

PARAPOXVIRUS INFECTIONS IN DEER IN THE SOUTH ISLAND

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The first confirmed parapoxvirus outbreak in New Zealand deer occurred in November 1985 on a farm in Waitomo County. Multiple small scabby lesions developed on the velvet of 300 of 350 two year old red stags. As a result, the velvet was devalued and the farmer lost \$24,500. No affected deer died.

In December 1985 and January 1986, three smaller outbreaks occurred on farms in Opotiki County and Rotorua County.

The first South Island outbreak occurred on a farm in South Canterbury in January and February 1986. All deer in a mob of 55 recently captured hinds developed severe dermatitis with extensive hair loss and scab formation, mainly affecting the legs. Affected deer lost up to one third of their body weight in about a week, and 21 (38%) died after a period of severe depression and recumbency. No satisfactory explanation was obtained for their deaths, but multifactoral aetiology seems probable.

These outbreaks have been described by Cox (1986) and Horner et al. (1987).

In September 1986, a second South Island property near Ashburton experienced a parapoxvirus outbreak, scabby lesions developed on the muzzle and cheeks of one weaner deer.

Because of the possible threat to the deer velvet industry, Invermay and Lincoln Animal Health Laboratories undertook a joint South Island wide study of parapoxvirus infections in deer. The aim of the project was to obtain more information about the nature of the disease and its prevalence in the South Island. All veterinarians in the South Island were asked to submit samples from all scabby skin lesions which they encountered during the 1986/1987 de velvetting season.

Samples from seven cases were submitted for the study. However in one case, no fresh material was received for examination. Parapoxvirus infection was diagnosed in three of the remaining six cases.

The first of the parapoxvirus cases occurred in November 1986. Eight of 50 two year old red stags on a farm near Rakaia had multiple small scabby lesions on their velvet. Associated with these lesions were subcutaneous oedematous swellings around the base of the pedicles sometimes extending beneath the angle of the jaw.

In January 1987, similar clinical signs were observed in deer on a farm near Riverton in west Southland. In four of five mature wapiti, red and wapiti cross stags, multiple scabs up to 5 mm diameter developed on the velvet. This is the only recorded outbreak which involved a breed other than red deer.

The third case, from the Oamaru area, involved three 2 year old red stags. There were multiple scabs on the face and velvet, and the farmer had noticed that their faces were swollen a day or two before.

The facial swelling which occurred in two of the three cases diagnosed in this study was also a feature of one of the North Island cases (Horner et al. 1987).

Secondary bacterial pathogens were isolated from two cases - Staphylococcus (S.) aureus and S. epidermidis from the Riverton case and S. hyicus and S. epidermidis from the Oamaru case. Histological examination of scab material from the Oamaru case showed proliferative granulomatous dermatitis beneath acanthotic and acutely inflamed epidermis - lesions similar to those of scabby mouth in sheep.

From two of the parapoxvirus negative cases in the study, Trichophyton mentagrophytes was isolated, suggesting that ringworm infection may have been involved in the development of the lesions.

In this small study, parapoxvirus infection accounted for half of the scabby lesions on the head and velvet of deer. The study suggests that velvet is a common site for parapoxvirus infection and it provides more evidence that parapoxvirus lesions can result in spoilage of velvet and considerable financial loss to the farmer. However scabs from velvet lesions are more likely to have been submitted than scabs from lesions elsewhere on the body, because of their accessibility and because they are more likely to have been noticed.

The size of the parapoxvirus outbreaks tended to be larger than nonparapoxvirus outbreaks. Parapoxvirus outbreaks involved three or more deer, whereas in the latter only one or two animals were affected. Nevertheless the study outbreaks were relatively small compared with some of the first recorded cases, in which many deer were affected.

It appears from the study that scabby lesions are not common in deer. However it may be that veterinarians did not submit all the scabby lesions which they encountered during develvetting, or that farmers were reluctant to report scabby lesions to their veterinarian for fear of stigma being attached should it be identified. Consequently parapoxvirus infections may be more common than this study suggests.

References

- Cox, B.T. (1986). Parapoxvirus and South Island deer deaths. *Surveillance* 13 (2): 18.
- Horner, G.W.; Robinson, A.J.; Hunter, R.; Cox, B.T. and Smith, R. (1987). Parapoxvirus infections in New Zealand farmed red deer (*Cervus elaphus*). *N.Z. vet. J.* 35: 41-45.