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CUTANEOUS FIBROPAPILLOMAS IN MIGRATORY BARREN-GROUND CARIBOU

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Abstract: The finding of cutaneous fibropapillomas in migratory barren-ground caribou, *Rangifer tarandus groenlandicus* (L.), in Canada is reported for the first time. No transmission studies were carried out to determine if the neoplasms were of viral aetiology.

INTRODUCTION

Reports of cutaneous growths in free-living Cervidae in North America and Europe were reviewed by Fay,^{2,3} McDiar-mid⁴ and Jennings.⁵ Recently, Fyvie⁴ reported the occurrence of papillomas in deer and moose in Ontario and Borg¹ on his finding of fibroma in roe deer (*Cap-reolus capreolus*) in Sweden. This report is the first record of a cutaneous neoplasm in migratory barren-ground caribou.

MATERIAL, METHODS AND RESULTS

Cutaneous neoplasms were collected from a two-year old, non-breeding female shot July 8, 1968, on the Thelon River, west of Aberdeen Lake, 64° 42'N and 99° 51'W, and from a 13-month old male shot July 17, 1968, 63° 52'N and 95° 28'W, in the District of Kewatin, North-west Territories.

In the first animal, the neoplasms were located between the antlers and on the medial side of the left thigh. They projected above the surface of the skin, rough, cauliflower-like growths attached by a thin stalk to the underlying tissues. The surface of the tumours had many fissures but no abrasions or ulceration. The largest tumour weighed 44 grams and was 14 centimeters in diameter. In the second animal, the tumour was located on the medial side of one of the back legs. It was 1½ centimeters in diameter. In both cases, when incised, the tumour mass revealed a firm greyish white, fibrous matrix (Fig. 1).

Tissue samples were fixed in 10% formalin and processed by standard histological techniques. Tissue sections, 6µ thick, were stained with haematoxylin and eosin and with a trichrome (haematoxylin-phloxine-safran) stain.

In both cases, the epidermis was thickened, overlying a proliferative dermis (Fig. 2). The epithelial hyperplasia was less marked in the smaller tumour. The appearance of the cellular elements in the smaller tumour indicated that it was regressing. No mitotic figures were seen in either of the tumours. Cutaneous fibropapilloma was diagnosed in both cases. No attempt was made to establish if these tumours were of viral origin.

DISCUSSION

Shope *et al.*⁷ believe that some of the cutaneous tumours recorded in North American cervidae under such names as papillomas, fibromas, wart-like structures and fibrosarcomas were identical to an infectious cutaneous fibroma occurring in white-tailed deer in New Jersey, experimentally transmitted to other deer. According to Jennings⁵, skin tumours taken from red deer (*Cervus elaphus*) in Scotland appear to be identical with the neoplasm investigated by Shope *et al.*

Thickening and pigmentation of the overlying epithelium is a histologic feature of fibromas described from deer in both the United States and the United Kingdom, as well as in barren-ground caribou in Canada (Fig. 1). As Jennings⁵ pointed



FIG. 1. Fibropapilloma in cross section showing the firm white matrix, thickened epidermis and stalk.

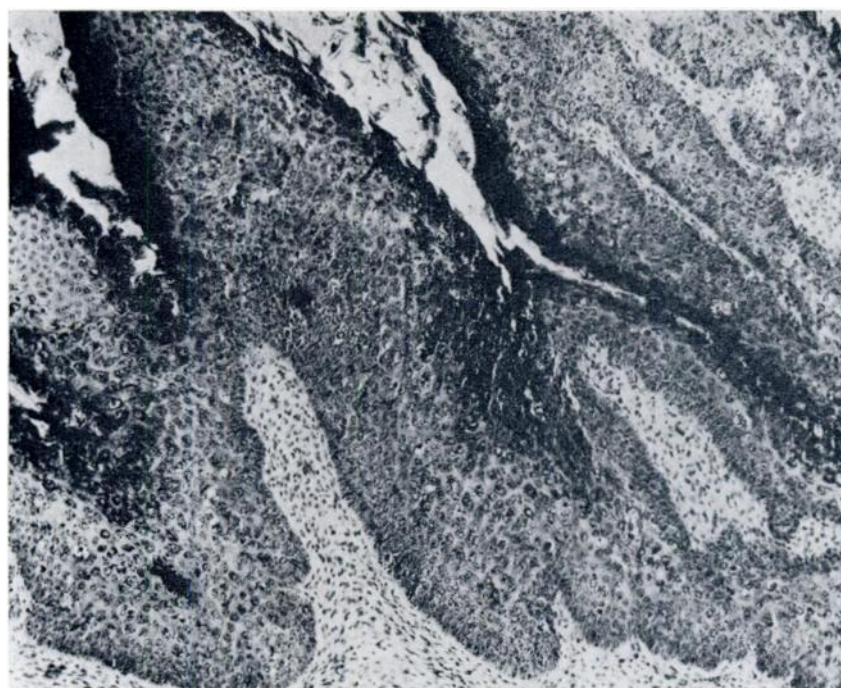


FIG. 2. Skin section showing moderate epithelial hyperplasia. H and E stain; X. 125.

out, this feature gives the tumour the superficial appearance of a papilloma.

Fay² is of the opinion that virtually all wart-like growths in North American deer are fibromas. He also believes³ that the work of Shope and his co-workers tends to support a hypothesis that many if not all cutaneous tumours of deer and moose are of viral origin.

Fay² cites a number of reports indicating the low incidence of cutaneous neoplasms in deer. This also appears to be true of barren-ground caribou. The cases of cutaneous fibropapillomas reported here were the only two encountered in 1,071

barren-ground caribou, ranging in age from a few hours to 17 years, examined between November 1966 and August 1970.

Shope *et al.*⁷ reported a marked tendency of experimentally induced fibromas in deer to regress. They concluded that, in all probability, most naturally infected deer develop tumours that regress before they reach a readily observable size. This implies, as Fay³ pointed out, that the incidence of exposure to the tumour virus may be considerably higher among deer than the presence of gross tumours would indicate. This could also be the case in barren-ground caribou.

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