

Surgical and chemo-therapeutic management of canine papilloma

Haruna AA^{1*}, Mutah AA¹, Mana HP¹, Nnadi OD², Ezema KU², Yoksa DT³, Mohzo DL³ and Bokko PB¹

¹Department of Veterinary Surgery and Radiology, Faculty of Veterinary Medicine, University of Maiduguri, Borno, Nigeria

²Veterinary Teaching Hospital, University of Maiduguri, Borno Nigeria

³Department of Veterinary Pathology, Faculty of Veterinary Medicine, University of Maiduguri, Borno Nigeria

Corresponding author: ahaliyu1@yahoo.com

Received on: 10/10/2021

Accepted on: 08/12/2021

Published on: 15/12/2021

ABSTRACT

A six month-old canine of Nigerian indigenous breed was presented with several cauliflower-like growths on the mucous membrane of the lateral commissures of the mouth. Such growth was also present on the dorsal and ventral areas of the tongue. These growths were greyish-white in colour and were diagnosed as canine papilloma upon clinical and laboratory investigations. Surgery and chemotherapeutic management with electric thermo-cauterizer/potassium permanganate and 5-flouracil proved effective. Histopathological sections stained with H&E revealed a diffuse exophytic growths with perinuclear vacuolization, hyperkeratosis and ballooning degeneration of Keratinocytes. Findings were suggestive of oral papilloma.

Keywords: Canine papillomatosis, Cauliflower, electric cauterization, 5-Flourouracil.

Cite This Article as: Haruna AA, Mutah AA, Mana HP, Nnadi OD, Ezema KU, Yoksa DT, Mohzo DL and Bokko PB (2021). Surgical and chemo-therapeutic management of canine papilloma. J. Vet. Res. Adv. 03(02): 21-23.

The Papilloma viruses have been found to be the major aetiological agents of warts in dogs and can also be seen on the penis, vulva, skin and conjunctival membranes (Sansom *et al.*, 1996). Cutaneous squamous (mucous membrane) papilloma (Campbell *et al.*, 1988), cutaneous inverted papilloma (Shimada *et al.*, 1993) and canine pigmented epidermal nevus (Nagata *et al.*, 1995) have been associated with papilloma virus infection. Multiple canine papilloma, though uncommon in occurrence, indicate involvement of more than one type of papilloma virus (Kavithaa *et al.*, 2014). Various treatment options available for canine papillomatosis include autogenous vaccinations (Nicolls and Stanley, 1999) for prophylaxis as well as curative purpose, spontaneous regression and autoimmune therapy (Ghim *et al.*, 2000), surgical excision, cryotherapy, crushing of warts to stimulate immunity were employed in the treatment. Antibiotics like azithromycin (Yaggci *et al.*, 2008), lithium antimony thiomalate (Dileepkumar and Ansari, 2012) and also the use of Vincristine (Singh and Bhardwaj, 2014) are effective. It is to describe surgical and chemotherapeutic management of canine oral papilloma.

Case History and observations

A client brought a six months-old male dog to the VTH, University of Maiduguri. He noticed growths in the oral cavity which have been there for a period of two months. On physical examination, Grayish-white cauliflower-like warts of varied sizes were present on the mucous membrane of the lateral commissures of the mouth and on the dorsal and ventral aspects of the tongues (Fig.1a&1b).

Histopathological findings

Fixed tissue sample were embedded in paraffin and 5µm slice was dehydrated using graded level of alcohol and stained with hematoxylin and eosin (H&E). Photomicrographs of the warts revealed finger-like projections which is characteristic of warts (Fig. 2a), perinuclear vacuolization, hyperkeratosis and ballooning degeneration of the wart cells were evident of papillomatosis (Fig. 2b) that was confirmatory diagnosis of Canine papilloma.

Treatment and Discussion

Following standard pre-surgical assessment, the dog was pre-medicated using Atropine Sulphate (Vulcan Laboratories PVT. Ltd., Kolkata) 0.02mg/kg IV and was sedated with 2% xylazine (XYLADOT® Dotma Pharma) 1mg/kg IV after 5 minutes. Thiopentone Sodium (THIOTONE® Flagship Biotech, Mumbai) at 7mg/kg slow IV was used for induction and maintenance of anaesthesia. The oral cavity of the dog was gagged open to allow for proper oral visualization and restraint.

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Fig.1: (a). Growth protruding from the oral mucosa, (b). Pinkish Cauliflower-like growths on the gingiva and lips and (c). Electrocauterisation of the growths

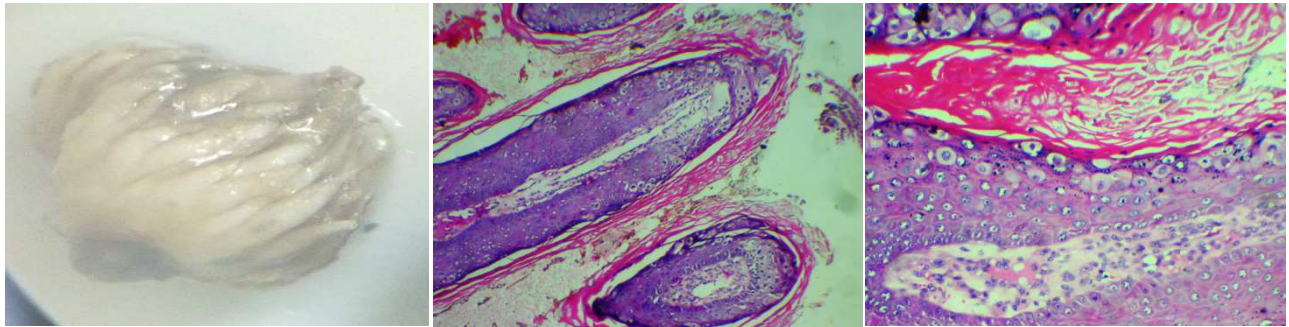


Fig.1(d). Removed papillomatous growth with finger-like projections, **Fig. 2 (a).** Photomicrograph of the excised growth with a finger-like projection. H&Ex40, (b). Photomicrograph of the growth with perinuclear vacuolization (red arrow), hyperkeratosis (blue arrow), ballooning degeneration (black arrow) H & E x100

The mouth was flushed with normal saline to dislodge any food particle. An electric cauterizer was used to carefully excise all tissues invaded with the wart including healthy tissues surrounding the wart to eliminate chances of satellite tumour cells (Fig 1c). Minimal bleeding was experienced due to the thermal cauterization effect of the device used. Potassium Manganate (KMnO_4) crystals were smeared upon the excision sites to further control the bleeding.

Chemotherapy

The dog was chemo-therapeutically managed with 5-fluorouracil (50mg/ml) using 50mg/0.864M², 3 shots at two weeks interval, Amoxyinject (150mg/ml) at 0.5mg/kg for 3 days, B-complex injection at 10mg/kg for 5 days and Iron Dextran (100mg/ml) at 10mg/kg stat.

Gross and Histopathological findings revealed the presence of prominent epidermal finger-like projections as reported by Yhee *et al.* (2010) ballooning degeneration of keratinocytes was also observed in this report and are characteristic of warts. Several approaches have been used in the management of oral papillomatosis in dogs. Surgical excision is among the immediate interventions explored for the management of this condition but with the

possibility of recurrences (Kuntsi-Vaattovaara *et al.*, 2003). A multimodal approach using a combination of surgical intervention, chemotherapy, radiotherapy, ablation with laser/cryotherapy and immunotherapy has been the suitable and most reliable option for the management of most tumour cases (Paterson, 2008).

Care must be taken when using the electro cauterizer by applying digital pressure around cauterization site to reduce excessive bleeding and cooling-off of the cauterizing blades. Assisted Potassium per Manganate crystals and or Silver Nitrate should be applied immediately to curb the bleeding. Volatile or highly inflammable solvents like Alcohol must not be used with the cauterizer to prevent burns (Sundberg *et al.*, 1994). Deeply located warts must be excised with care to prevent injuries to surrounding tissues especially those on the deep upper palate. A combination of surgical excision of the wart masses using Electro-cautery and 5-Fluro-Uracil in this report has produced a good result following recovery of the dog after 3weeks (Dileepkumar and Ansari, 2012).

Conclusions

The use of a multimodal approach in the management of papilloma proved to be effective.

Histopathological diagnosis is confirmatory diagnosis of oral papillomatosis.

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