THERAPEUTIC MANAGEMENT OF INVERTED PAPILLOMA IN A DOG

Y. Chaitanya[1], CH. Sudha Rani Chowdary[3], N. Lakshmi Rani[2] and K. Sai Krishna[1]
[1] Assistant Professor, [2]Professor & Head, Department of Veterinary Medicine; [3]Assistant Professor, Department of Veterinary Pathology, NTR College of Veterinary Science, SVVU, Gannavaram (A.P.).
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A case of inverted papilloma in dog was diagnosed based on the gross and microscopic lesions. The excisional biopsy revealed multiple endophytic papillary growths. The present case was treated with vincristine and other supplements for a period of 1 month and the animal recovered without any recurrence during the followup of 6 months.
Keywords: Dog, Inverted papilloma, Papilloma virus, Vincristine**.**

Canine cutaneous papillomas are caused by papilloma viruses in dogs. Although the exophytic papillomas are more common in dogs, cutaneous endophytic inverted papillomas (CIP) are less common. There are six recognized syndromes related to canine papilloma: oral papillomatosis, cutaneous, inverted cutaneous, multiple pigmented cutaneous, multiple pigmented plaques, and cushions multiple papillomas (Scott *et al*., 2001). Cutaneous inverted papillomas are usually seen in dogs under 3 years of age, occur on the ventral abdomen and groin, and are typically small l (< 2 cm diameter) raised and firm with a central pore (Lane *et al*., 2007*)*. Inverted papillomas are uncommon papillomavirus (PV) induced canine skin lesions. They consist of cup- to dome-shaped dermal nodules with a central pore filled with keratin (Lange *et al*., 2010). The present paper reports diagnosis and therapeutic management of cutaneous inverted papillomas in a dog.

Case History and Observations

A two year old Doberman dog was presented with a history of decreased appetite and skin tags all over body since 8 months. As reported by the owner, the animal was treated earlier with ivermectin, antibiotics, thuza (Homeopathic medicine) and levamisole for 4 months. Upon failure to respond to the treatment, autoimmune therapy was also undertaken by local veterinarian by injecting intramuscularly 2 ml of serum from the same animal once in every three days for a total of five doses, but, the animal did not show any improvement.

On clinical examination, all vital parameters were within normal reference range. Physical examination of the dog revealed multiple 1-2 cm well-circumscribed, firm, raised, fig-shaped masses with central pore all over the body (Fig.1). Fine needle aspiration of skin tag was unrewarding. Hence, excisional biopsy of one of the tags was collected. On section, the mass was firm with a pale tan outer rim and an inner lamellar section with a central pore. Histopathology revealed numerous long papillary projections of hyperplastic stratified squamous epithelium invaginating into the dermis with a severely hyperplastic stratum basale. The cytoplasm of the cells was scant and eosinophilic; the nuclei were large, round to oval with coarse chromatin and occasional mitotic figures (Fig.2). On the basis of histopathological and clinical findings, the condition was diagnosed as multiple cutaneous inverted papillomas.

Treatment and Discussion

Treatment was initiated with Inj. Vincristine sulphate @ 0.025mg/kg b.wt. intravenously at weekly intervals for 4 weeks. Ondansetron hydrochloride @ 1mg/kg intravenously, was administered 30 minutes prior to each chemotherapy. Following chemotherapy, the dog was supplemented with Immune modulators and Omega-3- fatty acids for 30 days. After 3 weeks of treatment, all the skin tags were shed from the body

(Fig.3). Complete recovery was noticed without recurrence in the next 6 months.

Fig.1. Masses all over body

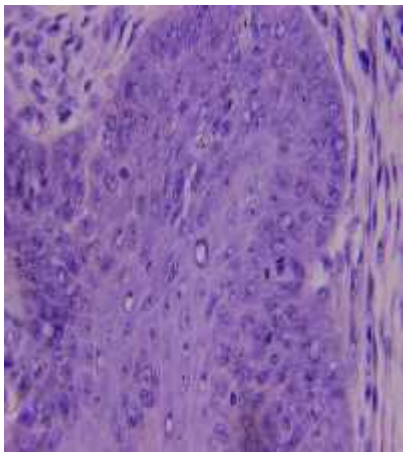

Fig. Histology of the tumour mass

Fig.3.After Treatment

The growth pattern in the present case is endophytic (inverted), with the projections extending into the dermis and hypodermis which is in accordance with the previous report by Moriyama *et al.* (1988) and Campbell *et al*. (1988).

Usually papillomatosis is self-limiting, but if spontaneous regression does not occur or if there are multiple growths with all clinical signs, treatment is indicated. Nicholls *et al*. (1999) opined that cutaneous inverted papillomas will not regress spontaneously because of endophytic growth and require anti neoplastic treatment with vincristine. Vincristine, a plant alkaloid, is a chemotherapeutic agent that exerts cytotoxic activity by disrupting cellular microtubule formation. Coppoc (2009) reported that vincristine induces the inhibition of cell replication, which was in accordance with the present case. However, further investigation is needed to clarify the pharmacodynamics of the drug in treatment of inverted papillomas of dog.

References

Campbell, K.L., Sundbergm, J.P., Goldschmidt, H., Knupp, C. and Reichmann, M.E. (1988). Cutaneous inverted Papillomas in dogs. *Vet. Pathol*., **25**: 65-71.

Coppoc, G.L. (2009). Chemotherapy of neoplastic diseases. *In*: Veterinary Pharmacology and Therapeutics. Riviere, J.E. and Papich. M.G. (Eds.). 9th edn., Willey-Blackwell, New Jersy, U.S.A. Pp. 1205-1231.

Lane, E.P. and Tubbesing, U. (2007). Multiple inverted papillomas in a dog. *J. S. Afr. Vet. Assoc*., **78**(4): 221–223.

Lange, C.E., Kurt, T., Kristin, Bt., Laura Ordeix Wolfgang Von Bomhard and Claude Favrot (2010). Canine Inverted papillomas associated with DNA of four different papilloma viruses. *Veterinary Dermatology*. **21**(3): 287-291.

Moriyama, N., Akaza, H., Suzuki, T., Kawabe, K. and Niijima, T. (1985). Inverted papilloma: observation with scanning and transmission electron microscopy. *Virchows Arch. [Pathol. Anat.]*, **407**: 25-32.

Nicholls, P.K., Klaunbergh, B.A., Moore, R.A., Santos, E.B., Parry, N.R., Gough, G.W. and Stanley, M.A. (1999). Naturally occurring, nonregressing canine oral papilloma virus infection: host immunity, virus characterization, and experimental infection. *Virology*, **20**: 365-374.

Scott D.W., Miller, D.H. and Griffin C.E. (2001). Muller and Kirks Small Animal Dermatology. 6th edn., W.B. Saunders Company, Philadelphia, U.S.A. Pp. 1528.