

# PREPUTIAL PROLAPSE IN NORTH AMERICAN WAPITI FARMED IN NEW ZEALAND

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*Key Words:* deer, farmed, preputial prolapse, posthitis, wapiti

*Mots-Clés:* cerf, élevé, prolapsus du prépuce, posthitis, wapiti

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## History and Description

Three cases of severe preputial prolapse and swelling have occurred over a period of 2 yr in a group of 14 North American wapiti (*Cervus elaphus*) stags farmed on the Invermay Agricultural Centre farm near Dunedin, in New Zealand. All 3 occurred in the late summer/autumn (January 1985, February 1985, April 1986). Most of the other males had varying degrees of preputial ulceration. The ulcers varied from 5 to 20 mm in diameter and from 1 to 10 in number when examined in late spring at the time of velvet antler removal. All three cases developed a large pendulous oedematous swelling 50-200 mm in diameter which developed from an eversion of the preputial lining (Fig. 1 and 2).

## Surgical Correction

The three stags were operated on under xylazine anaesthesia (Rompun, Bayer NZ Ltd, Marine Parade, Petone) and local anaesthetic (Xylocaine plus adrenalin, Astra Pharmaco NZ Ltd., P O Box 4079, Auckland, New Zealand). The prolapses were amputated at the muco-cutaneous junction at the preputial orifice. The skin edges were sutured to the preputial lining with simple interrupted sutures (Fig. 3). Parenteral long acting penicillin (Propen L A, Pitman Moore, 33 Whakatiki St, Upper Hutt) was administered and the anaesthetic was

reversed with yohimbine (Roxcervyl, Aspiring An. Serv. Ltd, Ballantyne Rd, RD 2, Wanaka). The stags recovered uneventfully and all mated successfully in subsequent seasons and have not had recurrent problems.

## Histological Examinations

The amputated swellings were oedematous masses associated with a chronically ulcerated mucous membrane and were not neoplastic. Biopsies of ulcers from other affected stags revealed ulceration of the stratified squamous epithelium with chronic inflammation of the underlying connective tissue and perivascular cuffing in deeper tissues. There was no evidence of parasites or foreign bodies. There were no clinically significant bacteria isolated from the biopsy material or preputial swabs.

## Aetiology

The cause of the ulceration is not known but it is suspected that it is similar to posthitis in sheep and cattle associated with high protein diets and the presence of bacteria which hydrolyse urea to form ammonia (Southcott, 1965a, b). Ulcerative posthitis has been associated with chronic prolapse of the prepuce in cattle and the incidence and severity is significantly greater in bulls on higher levels of nutrition (Riet-Correa et al., 1979). The wapiti at Invermay were on a high plane of nutrition with *ad lib* access to high quality predominantly perennial ryegrass (*Lolium peren*)/clover (*Trifolium repens*) pastures and access to alfalfa (*Medicago sativa*) hay for most of the year. Virtually all the wapiti stags had preputial ulceration and some had mild eversion of the preputial lining. The sudden development of oedematous swelling and prolapse occurred in the 3 stags in late summer/autumn after the antlers had hardened, just prior to or during the rut. This condition may relate to metabolic changes associated with high circulating levels of testosterone and resulting changes in urine composition, and urination behaviour.

## Literature Cited

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Fig. 1. Canadian wapiti bull with large oedematous preputial swelling (red deer calves in background).



Fig. 2. Large oedematous preputial swelling on recumbent Canadian wapiti bull.



Fig. 3. Amputated preputial swelling.