Sheep Pox in North Western and North Central States of Nigeria¹

By

S. A. BIDA, F. K. RAMSEY, C. O. NJOKU,
E. U. EZE and F. I. EID
*Faculty of Veterinary Medicine,
Ahmadu Bello University, Zaria**
*and Veterinary Division,
Ministry of Natural Resources,
Sokoto.*

SUMMARY

SHEEP pox in two northern states of Nigeria is reported. The disease produced nodules which became popular, vesicular and ulcerated on the skin. Lesions also developed in the respiratory, urogenital and alimentary organs. The importance of the disease in animal production and its control are discussed. Viral isolation was not done but the disease was experimentally reproduced. Diagnosis was based on clinical history, experimental transmission and morphological examination.

INTRODUCTION

SHEEP pox is a viral contagious disease (Gaiger and Davies, 1938) causing severe general disturbance, complications and death — mortality reaching 20-50%. The disease is widespread and has produced heavy losses in Asia, Europe, and North Africa (Handleigh, 1965). The lesions develop on the skin. In the more severe cases the respiratory and alimentary mucous membranes are haemorrhagic, the lymph nodes congested and septicaemia and pyaemic lesions may develop. Although sheep pox has caused severe epizootics in some parts of the world its epidemiology in this country is not known. Several sporadic cases have been seen in

Sokoto— North Western State and few others in Samaru, North Central State. Reported here are 3 typical cases of sheep pox involving local breeds of sheep. The control of the disease and its impact on animal production are discussed.

Case 1

A client from Samaru in Northern Central State purchased 3 Yankasa sheep each from a different source. Two weeks later one of them became sick and had 140°F fever. Skin lesions developed all over the body including the oral cavity tongue, nostrils, teats, vulva and tail (Fig. 1). Biopsies of the skin lesions were taken on the day of admission into the Ahmadu Bello University Veterinary Clinic and on the day of euthanasia.

Post mortem gross findings included pox lesions 2.0 mm — 2 cm in diameter all over the body. Many of the lesions had passed through the popular to umbilicated vesicular, pustular and ulcerated stages to scar formation. Numerous greyish nodules 2 to 3 mm in diameter were scattered throughout the lungs.

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Dr. Ramsey's present address is: Department of Veterinary Pathology, College of Veterinary Medicine Ames, Iowa 50010, U.S.A.

Healed lesions in the oral cavity and few proliferative and necrotic ones were observed in the oesophagus and rumen.

Microscopically the early skin lesions were characterized by ballooning degeneration and spongiosis involving the stratum germinativum. This progressed to large intraepidermal vesicles (Fig. 2) and scabs beneath which were necrosis, mononuclear and neutrophilic infiltration and bacteria (Fig. 3). The so called "sheep pox cells" some with eosinophilic cytoplasmic inclusions were observed.

Other findings included purulent bronchopneumonia with "sheep pox" cells, acute ulcerative and necrotic dermatitis of the mammary gland, focal proliferative rumenitis and foci of lymphocytic infiltration in the kidney.

Experimental reproduction of the disease

This was done by using antibiotic-treated and filtered suspension of ground lymph node and skin lesions. Three sheep were inoculated with 0.2 ml of the filtrate — one subcutaneously, the other intradermally and the last on scarified skin. The first two developed fever and pox lesions as described above within 1 week. The third which had had pox before developed only mild fever without pox lesions.

Case 2

This was an Uda ewe purchased from the Sokoto market 15 days before the animal developed generalized cutaneous nodules ranging from 2.0 to 3.2 mm in diameter. Following death of the animal post mortem findings resembled those of case 1.

Case 3

An adult Uda ewe purchased 2 months previously from Sokoto market became sick. There were 2 other sheep in the

flock but none fell sick. The sick animal was first noticed to have hyperthermia (107°F), flat nodules on the body minus the face and legs, rapid respiration and cough. She was treated with triple sulfa. Two days following treatment the nodules reached the face and limbs and the ewe was transferred to the Ahmadu Bello University Veterinary Clinic where it was observed for a few more days. The condition worsened and the animal was euthanatized.

The gross skin findings were similar to the previous cases but larger reaching 3.0 cm in diameter. In the lungs, lesions ranged from pin point clear vesicles to 5.0 cm diameter greyish white spherical lymphoma-like nodules on the pleural surface. Some of the nodules had depressed centers and on sectioning were necrotic, black or red. *Pasteurella* sp was isolated from the lung. The alimentary tract was not affected. Microscopic findings were similar to the cases above.

DISCUSSION

Sheep pox is regarded as the most serious of the pox diseases of animals (Jubb and Kennedy, 1970). The disease affects the important systems of the body including the skin, alimentary, respiratory and urogenital. Death could occur as a result of involvement of any of these systems especially the respiratory in which secondary bacterial infection is common. Since the udder is affected by pox, lambs can easily get the disease not only by other contacts but by suckling. Passing the disease on by coitus should also be given a serious thought.

It is probable that sheep pox is enzootic in the 2 states of Nigeria in question and possibly in other states. How the disease goes into these states is not known but in enzootic areas imported breeds of sheep

Fig. 1 Pox lesions on the teats, vulva and under the tail.

Fig. 2 Photomicrograph of skin of sheep with pox showing large vesicles, H & E stain x 10.

Fig. 3. Photomicrograph of skin of sheep with pox showing necrosis with mononuclear and neutrophilic infiltration. H & E stain x 10.

show greater susceptibility than the native stock (Blood and Henderson, 1963).

In North Western, North Central and Kano states of Nigeria, lumpy skin disease of cattle and contagious ecthyma of sheep have occurred. The fact that the viruses of these two diseases bear a close relationship with sheep pox virus (Plowright *et al.*, 1959) coupled with the unchecked movement of sheep in Nigeria highlights the economic importance of sheep pox and its impact on animal production. Hence the epizootiology of the disease should be evaluated.

There is no specific treatment for sheep pox but control can be effected by prohibition of importation from infected areas. Quarantine and vaccination are advocated although these have been known to fail in certain parts of the world where the disease causes severe epizootics and annual enzootics amongst lambs (Jubb and Kennedy, 1970). Vaccination with naturally occurring avirulent virus has been reported to give solid immunity for 14 months (Sabban, 1955). For this vaccination to

be effective, it has to be given at least 2 weeks before an outbreak (Rafyi and Mir Chamsy, 1956).

In the cases reported above viral isolation was not done. Diagnosis was made based on clinical, gross and microscopical examination.

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