

Canine Oral Papillomatosis-Review of Treatment

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Abstract

Canine oral papilloma is a self-limiting benign oral tumor caused by canine oral papilloma virus. Young, old-immune-compromised dogs are affected. It is characterised by presence of single or multiple cauliflower like growth on the mucous membranes and skin of the oral cavity. Pathophysiology, diagnosis, differential diagnosis and various treatment approaches including medical and surgical interventions are discussed.

Key words: dog, oral papilloma, oral papilloma treatments, canine papillomatosis

Introduction

Canine oral papillomatosis is either single or multiple, benign cauliflower-like growths (Fig.1) arising from squamous epithelium affect the lips, buccal mucosa, gingiva, tongue and pharyngeal structures. It is induced by contagious canine oral papillomavirus (Papovavirus) non-enveloped double standard DNA virus. Papillomas are seen primarily in young dogs (<1 year



Fig 1. Multiple cauliflower like papillomatous growth in a dog

of age), old and immune-compromised dogs with no breed or sex predilection (Rhea V. Morgan, 2008).

Patho-physiology

The incubation period following viral infection is approximately 4 to 8 weeks. Tumor growth lasts 1 to 5 months. Spontaneous regression may occur over 6 to 12 weeks. Regression is accompanied by lifelong immunity (Rhea V. Morgan, 2008).

Clinical signs

Dogs may be asymptomatic, but multiple or large papillomas cause difficulty in swallowing, salivation, halitosis due to infection, or other signs of oral disease (e.g., inappetence, face rubbing). Lesions vary in appearance from large, gray, pedunculated masses to small, white, smooth nodules. Regressing lesions appear dark and shrivelled and regression may take 1 to 2 weeks (Rhea V. Morgan, 2008).

Diagnosis

Clinical signs and gross appearance in a young dog are suggestive. Surgical biopsy and histopathology characterised by parakeratotic hyperkeratosis, acanthosis, and thicker epidermis with finger like projections into the dermis confirm the diagnosis (Yhee et. al., 2010). Papilloma virus antigen may be detected by immunohistochemistry or PCR.

Differential Diagnosis

- Transmissible venereal tumor (TVT)
 - a) Lesions are typically present on external genitalia as well as the mouth.
 - b) TVT is usually sessile and more often ulcerated.
 - c) Biopsy is diagnostic.
- SCC is often present as sessile, ulcerated masses with bony lysis
- Epulis

Treatment

- Treatment is usually not recommended if only a few papillomas are present.
- If large or multiple growths cause persistent clinical signs or do not regress, treatment is indicated. If infected along with the therapy for regression of papilloma and antibiotics to be added in the course of the treatment.
- Several methods are effective, including surgical excision, cryotherapy 5-6 freeze thaw cycles using liquid nitrogen, and electrosurgery.



- The efficacy of autologous wart vaccines is questionable, and they are not recommended (Rhea V. Morgan, 2008).
- Azithromycin 10mg/kg SID for 10-15 days significantly reduces and prevents recurrence up to 8 weeks. It has potent anti-inflammatory and immunomodulatory effect (Buğrahan Bekir Yağcı et. al., 2008).
- Uwagie-Ero et. al., (2017) reported use of Acyclovir @ 400 mg PO TID for 10 days along with Multivitamin injection 1ml/10 kg B.wt for 10 days in a 8 month old German Shepherd dog resulted in reduction and complete regression of papillomatosis with no adverse effects during the treatment period.
- Combination of homeopathy drugs such as Sulfur 30C, Thuja 30C, Graphites 30C and Psorinum 30C Potency at the rate of 2 drops/5 Kg B.wt twice daily for 15 days aided in fastening the regression of oral papilloma and proved to be safe and cost effective in dogs (Albert Arockia Raj et. al., 2020).
- Naomi Rich, (2020) used Interferon-alpha 2b (IFN) at 1 million units/M² at twice weekly SQ with additional ablation of papilloma with CO₂ laser to treat persistent oral papilloma in a dog.
- Topical botanical therapy includes a mixture of 40% *Sarracenia purpurea* (carnivorous pitcher plant) extract (1:10 dried botanical: 50% ethanol, 10% glycerin); 10% *Melissa officinalis* (lemon balm) extract (1:8 dried botanical:water); 5% *Hypericum perforatum* (St. Johns wort) extract (1:4 dried botanical:58% ethanol); 5% *Glycyrrhiza glabra* extract (Licorise) (1:6 dried botanical:26% ethanol); 40% Versabase gel base at a dose of 0.5 g of gel application topically to the lesions and the surrounding area 2-5 times per day for 14 days. This mixture has antiviral, analgesic and anti-inflammatory activities which inhibits viral replication and promote healing (Allison et. al., 2021).
- Electro/thermocauterizer surgical excision and post-surgical chemotherapy with 5-fluorouracil (50mg/ml) using 50 mg/0.864M², three shots at two weeks interval along with multivitamin and iron supplements proved effective in the canine papilloma in a six-month-old Nigerian Indigenous breed (Haruna et. al., 2021).
- Injection Lithium antimony thiomalate at total dose 1 ml IM twice in a week with a total of six doses, Auto haemotherapy with 3 ml of blood IM once weekly for 3 weeks, *Thuja occidentalis* 30⁰C was administered as 2-3 drops orally twice daily for 15 days and topical zinc oxide ointment application 2 times a day for 4 weeks (Jyoti Kalita et. al., 2022).

Conclusion



The selection of a suitable treatment should be based on the case presentation and the availability of the therapies. A variety of approaches available to treat canine oral papilloma and these can be combined to achieve better results with appropriate clinical trials and evaluating the outcomes will ensure the most effective and tailored treatment plan for the individual case.

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