Short Communication

SUCCESSFUL AUTOVACCINE THERAPY FOR CANINE ORAL PAPILLOMATOSIS

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ABSTRACT

Canine oral papillomatosis is a contagious and spontaneously regressing benign neoplastic disease of young dogs caused by canine oral papillomavirus. Six dogs of different breeds aged between 1-3 years were presented to Veterinary Clinical Complex with the history of wart like lesions in different parts of the oral cavity. Under Xylazine sedation and 10 % Lignocaine spray representative biopsy sample of wart was surgically excised. Autogenous vaccine was developed and mixed with formalin solution to in activate the virus. Dogs were subjected to inj. Autovaccine 1 ml through subcutaneous route once in a week for 5 weeks. Warts were completely regressed within 4 weeks period after autoimmune therapy. There was no recurrence of papillomatosis among the treated dogs during the follow-up period of 6 months and no adverse effects were recorded.

Key words: Oral papilloma, Dog, Autovaccine, CPV 1.

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Canine papillomavirus (CPV) is a double-stranded, non-enveloped, DNA virus. Papillomaviruses are found in various mammalian species (Gross *et al.,* 2005) but are highly host-specific with numerous types identified in dogs (Lange and Fevrot, 2011). Around 20 canine papillomavirus types (CPVs) have been grouped into three genera viz. Lambdapapillomavirus (CPV 1, 6) (Bernard *et al.*, 2010) Taupapillomavirus

(CPV 2, 7,13,17,19) and Chi-papillomavirus includes all other known CPVs.

Oral papillomas are typically observed in young dogs as whitish, grayish or fleshy-colored wart-like masses on the mucous membranes as solitary lesions or as multiple warts distributed throughout the oral cavity.

They can appear on the lips, palate, gums, tongue, and even on the throat of affected dogs. Autovaccine is obtained by specific antigen preparation from the affected individual to whom it will be administered later for therapeutic purposes.

CASE HISTORY AND OBSERVATION

Six dogs of different breeds aged between 1-3 years were presented to Veterinary Clinical Complex with the history of wart like lesions in different parts of the oral Cavity (Table 1). Upon oral examination, halitosis and ptyalism were observed in all the cases. Dog no.1 exhibited severe bleeding from the gums and dog no.3 (Fig 1) was presented with swelling on the upper jaw infested with maggots and multiple warts on gingiva and lips. Gross appearance of the wart in five cases revealed multiple white coloured sea anemone shaped lesion. In pug the lesion was present on the tongue as white and flat lesion. All the dogs were active and none of the cases had cutaneous lesion.

Table 1: Animal description along with lesion regression period

Dog no.	Breed	Age	Sex	Site of lesion	Complete regression (weeks)
1	Spitz	2 yrs	M	Lips and gingiva	4
2	Labrador	3 yrs	M	Lips	3
3	Dobermann	1.5 yr	M	Lips and gingiva	3
4	Spitz cross	2 yrs	F	Lips andtongue	4
5	Golden retriever	1 yr	M	Lips and gingiva	4
6	Pug	1 yr	F	Lips and tongue	3

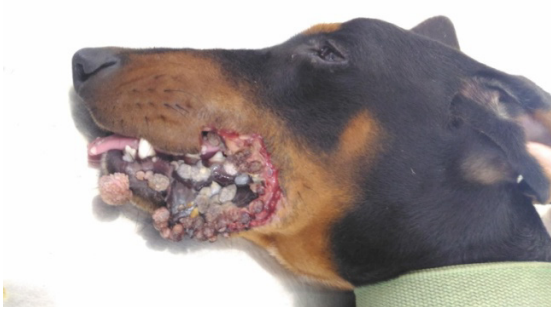

Fig 1: Before treatment – Dobermann/1.5 years- severe wart formation with maggot infestation

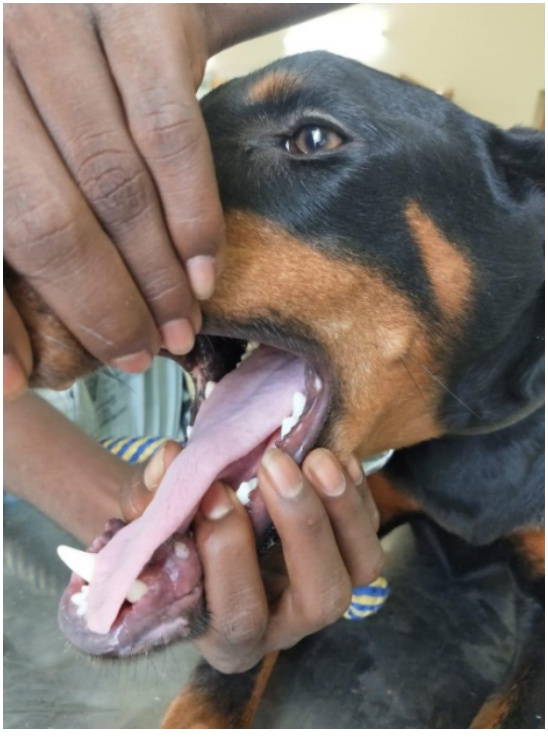

Fig 2: After 4 weeks of autovaccine treatment

TREATMENT AND DISCUSSION

Representative biopsy sample for auto immune therapy was collected from individual dog sedated with Xylazine @ 1 mg / kg body weight along with 10 % Lignocaine topical spray. Bleeding was arrested by topical application of Botroclot. Resected papillomatous growth was further cut into smaller pieces and triturated. Then 10 ml of normal saline was added in triturated sample and centrifuged at 6000 rpm for 15 minutes. The suspension was then filtered using Whatman filter paper size1. Formalin was added at a concentration of 0.5 ml of 10 % formalin for 100 ml of filtered solution along with Streptopenicillin 2 mg /ml. Incubation done overnight at 37°C. Sterility testing was carried out by placing 0.1 ml of suspension on nutrient agar in petri dish and incubating for 24-48 hrs at 37°C. Vaccine was Stored at 4°C until use. Dogs were subjected to inj. Autovaccine 1 ml S/C route once in a week for 5 weeks.

Canine oral papillomas caused by CPV-1(Bernard *et al.,* 2010) are commonly seen in puppies and are characterized by multiple, invasive, cauliflower-like masses typically on the oral mucosa of the lips and mucocutaneous junctions. Very rarely tongue, pharynx and esophagus can also get affected (Yagci *et al.,* 2008). But in our study, lesions recorded were multiple, white or grey, smooth masses seen on lips, commissures, gingiva and tongue. The lesions varied from cauliflower like mass, sea anemone shaped mass to flat plaques.

The infection is usually transmitted through direct contact with the papillomavirus infected dog or contact with the virus in the environment (toys, bedding, food bowls etc.) This might be due to the stability of the virus and rapid spreading of the disease in group housing system, such as in breeding establishments. (Ghim *et al.,* 1995). Benign lesions associated with CPVs usually do not elicit any serious health consequences. Clinical signs mainly seen in the study include halitosis, ptyalism and anorexia in almost all the cases except in one case wherein there was concurrent maggot infestation with the swelling of upper jaw.

Autologous vaccination, in which a wart is removed, made into a crude vaccine, and injected into the same animal, has been used for many years in the treatment of warts (Agut, 1996). According to (Agut *et al.,* 1996) the efficacy of auto vaccine therapy for cutaneous papilloma was found to be 100 %. They emphasized that by heat deactivation of papillomavirus saved time and avoided chemical contamination. This is in accordance with our present study wherein the efficacy was found to be 100 % (Fig. 2).

Various treatment protocols for papillomatosis in dogs have been described: oral Azithromycin (Yagci *et al*., 2008), Etretinate (Miller *et al*., 2012). Acyclovir (Uwagie-Ero *et al*., 2017) surgical excision, crushing laser surgery or cryosurgical intervention (Miller *et al*., 2012), herbal topical application and/or oral *Thujaoccidentalis* has been used, in human, dog and cattle, to treat canine oral papillomatosis (Lira *et al*., 2012) and cutaneous papilloma (Umadevi and Umakanthan, 2013).

Tuddow *et al.,* (2018) reported that the extensive use of immune suppressive drugs in modern practice may contribute to an increased incidence of malignant transformation of CPV-associated lesions. Evenenvironmental factors such as pollutants, food additives, global warming, or damage to the ozone layer may also weaken the immune system or potentially enhance the oncogenic potential of CPVs. In our present study there is no malignant transformation of the lesions.

CONCLUSION

The surgical excision of papillomatous lesion and administration as auto vaccine after processing in the treatment regimen of canine oral papillomatosis is proved to be successful without recurrence and any adverse effects

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