Multiple cutaneous inverted papillomas in a dog

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INTRODUCTION
Canine cutaneous viral squamous papillomas are caused by papilloma viruses. Although the exophytic oral and facial form (warts and verrucae) are common in the dog, cutaneous endophytic inverted papillomas (CIP) are less common. Cutaneous inverted papillomas are usually seen in dogs under 3 years of age, occur on the ventral abdomen and groin, and are typically small (<2 cm diameter), raised and firm with a central pore. This case report describes a case of multiple CIP in a mixed breed dog from Windhoek, Namibia.

CASE HISTORY
An 8-month-old, male, mixed breed, unvaccinated domestic dog in good bodily condition was presented for veterinary attention because of multiple, rapidly growing, doughnut-shaped masses formed on the ventral abdomen, which histologically consisted of a cup-shaped rim of marked epithelial hyperplasia, giant keratohyaline granules and prominent koilocytes and marked hyperkeratosis filling the centre of the mass. Current literature on canine papillomas is briefly reviewed.

Key words: canine, inverted papilloma, papilloma virus, skin.

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Fig. 1: Macroscopic appearance of cutaneous inverted papillomas around the prepuce of a dog: firm, raised, discrete nodules with a central pore (shown to scale).
In natural and experimental infections, papilloma viruses may cause a wide range of skin lesions including epidermal hyperplasia, epidermal cysts, squamous papilloma, fibropapilloma, inverted papilloma, basal cell epithelioma, and squamous cell carcinoma. Human inverted papillomas are curiously most common in the nasal mucosa. Immuno-histochemical stains, using polyclonal antiserum, showed that 44.2% of 95 canine cutaneous papillomas and 27% of 100 squamous cell carcinomas contained papilloma viral antigen; antigen was detectable in 54.2% of all oral and ocular papillomas and in 37.0% of all cutaneous papillomas. Viral transmission occurs by direct or indirect contact, and infection is believed to be established in damaged skin or oral mucosa.

Most canine papillomas regress naturally following infiltration by CD4+ and CD8+ T lymphocytes. Solid immunity, thought to be due to production of circulating neutralising antibodies against the viral capsid antigens, usually follows experimental or natural infection. Unusually severe or persistent forms of papilloma are associated with immune suppression, old age and recent chemotherapy or corticosteroid therapy. Treatment of papillomas may include excision, cryo- or electrosurgery, injection with autogenous vaccine, and immune modulating drugs. Since papillomas may regress spontaneously, the efficacy of autogenous vaccines is difficult to accurately assess.

Canine cutaneous papillomas are typically benign, rarely recur after excision and often spontaneously regress in time; but malignant transformation has been recorded. Control of papilloma virus-induced disease in multiple-dog households is hampered by the fact that canine oral papilloma virus, and presumably, other canine papilloma viruses are fairly stable in the environment.

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