites.

Another case of rash occurred in family no. 3. A 3 year old, unvaccinated boy developed a rash on 2 July after two days of fever. The rash predominated on his legs and back and the lesions were 5 mm in diameter. His mother also gave a history of rash appearance within one day and its passage through a vesicular stage to scabs which developed on the ninth or tenth day. On 31 July about 25% of scabs were still on the patient's body. The scars were superficial, 5 mm in diameter with a white/pink centre. The distribution of rash was not typical for either smallpox or chickenpox.

Results of the virological investigation of scab specimens taken from these two children were negative for viruses by electron microscopic examination and culture.

TABLE 4

RESULTS OF TESTING OF SPECIMENS FROM TWO CHILDREN

Family Initials	Age	Sex	Vaccination status	Onset of rash	Date specimen taken	Results EM	Isolation	
2	A.M.	2	M	unvaccinated	23.6	13.7	-	-
3	S.A.I.	3	M	"	2.7	13.7	-	-

### Discussion

In 1978, during the investigation of 15 camelpox outbreaks among camel herds in southern Somalia, no case of fever with rash amongst the family members of herd owners was noted. Owners of affected herds, and other nomads contacted during assessment of search activities, denied any pox-like rash at the times when camelpox outbreaks had occurred in the past. They believed strongly that camelpox, as well as goatpox (which is also quite common in this area) is not transmissible to humans and they had never heard of any human cases.

The adult male, described above, is the first case encountered which could theoretically be human camelpox. He had shown his rash to all members of his group, so there were ample witnesses to describe the pox-like rash. The scars resembled those following smallpox or smallpox vaccination. No laboratory diagnosis has as yet been made.

No vaccinations had been performed in the area for at least two months before the onset of rash of the patient, therefore it is unlikely the illness was due to vaccinia.

The two other cases seem to be due to tropical ulcer or other skin diseases; they resembled neither smallpox nor chickenpox. Both of the children's mothers knew the symptoms of chickenpox and were sure that the rash of their children was of another type. Moreover, according to the mothers and other family members this kind of disease appears quite frequently in small children of that area, particularly during the wet season.

Editorial Note: This is one of the few investigations by a qualified epidemiologist to determine the pathogenicity of camelpox for humans. Evidence for transmission from camel to human is not conclusive from this study, despite a high prevalence of camelpox in the Somalia camel population, as well as close contact between camels and humans. Camelpox virus shares many biological properties with variola virus in laboratory tests but this epidemiological study indicates that its virulence for humans appears to be extremely low, compared with variola virus. However, a firm statement that camelpox is not pathogenic to man awaits further epidemiologic investigation and development of methods for determining camelpox antibodies in serum, as well as antibodies specific to other orthopoxviruses.

FIG: 1  
LOCATION OF CAMELPOX OUTBREAK,  
MIDDLE JUBA REGION, SOMALIA, JUNE 1978

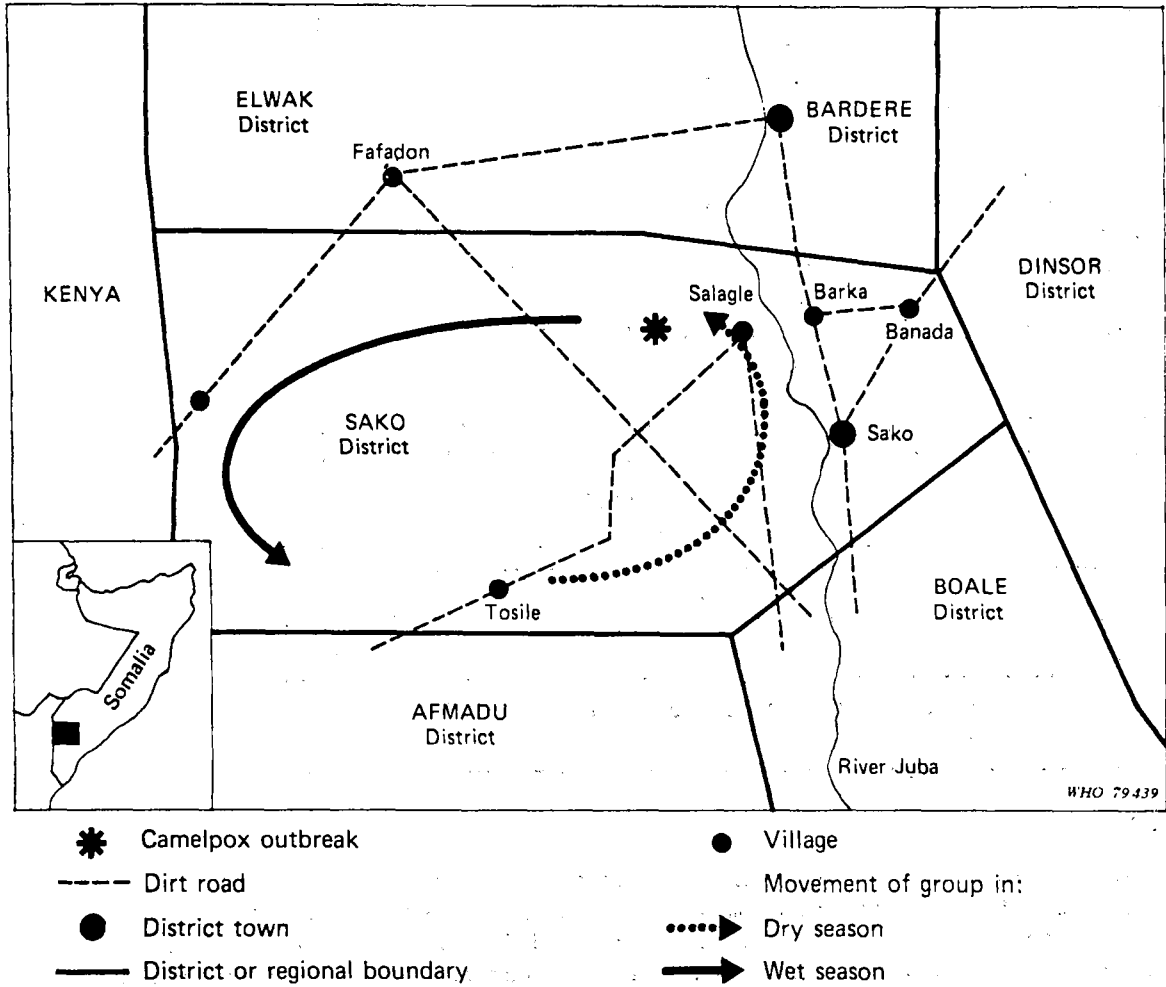


FIG: 2  
AGE DISTRIBUTION OF 16 CAMELS WITH CAMELPOX

