CASE REPORT
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DIAGNOSIS AND MANAGEMENT OF PRIMARY NASAL TRANSMISSIBLE VENEREAL TUMOR IN A NON DESCRIPT MALE DOG

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ABSTRACT

Transmissible venereal tumors (TVTs) are widely distributed canine tumors of the external genital tract that are coitally transmitted. Primary occurrence of oral and nasal TVT in dogs is extremely uncommon, despite instances of secondary occurrence. A nondescript male dog, aged seven, was brought to University veterinary hospital Kokkalai with a three-day history of bilateral epistaxis, sneezing, facial deformities, and hyporexia. Clinical examination revealed open mouth breathing, submandibular lymphadenopathy, and a friable, cauliflower-like mass extending over the soft palate in the oral cavity. Diffuse osteolytic changes in the nasal conchae and turbinates were observed on radiography. Cytological examination of the nasal swab revealed the presence of large number of round to oval cells with basophilic cytoplasm containing distinct intracytoplasmic vacuoles and prominent nucleoli, suggestive of TVT. The dog received weekly injections of vincristine sulphate intravenously at a dose of 0.7 mg/m2 for four weeks, and complete tumor remission was attained. In conclusion, intranasal TVT should be considered as a differential in dogs exhibiting persistent symptoms of sneezing, nasal discharge, dysponea, and recurrent epistaxis.

Keywords: neoplasia, Epistaxis, Vincristine Sulphate, Dog, Nasal TVT

INTRODUCTION

The transmissible venereal tumor (TVT) is a sexually transmitted neoplasm that is widely reported across the globe, although it is more prevalent in countries where there is a high number of stray dogs (Dhillon *et al*., 2021). Regardless of breed or sexual preference, the disease most commonly affects dogs between the ages of two and five. Usually the external genitalia are the affected organs (Lapa *et al*., 2012). It is possible to have an extragenital presentation on mucosal membranes, primarily the nose cavity, but less frequently the rectum, conjunctiva, oral cavity, and

skin (Muste *et al*.,2012). Following social behaviours like as sniffing, licking, or scratching, extragenital involvement is seen (Das, 2000). Diagnosis of TVT is done based on histology, cytology, clinical symptoms, and history. Chemotherapy is the treatment of choice (Kabuusu e*t al*.,2010).

Although, there are reports of secondary occurrence of oral and nasal TVT in dogs, primary occurrence at these sites is rare. The present study describes history, clinical signs, radiographic and cytology findings of the primary nasal TVT in a dog

CASE HISTORY AND OBSERVATION

A 7 year old non descript male dog was presented in UVH kokkalai with history of nasal bleeding, swelling on face and hyporexia since 3 days. Clinical examination revealed emaciation, submandibular lymphadenopathy and distension and lateral deviation of the turbinate and muzzle regions. On the examination of the oral cavity, halitosis, blood-tinged saliva, and a friable, cauliflower-like growth in the mouth cavity were noticed. Examination of the external genitalia and other body parts revealed no anomalies. Thrombocytopenia and anaemia were evident on the complete blood count. An abnormally radiopaque nasal cavity due to tumor mass with loss of the nasal conchae and turbinates detail and bony lysis of cribriform plate were noticed in both lateral and ventro-dorsal views of head. (Fig 2a,2b). The thoracic radiograph did not reveal any metastatic changes in lungs. A large number of round to oval cells with basophilic cytoplasm containing distinct intracytoplasmic vacuoles and prominent nucleoli were observed in cytological evaluation of the nasal swab (Fig 3). Primary nasal TVT was diagnosed based on the obtained evidence.

Fig. 1a: Distension and lateral deviation of the turbinate and muzzle

Fig. 1b: mucopurulent discharge mixed with frank blood from mouth

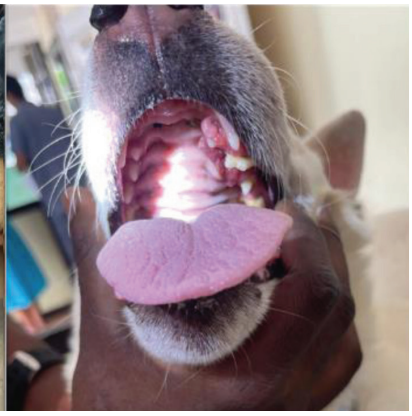
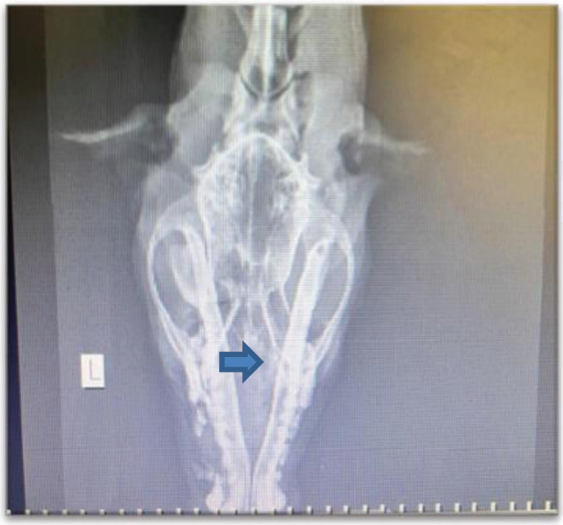


Fig 1c: Extension of a cauliflower like mass into the oral cavity



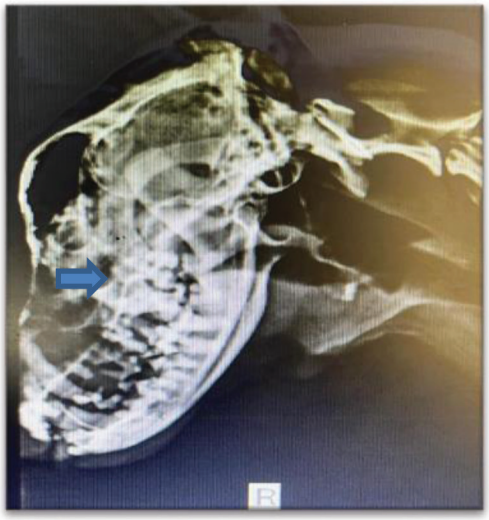


Fig. 2a, 2b: Radiopaque nasal cavity due to tumor mass with loss of the nasal conchae and turbinates detail and bony lysis of cribriform plate on the right lateral and dorso ventral views

TREATMENT AND DISCUSSION

The dog was treated with intravenous injection of Vincristine at a dose of 0.7 mg/m2 and intramuscular injection of Prednisolone acetate (0.5 mg/kg, i.v.) once weekly for four weeks, and Amoxycillin Clauvulanate orally @ 12.5 mg twice daily for the first week. The animal made an uneventful recovery after 4 weeks and complete remission of tumor was achieved. The dog remained in good health condition with no evidence of tumor recurrence noted for the past 6 months.

Globally, TVT is a prevalent reproductive disorder in dogs occurring between the ages of one and seven, with the lowest prevalence over the age of ten, (Kabuusu *et al*., 2010). In contrast to the genital form of TVT without sex predisposition, in publications concerning the nasal form, males were more frequently affected (Rezaei *et al*., 2016). Srivastava *et al.(*2013) identified a higher incidence of TVT in crossbred/nondescript breeds. Transmissible venereal tumor is most commonly found in the female dog's vestibule and vagina, and the male dog's penis. There have also been reports of secondary involvement of other body parts. Primary extragenital involvement is almost

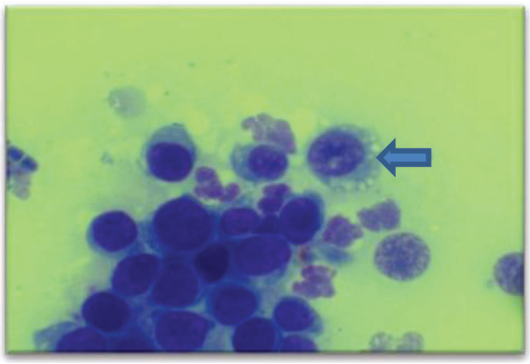


Fig. 3: Round to oval cells with basophilic cytoplasm containing intracytoplasmic vacuoles and prominent nucleoli

rare. (Chikweto *et al*., 2013). Rezaei *et al*. (2016) suggested that it is most frequently transmitted during mating, but it can also be spread by sniffing or other physical contact with abraded skin, leading to extra-genital TVT. Chikweto *et al.* (2013) also found that 19.2 percent of dogs had TVT in extragenital locations, including the ribs, skin, spleen, liver, nasal cavity, eye orbit, subcutaneous, submandibular, cervical, and inguinal lymph nodes along with ovarian metastases in 2 dogs. Remarkably, in 5.1 percent of instances, extragenital lesions were found to be present without main genital involvement.

Although the dog in this instance was house kept, it frequently roams outside and may have come into contact with stray dogs, which could account for how the tumor spread. Metastasis of TVT is rare, occurring in less than five percent of cases and exclusively in pups and dogs with compromised immune systems (Nak *et al*., 2005). It is important to distinguish TVTs from other round cell skin cancers, such as mast cell tumor, lymphoma, and histiocytoma. The site of tumor plays an important role in diagnosis.(Muten, 2002)

Dhillon *et al.* (2021) confirmed that the diagnosis of nasal TVT can be made by cytological analysis of nasal discharge, which distinguishes it from other nasal tumors. The presence of discrete, transparent, cytoplasmic vacuoles is the most noticeable cytological characteristic of TVTs. In our investigation, comparable cytological characteristics were found. With nasal discharge and epistaxis as the initial symptoms, the clinical signs reported in this case are comparable to those reported by Papazoglou *et al.* (2001). The delicate aspect of the tumor was responsible for the epistaxis upon excitement or handling.

Chemotherapy is the most effective treatment for canine TVTs, although there are other options as well, including immunotherapy, radiation therapy, thermal therapy, and surgical excision (Rogers *et al*., 1998; Das and Das, 2000; Kangasniemi *et al*., 2004; Nak *et al*., 2005; Sankar *et al*., 2016). The commonly used medication, Vincristine sulphate, is well tolerated and reasonably priced. Complete remission of TVT typically happens after two to eight weekly injections (Nak *et al*., 2005; Singh *et al*., 2019). In a TVT clinical investigation with two cases of the primary intranasal type, one dog experienced complete remission after 6–8 weeks of vincristine chemotherapy, while in other, noticed a recurrence of nasal symptoms 8 months after the treatment ended (Rogers *et al*., 1998). Additional therapeutic options include combination chemotherapy, Doxorubicin monotherapy, or cytoreductive surgery prior to Vincristine usage. (Papazoglou *et al*., 2001)

SUMMARY

This case report describes the diagnosis and successful management of nasal TVT without relapse with 4 weekly intravenous injections of Vincristine sulphate. In dogs that exhibit persistent symptoms such as recurrent epistaxis, nasal discharge, dysponea, and sneezing, even when there is no visible tumor growth, intranasal TVT should be taken into consideration. Cytological examination can be used to make the diagnosis, and Vincristine sulphate chemotherapy exhibits complete tumor remission.

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