

## Rare Cases of Primary Canine Extragenital Transmissible Venereal Tumours

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**Abstract** A 4½ months old female Boxer pup, 6 years old Dachshund bitch and 10 years old Labrador dog were presented with extragenital transmissible venereal tumors. Based on the anamnesis, clinical symptoms and cytological examinations the cases were diagnosed as primary extragenital transmissible venereal tumors and histopathological examination of the specimens confirmed the diagnosis. The animals were treated successfully using Vincristine Sulphate intravenously at the rate of 0.025 mg/kg body weight.

**Keywords** *Extragenital TVT; Dogs; Histopathology; Vincristine Sulphate*

### 1. Introduction

Canine Transmissible venereal tumor (TVT) also called *Sticker's sarcoma* is a reticuloendothelial tumor that affects mucosa of extra genital organs [1, 2]. It is a well characterized sexually transmitted neoplasm but can also be transmitted by other social behaviours such as licking, sniffing and biting of the tumor affected areas [3, 4]. Canine Transmissible Venereal Tumor is generally considered as a benign tumor [5] and it is rarely reported in extragenital locations [3, 6]. The present report records primary extragenital transmissible venereal tumors in a pup and two adult dogs and their successful treatment.

### 2. Case History and Observations

#### Case 1

A 4½ months old female Boxer pup was presented with the history of having tumor like masses on the neck for the past 25 days. Clinical examination revealed two subcutaneous round alopecic nodules of 1" diameter one on the anterior dorsal region and another one in the central area of the neck.

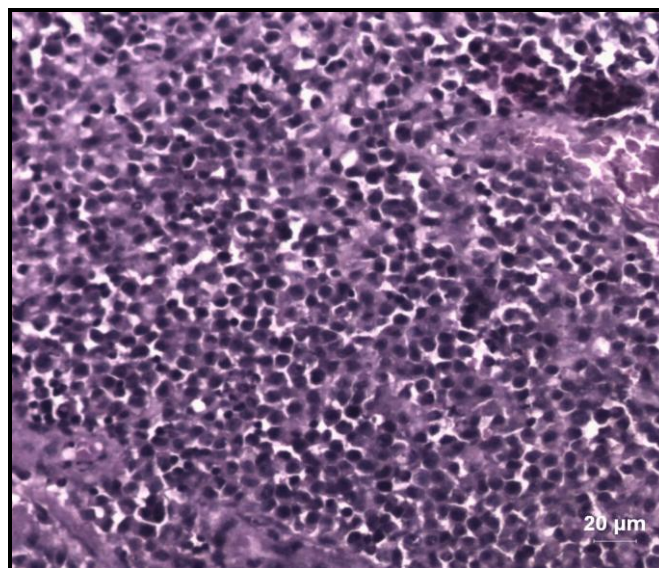
## Case 2

A 6 years old Dachshund bitch was presented with the history of having non healing wounds scattered in various parts of the body for the past 2 months. Clinical examination revealed multiple nodular ulcerated lesions of varying sizes from 1 cm to 1.5 inches diameter over the nasal, gingival, neck, back, and flank and thigh regions. Bloody nasal discharge was also noticed.

## Case 3

A 10 years old male, Labrador dog was presented with the history of having ulcerated swelling in the mammary gland for the past 1½ months. Clinical examination revealed a nodular, ulcerated tumor growth of 2 inches diameter in the left 2<sup>nd</sup> mammary gland.

Anamnesis revealed that the owners of case 2 and 3, allowed the dogs at times to go out of the house and roam. Cytology of the fine needle aspiration of the samples revealed a uniform population of round to oval cells, with lightly basophilic cytoplasm that contained multiple distinct vacuoles. Frequent mitotic figures and occasional lymphocytes were also observed. The cytologic diagnosis was TVT in a progressing growth phase. However the external genitalia had no signs of TVT in all the three cases. But vaginal TVT was diagnosed in the pup's mother in case 1. According to anamnesis, clinical and cytological examinations, the cases were diagnosed as primary extra genital TVT. Histopathological examination of the specimen excised from the thigh, neck and mammary gland confirmed the diagnosis (Figure 1).



**Figure 1:** Histopathology of Extragenital Transmissible Venereal Tumors in Dogs

## 3. Treatment and Discussion

The pup and the dogs were administered with Vincristine Sulphate (Cytocristin, Cipla Ltd., Mumbai) intravenously at the rate of 0.025 mg/kg, at weekly intervals. Case 1, 2 and 3 required 3, 6 and 4 injections respectively. The nodules regressed completely by the end of 5, 8 and 6 weeks in case 1, 2 and 3 respectively and there was no recurrence even after 6 months.

Canine transmissible venereal tumor is most common in dogs of 2 to 5 years old and there is no breed or sex predisposition [7] but in the present report even 4½ months old pup also got affected. Canine TVT was a benign reticulo-endothelial tumor of the dog that mainly affected the genitalia and

the etiology appeared to be cell transplant from affected to unaffected dogs [8]. In the present study the occurrence of TVT in a pup suggested that TVT cells could be inoculated into puppy skin lesions by the mother during social interactions such as grooming and other mothering behavior [8]. The identification of individuals by smelling the genital areas was a common type of behaviour of canine species. The location of TVT on the nasal mucosa would be due to inspiration during the action of smelling [4]. Transmission of tumors to the various regions of the skin might be facilitated during the action of scratching [3] as observed in case 2. In case 3, the tumor cells might have got transferred to the mammary gland, when it got contacted with the genitalia of another affected dog. TVT which proliferate in genital organs had a cauliflower like appearance with ulceration but extra genital TVT were generally observed in nodular form, bearing ulcerations of variable sizes which might invade the mucosa and sub mucosa [3].

In animals that have an appropriate antitumor immunologic response, spontaneous tumor regression might occur after the tumor reached a certain size. However, in animals that were unable to mount an appropriate immunologic response, the tumor might continue to grow and metastasize. Therapy was generally recommended when a canine TVT is definitively diagnosed [9]. Several therapeutic modalities had been used with canine TVT including surgery, radiation therapy, biologic response modifiers and chemotherapy. Chemotherapy was the most effective way to treat canine TVT and among the various chemotherapeutic agents, Vincristine was considered one of the most effective agents [10]. In the present study also, the response to Vincristine was very effective and there was complete regression of extragenital TVT in all the three cases. Dogs recovered uneventfully and there was no recurrence during the follow up period of six months.

#### 4. Summary

Transmissible Venereal Tumor (TVT) is a round cell tumor which affects primarily the external genitalia of dogs of both sexes. Rarely the tumour may be found in extragenital regions such as nasal cavity, oral cavity, skin, rectum, lips, oral mucosa and musculature. The present report records rare cases of primary non genital transmissible venereal tumor in a pup and two adult dogs and their successful treatment with Vincristine sulphate.

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