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Successful Chemotherapy of Canine Transmissible Venereal Tumor in a Bitch

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Transmissible venereal tumor (TVT), also referred to as Sticker's tumor, venereal granuloma, transmissible venereal sarcoma, infective venereal tumor, and transplantable lymphosarcoma, is a tumor that primarily affects the genitalia of sexually mature dogs, and is usually transmitted during coitus (Rogers, 1997). In India, it is the most common tumor of dogs owing to uncontrolled breeding practices (Singh *et al*., 1991). The transmissible nature is suggestive of an infectious etiology; however, no infectious particles have ever been detected within the tumor cells (Rogers, 1997). These tumor cells are not the patient's own cells transformed into cancer cells. The TVT is a tumor that grafts itself from one dog's body onto another dog's body (Richardson, 1981). The present communication reports a case of TVT and its successful chemotherapeutic management in a bitch.

Case History and Observations

A four year old bitch, weighing 25 kg was presented to the Teaching Veterinary Clinical Complex of the College, Junagadh with a history of hemorrhagic discharge and a protruding mass from vagina for fifteen days. Animal was active and alert. It had a regular vaccination & deworming history and whelped six month back. Respiration, pulse and temperature were 23/min, 82/min,102.3°F, respectively. Conjunctival mucous membranes were congested and lymph nodes were palpable. On physical examination, large cauliflower like friable tumor mass could be palpated. Condition was diagnosed on the basis of clinical examination and microscopic examination of vaginal smear using Giemsa stain (Fig. 2), which revealed it a tumour (Fig.1).

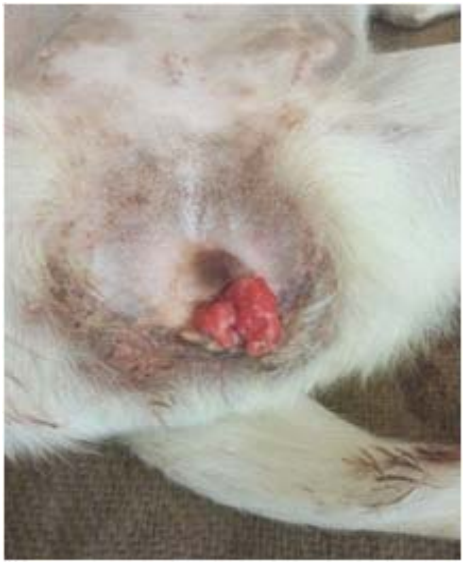

Fig.1: A pinkish cauliflower like CTVT growth on external genitalia of female Labrador

Treatment and Discussion

Vincristine sulfate administered slow intravenously @ 0.025 mg/kg b. wt. in a 5 ml normal saline at weekly interval for three consecutive weeks led to complete regression of lesions

within 30 days in the bitch. The initial side effects observed in the bitch, such as anorexia and dehydration, disappeared after complete regression of the tumor. The tumor cells, which were initially very large (15-20ì; average), progressively became smaller at the time of second dose, while on third and last administration, the tumor mass was completely disappeared (Fig. 3).

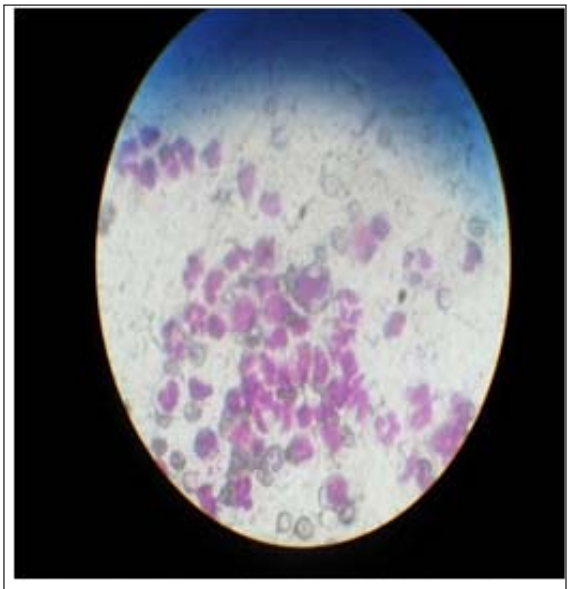

Fig.2: Cytological investigation

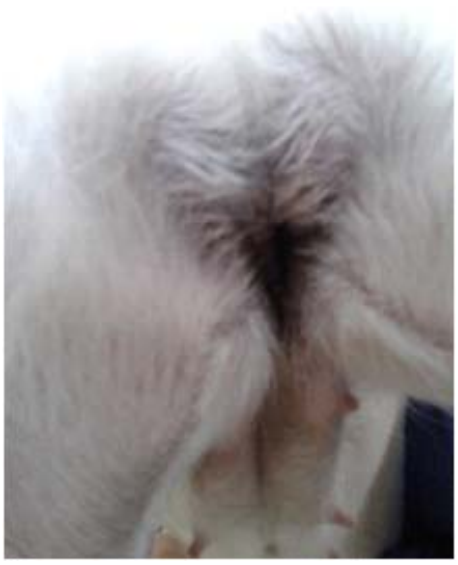

Fig.3: Reduction of abnormal growth of CTVT after chemotherapy

The treatment regimen used with a total of 1.83 mg vincristine sulfate over three weeks was effective in the remission of CTVS in dog, which is in collaboration with findings of Khan *et al*. (2009). This is the most elective, safe and convenient chemotherapeutic agent, giving a better survival rate even in CTVS patients with extra genital metastasis (Calvert *et al*., 1982; Singh *et al*.,1997). Thus, it would appear that CTVS can be considered as a neoplasm amenable to chemotherapy with vincristine sulfate alone. The findings are also similar and less taxing on the dogs given combined cyclophosphamide (0.1 mg/kg b.wt.) and vincristine sulfate (0.025 mg/kg b.wt. daily for 10-12 days by Oni (1994). Amber *et al*. (1990) however used the drug at 0.5 mg/m^2 body surface area (BSA) weekly for 12 weeks with a chances of recurrence. The present regimen has reduced total dosage without recurrence within one year, which is contrary to the findings of Amber *et al*. (1990).

Vincristine sulfate arrests cell division in the metaphase stage by binding to tubulin dimer that is necessary for mitosis of spindle fiber resulting in decreased tumor cell proliferation and apoptosis (Gonzalez *et al*., 2000). It also activates macrophages in the regressing tumor suggesting a localized antibody-mediated control of TVT. However a complete remission of a tumor in a dog that had failed to respond to vincristine was reported to be successfully treated with intravenous doxorubicin@ 30 mg/m^2 thrice at weekly interval by Calvert *et al*. (1982).The ignorance of the dog owners and lack of stringent legislation for monitoring the sexual health of dogs are the main causes of the widespread distribution of this disease throughout the tropical and subtropical country.

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Conflict of Interest: All authors declare no conflict of interest.

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