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## Management of canine transmissible venereal tumor (TVT) using chemotherapy

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### Abstract

Chemotherapeutic management of a case of transmissible venereal tumor (TVT) in a 3-year-old stray bitch is reported. The size of the pedunculated mass had significantly decreased after 3 sessions of chemotherapy using vincristine sulfate.

**Keywords:** Chemotherapy, transmissible venereal tumor, vincristine sulfate

### Introduction

Sticker tumor, canine transmissible venereal sarcoma, canine transmissible venereal tumors, or transmissible venereal tumors all are naturally occurring tumor in dogs that are typically brought on by sex with an infected animal. It most frequently affects sexually active canines between the ages of 2 and 5 (Gurel *et al.*, 2002) [2]. According to Khan and Line (2005) [3], it is transmitted through coitus, licking, and biting of the afflicted area. The cancer cell itself is the causative agent in TVT, not a virus or an agent that acts like a virus. Dog cells normally contain 78 chromosomes; however, malignant cells in canine TVT typically contain 57-64 chromosomes, making them seem different from normal cells. In dogs, the X and Y chromosomes are acrocentric, whereas malignant cells are metacentric and submetacentric. Although only 5% of them are metastatic, they can metastasize to local lymph nodes and occasionally to the spleen, kidney, eyes, pituitary, skin, and peritoneum, yet they are primarily benign (Tahira *et al.*, 2013) [6].

### Case History and Observations

A 3-year-old stray bitch was reported at the clinics of Veterinary Gynaecology and Obstetrics, College of Veterinary and Animal Science, Bikaner, with a history of continuously becoming weak for the last 3 months and the protrusion of a pedunculated mass with small lumps out of the vagina with oozing blood (Figure 1). The appetite of the bitch was normal. Clinical and gynaecological examination revealed that the animal was active and alert with a normal body temperature, dehydrated and had cauliflower-like lumps in the genitalia with slight ulcerations on the surface. Based on history, clinical signs and symptoms, the case was diagnosed as a transmissible venereal tumor.



**Fig 1:** Bitch with lesion of TVT in genital area

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### Treatment

The bitch was treated with slow intravenous administration of 0.5 ml vincristine sulfate (Cytocristin) @ 0.025 (mg/kg Body weight) once a week for 3 weeks. The owner was aware of its side effects, leading to alopecia in dogs. Surgical excision was avoided due to the anatomical location of the tumor and the chances of it recurring due to risk of contamination during surgery. Injection Normal Saline (0.9%) 200 ml intravenously and injection Tribivet (multivitamin) 2 ml intravenously, were also administered as supportive therapy. Syrup Zipvit (multivitamin), 20 ml orally, was also advised for 15 days. The size of the tumor was significantly reduced at the end of the third chemotherapy session.

### Discussion

TVT's are immunogenic tumors, and the host's immune system plays a key role in preventing growth and metastasis. The immune system has a role in the development of TVT, and the disease's onset indicates if the neoplasia was successful in suppressing the host immune system. TVT-exposed dogs have a lower risk of developing this malignancy in their puppies' offspring. Animals with impaired immune systems are more likely to acquire tumors that can spread and become viable TVTs. TVT spontaneously regresses in healthy animals. Regression is linked to necrosis and apoptosis, as well as the infiltration of lymphocytes and plasma cells. Also, there is a greater likelihood of metastasis in young animals (Stockmann *et al.*, 2011) [5] and research found that metastasis occurred in 2% of females and 16% of males (Martins *et al.*, 2005) [4]. Leucopenia and vomiting can be caused by vincristine's myelosuppression and gastrointestinal side effects in 5-7% of patients. The most common side effects of vincristine are local tissue lesions brought on by drug extravasations during intravenous administration, which result in necrotic lesions with crusts (Calvet *et al.*, 1996) [1].

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### Conflicts of Interest

The authors declare no conflict of interest.

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