



ISSN: 2456-2912

VET 2023; 8(5): 467-469

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www.veterinarypaper.com

Received: 19-07-2023

Accepted: 26-08-2023

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Therapeutic management of canine transmissible venereal tumor associated Phimosis in a dog

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Abstract

Canine Transmissible Venereal Tumor is the most frequently occurring form of tumor mainly in stray dogs due to the high population, close contact and uncontrolled sexual behavior. A male non-descript stray dog rescued by a dog rescuer presented to the Palakkad Pet Clinic, Palakkad with the history of swollen penis and bleeding from preputial orifice. Physical examination revealed genital swelling with subcutaneous nodules in the prepuce and phimosis of penis. A smear was prepared from the lesions and with the help of microscopic examination diagnosed the condition as genital form of Transmissible Venereal Tumor. The animal was treated with Vincristine sulfate at a dose rate of 0.025 mg/Kg body weight intravenously along with supportive therapy weekly for 4 weeks. The dog was uneventfully recovered after four weeks.

Keywords: Transmissible Venereal Tumor (TVT), Phimosis, Chemotherapy, Vincristine sulfate

1. Introduction

Transmissible Venereal Tumor (TVT) is a contagious benign reticulo-endothelial tumor of canines that generally transmits horizontally and mainly affects the external genitalia, occasionally the internal genitalia and also affects the extra-genital regions such as the skin, nasal cavity, conjunctiva of eye, buccal and anal mucosa ^[1, 2]. Genital form of TVT transmits by coitus whereas extra genital form transmits by contact, licking and sniffing of the tumor. TVT is also known as Sticker's sarcoma, venereal granuloma, infectious sarcoma and transmissible lymphosarcoma usually affects both male and female dogs which are young and sexually active with an age group of 2-5 years and mainly occurs in stray dogs due to the uncontrolled breeding activity or in dogs that are in close contact with each other ^[3, 5]. The main mode of transmission of the tumor is by exfoliation and transplantation of the neoplastic cells during the time of coitus, licking or sniffing of the affected genitalia and the transmission is favored by the loss of mucosal integrity ^[6]. The growth of TVTs are generally slow and unpredictable for years or may be invasive hence gradually becomes malignant and rarely metastases ^[7, 8]. Definitive diagnosis is based on physical examination and cytological findings. Cytology is more reliable as there are typical changes in the TVT exfoliated cells obtained by impression smear, swabs or by fine needle aspiration ^[9]. Management of TVT is not easy, among all the therapeutic management procedures, chemotherapy is considered as the most effective with Vincristine sulfate being most frequently used irrespective of size, location duration and metastasis ^[10, 11]. In the present case, TVT associated phimosis in a non-descript dog was therapeutically managed with Vincristine sulfate.

2. Case History and Observation

A male, non-descript rescued dog weighing 18 Kg body weight is presented to Palakkad Pet Clinic, Palakkad with a history of swollen penis, difficulty in urination and passing of blood from the preputial orifice. Physical examination revealed genital swelling in the penis and subcutaneous nodules in the preputial mucosa that results in phimosis, hemorrhagic discharge and dysuria (Fig.1). A smear was prepared from the genital swelling using Field stain and under microscopic examination, characteristic TVT like cells with round to oval nucleus; abundant cytoplasm and clear characteristic cytoplasmic vacuoles could be observed (Fig. 2).

Based on history, clinical symptoms and microscopic examination the condition was diagnosed as canine transmissible venereal tumor associated with phimosis.

3. Treatment and Discussion

Chemotherapy was initiated with intravenous administration of vincristine sulphate at a dose rate of 0.025mg/Kg body weight and pantoprazole at a dose rate of 1mg/Kg body weight and the treatment was repeated once in a week for 4 weeks. Gradual regression of the genital swelling was evident weekly and the animal was uneventfully recovered after 4 weeks of chemotherapy (Fig 3.)

TVT is considered as the most frequent form of tumor in dogs ranging from 23-43% of total form of tumors reported in dogs [12]. The incidence of TVT is high due to the large stray dog population and uncontrolled sexual behavior. In the present case the condition is seen in a stray dog rescued by a dog rescuer in Palakkad district of Kerala. Generally in TVTs,

multiple nodules fused together to form large cauliflower like hemorrhagic masses which penetrate deep in to the mucosa as multi lobular subcutaneous lesions and normally ulcerates and it also bleeds easily [13]. The incidence of paraphimosis due to TVT is 0.8% where as phimosis due to TVT is very rare [14, 15]. Physical examination and cytological findings has been used to differentially diagnose the condition as cytology is considered as the most accurate method for diagnosis of TVT [16]. TVT can be managed by several methods such as chemotherapy, surgery, biotherapy, immunotherapy and radiation therapy but it is not very easy [17]. The animal was treated with Vincristine chemotherapy as it is considered as the most effective therapy for TVT [18] and resulted in complete remission of TVT with uneventful recovery. In tropical urban cities it is essential to develop a management strategy for animal birth control to reduce the stray dog population and also proper therapeutic management procedures to reduce the incidence of TVT.



Fig 1: TVT associated Phimosis

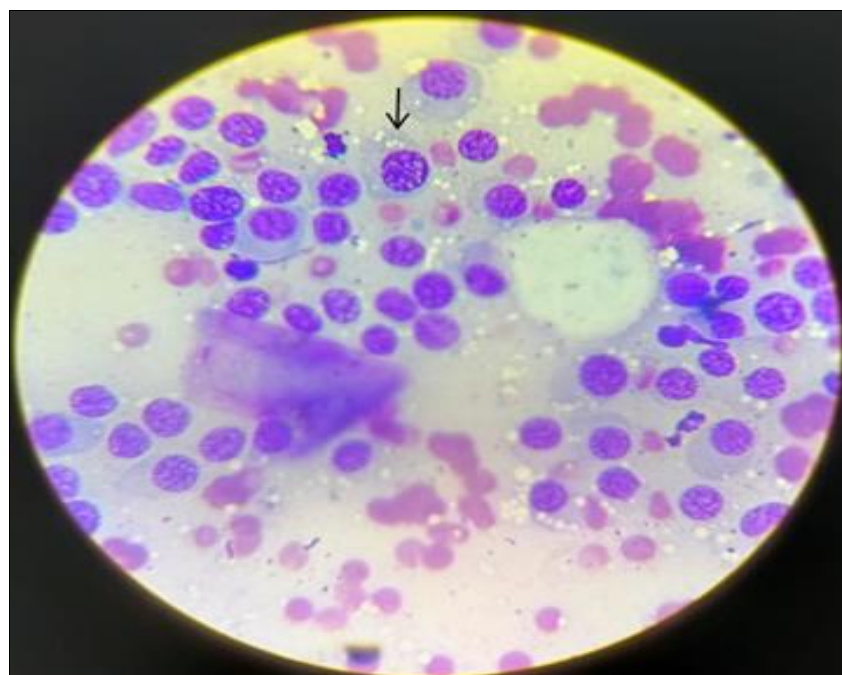


Fig 2: Cytology of Transmissible venereal Tumor cells (Field stain-10X)



Fig 3: Gradual regression of the genital swelling and complete recovery after 4 weeks

4. Conclusion

TVT is considered as the most prevalent tumor which affects the external genitalia of dogs. The etiology of the condition is cell transplant from the affected dogs during close contact. Most of the cases will be presented with hemorrhagic discharge as in the present case. Physical examination and cytological findings are the key to diagnosis. In this case the disease is therapeutically managed with weekly administration of vincristine sulphate at dose rate of 0.025 mg/Kg body weight once in a week for four weeks and the animal recovered uneventfully.

5. Acknowledgments

The authors are greatly acknowledged to staffs of Palakkad Pet Hospital, Kerala.

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