

CANINE TRANSMISSIBLE VENEREAL TUMOR IN NON DESCRIPT DOG

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Abstract: A case of female dog presented at Teaching veterinary clinical complex Parbhani with a complaint of reddish discharge from her vagina from last 3 to 4 days. On clinical examination, tentatively we diagnosed it as a canine transmissible venereal tumor (CTVT). Canine transmissible venereal tumor is a sexually transmitted benign tumor of dog which affects external genitalia and occasionally internal genitalia of both male and female dog. Based on clinical signs and cytological findings, the dog was diagnosed as transmissible venereal tumor (TVT). The dog was treated with 0.025 mg/kg body weight vincristine sulfate for four weeks and with antibiotic Amoxicillin at a dose of (10 mg/kg body weight) and multivitamin for 5 days. The response with vincristine therapy was excellent leading to complete regression of the neoplasm after 4 weeks.

Keywords: Dog, TVT, Cytology and Vincristine

Introduction

Canine TVT is highly contagious disease that generally attacks the external genital organs of both male and female dogs and also been reported in fox and jackel. It is also known as infectious sarcoma, venereal granuloma, transmissible lymphosarcoma (Dameskiet *al.*, 2019). Disease is transferred from one dog to another through sexual contact by physical transfer of viable tumor cells (Stockman *et al.*, 2011) can also be transfer by licking, sniffing the affected area (UCAR, 2016) the tumor cells may also affects extra genital organs like nasal cavity ,conjunctiva, eye, buccal and anal mucosa (Barron *et al.*, 1963) (Batamuzi and Bittegeko 1991) (Higgin, 1966) (Raghunath *et al.*, 2015).CTVT is usually seen in young, sexually active dogs of any sex at any age of any breeds (Sritrakoonet *al.*, 2015). Metastasis in male seen at cranial glans penis, prepuce mucosa, bulbourethral gland. Metastasis in female

seen at caudal part of vagina, vulva. TVT may lead to phimosis in male dogs (Sreekumar *et al.*, 2015).

Clinical sign of vulvar sarcoma is characterized by presence of small pink to red nodules or papules (1-3mm) observe after 2 to 3 weeks of implantation. Then this multiple nodules fuse together to form larger red hemorrhagic, cauliflower like friable mass of 5 to 7 cm (UCAR, 2016).

Diagnosis of TVT is based on clinical symptoms and cytological or histological findings, biopsy, fine needle aspiration. CTVT is treated by chemotherapy, surgical excision, radiotherapy, immunotherapy, but most effective and cheap is chemotherapy (Abeka, 2019).

Case history and observation-

Two year old mixed breed female dog presented at Teaching veterinary clinical complex parbhani with a complaint of reddish discharge from her genitals with a history of mating before 20 days with stray dog with loss of appetite from 3 to 4 days.

On physical examination there was small nodular growth seen at the dorso lateral wall of vulva. So the diagnosis of this is made by cytological examination of smear method from tumoral mass. On cytological examination there were round, ovoid, nucleus and many cytoplasmic vacuols were seen with pale or slight bluish cytoplasm. So it is confirmed that the dog is suffering from CTVT. And the dog was given an injection of vincristine sulfate @ 0.025 mg/kg body weight intravenously once in every week for 1 month. To reduce secondary infection the dog was given the antibiotic Amoxicillin at a dose of 10 mg/kg body weight for 5 days. To increase dog appetite we prescribed multivitamins for 10 days and oral hematinic to recover the blood loss due to the tumor. During the treatment, sometimes dog suffered from vomition, loss of appetite, dullness and restlessness. For the control of vomition we prescribed antiemetics.

Diagnosis

This condition was tentatively diagnosed as TVT based on physical examination but for confirmatory diagnosis we can perform histopathology, biopsy, impression smear and observed under oil immersion microscope after staining cytoplasmic vacuols were seen and round oval nucleus with pale or blue cytoplasm. Here we performed impression smear method from the tumoral mass.

Treatment

TVT can be treated by chemotherapy, radiotherapy, surgery, immunotherapy but the chemotherapy is most effective and commonly used therapy. The use of cytostatic/antimitotic agent like vincristine sulfate @0.025 mg /kg body weight intravenously and antibiotic like Amoxicillin 10mg/kg body weight with supportive therapy like oral heamatinics and multivitamin. Vincristine was given with fluid (normal saline at the rate of 2 drops/second) to reduce the burning sensation in the veins. Chemotherapy was performed for four sessions and the condition was resolved.

Discussion

Generally tumors are of two types benign and malignant this is mostly benign in nature. Benign tumor is a tumor which doesn't invade nearby tissues. A benign tumor is less harmful than malignant tumor. Malignant tumor is a tumor which can invade nearby tissues (Tarini, 2018). This rarely shows metastasis (5 to 17%). It is transmitted directly from dog to dog, across major histocompatibility complex (MHC) barriers and also through damaged mucosal surfaces mediated by the viable tumor cells during mating (Igor *et al.*, 2012) treatment include surgical excision, chemotherapy, radiotherapy, immunotherapy, use of electrocautery in surgery proves to have higher rate of success.

Vincristine is a salt of an alkaloid from common flowering herb (vinca rosa linna) (Solution PF) exact mode of action is still under investigation but some researchers show that it inhibits microtubule formation in mitotic spindle resulting in arrest of mitotic division at metaphase stage. vincristine inhibits spermatogenesis either temporarily or permanently (Science, 2015). It can also cause myelosuppression, GI effects, leucopenia, and vomiting. A complete CBC count is needed prior to every administration of vincristine. Local lesions can occur if there is extravasation of drug during iv administration. (Gilbar and Carrington, 2006).

Effects of vincristine treatment on spermatogenesis- Cytotoxic drug like Vincristine can affect spermatogenesis temporarily or permanently. Drug induced spermatogenesis may not return to normal for one or more spermatogenic cycles. Little information is available on the long term use of vincristine on male dog fertility. In such dogs semen quality does exhibit a transient, short lived deterioration during vincristine treatment (Gobello and Corroda, 2002) (Saratsiset *al.*, 2000).

Conclusion

Canine transmissible venereal tumor is the most common neoplasia of the external genitalia diagnosed based on clinical symptoms, physical and cytological examination and can be treated by using vincristine for 4 weeks. To avoid this tumor it necessary to examine male and female dog before mating and avoid mating with stray dogs. And by introducing dog licensing laws, controlling the number of infected, owner less dogs roaming wild, will control the incidence of the disease (Gurel *et al.*, 2002).

Conflict of interest: Authors have no conflict of interest in this study.

Author's contribution: Manjusha Patil and Pankaj Hase: Attended the clinical case and carried out the treatment protocol necessary for the therapeutic treatment of TVT, Kshitij Kodulkar conducted Data analysis and Pravin Rathod conducted cytological examination.

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Fig.1 Canine transmissible venereal tumor in female affecting vagina



Fig.2 Giemsa stained section of the Canine transmissible venereal tumor showing cytoplasmic vacuoles in 100X in microscopic examination by Impression smear method.

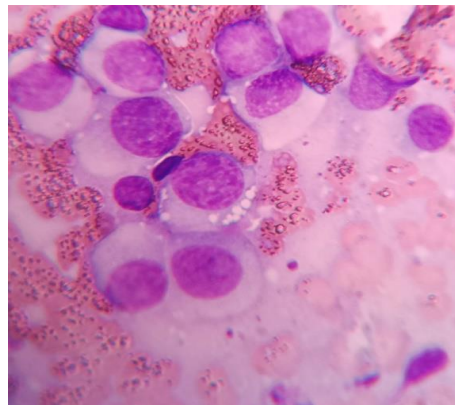


Fig.3 The size of tumorous mass was reduced after the forth session of chemotherapy.

