

A severe case of contagious ecthyma in Tswana goats

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ABSTRACT

The first severe case of caprine contagious ecthyma (parapox) in Tswana goats is described from Botswana. Affected animals were indigenous adult Tswana goats. The case involved a flock of 12 goats of which 4 (33.3 %) were very severely affected but none died. The lesions were confined to the head and included swollen lips, swollen submandibular lymph nodes, gingivitis, glossitis, ulceration on lip and gum mucosae and scab formation on ulcerated areas. No lesions were found on other parts of the body. This case was clinically indistinguishable from bluetongue.

Key words: Botswana, contagious ecthyma, parapoxvirus, Tswana goats.

Baipoledi E K, Nyange J F C, Hyera J M K **A severe case of contagious ecthyma in Tswana goats.** *Journal of the South African Veterinary Association* (2002) 73(2): 86–87 (En.). National Veterinary Laboratory, Private Bag 0035, Gaborone, Botswana.

INTRODUCTION

Contagious ecthyma is a zoonotic infectious disease primarily of domestic sheep and goats which is caused by a *Parapoxvirus*¹². The disease commonly termed 'orf' is also known as contagious pustular dermatitis, scabby mouth and sore mouth¹¹.

Orf spreads rapidly in a flock by direct contact with affected animals or inanimate objects or fomites contaminated with virus¹. Morbidity in affected flocks may range from 50–80 %¹¹ but the mortality is low, usually ranging from 5–15 %⁴. The main lesions are found around the mouth, the mucous membranes of the lips and gums but the virus can also spread to other parts of the body such as the vulva, udder, testicles and under the tail^{1,2}.

In some semi-arid countries of southern Africa, orf occurs frequently and is one of the most important viral diseases causing great economic loss in small stock^{8,13}. Orf seems to have received little or no attention in Botswana. Here we report for the first time a severe case of the disease in indigenous Tswana goats. The disease was so severe that it was clinically difficult to differentiate it from bluetongue (BT).

CASE HISTORY

On 24 March 2000, a farmer in Gaborone North, Botswana reported to the Department of Animal Health and Production that four goats in his flock of

12 indigenous Tswana goats had lesions around the mouth. On the same date, a veterinarian from the Gaborone veterinary district office visited the farm and examined the animals. On the basis of the lesions that were found, a tentative diagnosis of BT was made. Bluetongue is a notifiable disease in Botswana and for that reason, the veterinarian referred the case to the National Veterinary Laboratory (NVL), Gaborone for a more thorough investigation.

On 27 March 2000, two veterinarians (a pathologist and a virologist) visited the

farm and examined all the animals. The affected animals were adult goats in fair to poor body condition. There were no sheep in the flock. Lesions were only found around the mouth (Fig. 1) and on the lips, tongue and gums (Fig. 2). The lesions consisted of ulcerations of varying sizes. The tongue appeared bluish in colour and this was probably what led the veterinary clinician to make the provisional diagnosis of BT. The lips were grossly swollen and covered with dark brown to black scabs (Fig. 1). The sub-mandibular lymph nodes were also grossly swollen (Fig. 1). On the basis of these lesions, the team proposed a probable diagnosis of contagious ecthyma.

Scabs from affected goats were collected in sterile polystyrene specimen bottles without preservative. Whole blood samples from sick and apparently healthy goats were collected in sterile vacutainer tubes without anticoagulant. Affected goats were isolated and provided with soft, palatable food. Systemic treatment with a broad-spectrum antibiotic was recommended to combat secondary bacterial infections.

Both scab and whole blood samples



Fig. 1: Severe orf lesions on the lips extending to the muzzle. Note the swollen lips.

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Received: October 2001. Accepted: March 2002.



Fig. 2: Severe lesions in the oral cavity of a goat.

were quickly transported to NVL where the sera were harvested from the blood samples and tested for the presence of BT virus antibodies by the agar gel immunodiffusion (AGID) test⁵. None of the sera exhibited antibodies to the virus. The scabs were submitted to the Onderstepoort Veterinary Institute in Pretoria where they were examined for the presence of orf virus by electron-microscopy. Virions characteristic of *Parapoxvirus*⁹ were observed in negatively stained scab preparations; this finding confirmed the diagnosis of contagious ecthyma.

DISCUSSION

In most outbreaks of orf, the cases are mild and unlikely to cause concern about economic losses or differential diagnosis. However, outbreaks of a more severe form of the disease can occur and are likely to be confused with BT^{7,11}. The case reported here was very severe and was initially confused with BT.

In Australia, Europe and America, incidental wounds caused by veterinary procedures such as ear tagging and tail docking are considered to be the main pre-disposing conditions to the develop-

ment of orf^{1,2,4}. In Africa, on the other hand, it is believed that abrasions and other superficial injuries caused when feeding on dry stems or spiny feed are the usual portal of entry of orf virus⁷. Goats tend to browse on thorn shrubs and trees and this habit appears to be responsible for the severity of outbreaks of orf in semi-arid areas of Namibia^{7,8}.

Like Namibia, Botswana is also a semi-arid country with a vegetation cover consisting mostly of thorny/spiny shrubs and trees on which the Tswana goats browse. It is thus likely that this feeding habit was responsible for the severity of the current cases.

Orf virus is very resistant to environmental conditions. In dry scabs the virus is extremely stable, and pasture, stables or kraals, for example, may remain infected for months or even years¹¹. The current concept of the epidemiology of orf in Australia, America and Europe is that susceptible animals derive the infection by contact with infective scabs shed in the environment by previously infected animals^{6,10}. This probably also applies to Botswana and other African countries where the disease occurs.

It is estimated that there are about 2.2 million goats and 400 000 sheep in Botswana³. The prevalence of orf in the goat and sheep population is not known, and the economic impact of the disease in this country is also not known. More studies are therefore needed to determine the epidemiology and economic implications of contagious ecthyma in Botswana.

ACKNOWLEDGEMENTS

We thank Mrs Lillian Tlagae for carrying out the AGID test. This paper is published by permission of the Director of Animal Health and Production, Ministry of Agriculture, Botswana.

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