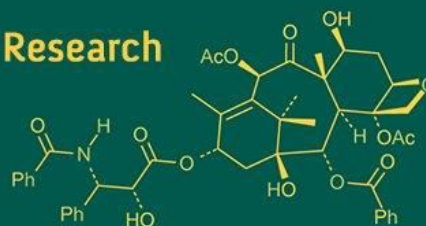


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Cytological diagnosis and treatment of transmissible venereal tumour in a non descript dog: A case report

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Abstract

A one year old non descript breed dog was presented at New Cornerstone Multispeciality clinic, Choolai, Chennai at weight of 21 kg body weight for diagnosis and treatment with a history of bleeding from the prepuce and presence of growth on the penile region. Physical examination of the affected dog showed numerous cauliflower like growths around the bulbus glandis of the penis. Haematological examination revealed mild leukocytosis accompanied by mild neutrophilia and mild eosinophilia. Cytological examination of impression smears taken from the mass revealed the presence of numerous discrete round cells with characteristic cytoplasmic vacuolations, suggestive of transmissible venereal tumour. Based on the laboratory findings, the affected dog was treated with vincristine sulphate at the dose rate of 0.5mg/m² body surface area. along with multivitamin syrup. The treated dog showed marked regression in growth after three weeks of treatment. And fourth week completely recovered, the present study reports an incidence of TVT confirmed on cytological examination of nodules present on the penile region of a one year old non descript breed dog. at New Cornerstone Multispeciality clinic, Choolai, Chennai, Chennai

Keywords: Cytology, non descript breed dog, TVT, vincristine

Introduction

Canine transmissible venereal tumor also known as Sticker's sarcoma is a highly contagious venereal tumor of mesenchymal origin affecting dogs and other canine species including foxes, coyotes and wolves. TVT has been reported in dogs since many decades worldwide and it is mostly recorded in sexually active free-roaming dogs in tropical and subtropical regions. Its incidence is more common in dogs belonging to the age group of 1-5 years. Venereal transmission is the most common route of transmission but transmission also occurs through licking, biting, and sniffing the affected areas [1, 2].

The clinical findings recorded in dogs affected with TVT include presence of a solitary or multiple cauliflower-like growths with the size measuring 5mm to more than 10 cm in diameter. Though these lesions are mostly restricted to the external genitalia, they are also seen on the extragenital areas namely skin, nostrils, oral cavity, eyeball, eyelids and anus. The other clinical findings are oozing of blood from the affected area, serosanguineous secretions with intense odor, deformity, ulceration, and possibly areas of necrosis. Usually, the tumor does not metastasize to distant organs except in young and immune incompetent animals. However, in some cases, metastases can occur to the skin, inguinal lymph nodes, liver, kidneys, spleen, intestine, heart, brain, lungs, and other organs. Diagnosis is usually made based on the clinical, cytological and histological findings [3, 4]. Of various therapeutic measures adopted namely complete surgical excision of mass, radiotherapy, and chemotherapy, latter has been shown to be the most effective and easily available therapy. Among various chemotherapeutic agents used, Inj, Vincristine sulphate has been found to be highly effective in majority of cases and complete regression of tumour occurs in two to four doses. However if chemotherapy is not effective, radiotherapy has been reported to give successful results [5, 6, 7]. Though numerous reports are available on incidence of TVT in young and adult dogs, its incidence in dogs which are less than one year old is scanty. Hence the present paper reports an incidence of TVT based on cytological examination in a one months old non descript dog presented at New Cornerstone Multispeciality Pet clinic, Choolai,

Chennai and complete regression of tumor takes 2 to 8 injections in most of the cases and have good prognosis with chemotherapy.

Materials and Methods

A six months old male mongrel dog was presented at New Cornerstone Multispeciality clinic, Cholai, Chennai for diagnosis and treatment with a history of bleeding from the penis and presence of growths on the penile region. A thorough physical examination was carried out on ailing animal and blood samples were collected in vacutainers containing EDTA as anticoagulant for haematological studies. In addition, impression smears were prepared from the mass, air dried, and stained with Leishman and Giemsa cocktail stain as described by Garbyal *et al.* (2006) for cytological examination. Based on the laboratory findings, the affected dog was treated intravenously with vincristine sulphate at the dose rate of $0.5\text{mg}/\text{m}^2$ body surface area (fig 3). at weekly intervals for four weeks. In addition, multivitamin syrup (Verol syrup®) and liver tonic (H-liv syrup®) were prescribed to administer orally twice daily for four weeks.

Results

Physical examination of the affected animal revealed presence of pinkish multiple cauliflower like growths which were friable with the size measuring 5 mm to 2 cm in diameter around the bulbous glandis of the penis (Fig.1). Haematological examination revealed mild leukocytosis accompanied by mild neutrophilia and mild eosinophilia (Table.1-3). Cytological examination of impression smears were suggestive of transmissible venereal tumour which revealed numerous discrete round cells containing moderate amount of pale bluish granular cytoplasm with distinct borders. The cytoplasm of few cells showed characteristic punched out vacuolations. The nuclei which were coarse and round to oval in shape were placed either at centre or slightly at the periphery of the cells. The treated dog showed marked regression in growths after four weeks of treatment. (fig 4).

Discussion

The present clinical findings which revealed multiple cauliflower like friable growths observed on the penile region of a non descript dog affected with TVT were in accordance with that of previous workers [8, 9] who also reported similar findings in a three year old non descript dog and in three German Shepherd dogs affected with TVT [10]. A mild leukocytosis accompanied by mild neutrophilia and eosinophilia were noticed during the present study. However, no abnormal findings in haematological parameters were observed in a three year old male mongrel dog affected with TVT [9].

The cytological findings of numerous discrete round cells with moderate amount of pale cytoplasm with vacuolations and eccentrically placed nucleus recorded during the present study were in accordance with that of previous workers [8] who also noticed similar observations in an adult non-descript dog affected with TVT. Similar findings were also reported in a 4 years old intact Pit Bull dog [11] and in a three year old male mongrel dog [9] affected with TVT. The presence of characteristic multiple cytoplasmic vacuoles with large foamy nuclei are the common features of TVT cells on cytological examination [12] as noticed in the present study.

During the present study, administration of vincristine sulphate at the dose rate of $0.5\text{mg}/\text{m}^2$ body surface area intravenously at weekly intervals resulted in marked regression of tumour after two weeks of treatment. A complete regression of growth after four weeks of treatment with vincristine was recorded in three German Shepherd dogs affected with TVT [10]. However, complete regression of tumour was noticed only after six weeks of treatment with vincristine in a two years old male Doberman dog [13] and after five weeks of treatment in a 4 years old Pit Bull dog [9] affected with TVT. Thus, the present study confirms a case of TVT in a six months old mongrel dog based on cytological diagnosis and its successful treatment with vincristine.



Fig 1: Non Descript Dog-TVT showing cauliflower like growths at the base of the penis after one week of treatment with vincristine.

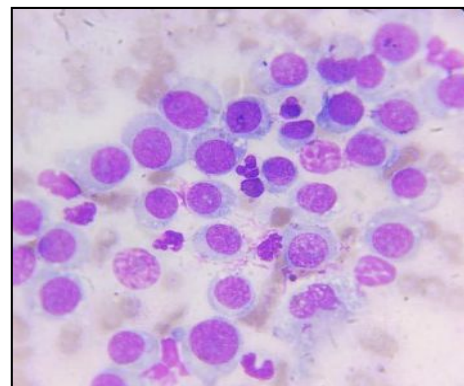


Fig 2: Impression smear of a mongrel dog-TVT showing numerous round cells containing oval to round nuclei with punched out vacuolations in few cells X100 L&G stain



Fig 3: Vincristine sulphate



Fig 4: Second weak-TVT showing cauliflower like growths at the base of the penis

Table 1: Erythrogram

Parameters	Results
Haemoglobin	15.70 g/dl
Packed cell volume	50.00%
Red blood cells	$7.50 \times 10^6/\text{mcL}$
MCV	62.50 fl
MCHC	31.40 mg/dl
MCHC	23 pg

Table 2: Leukogram

Parameters	Results
Total leukocyte count	$16.90 \times 10^3/\text{mcL}$
Differential leukocyte count	
Neutrophils	76%
Lymphocytes	18%
Monocytes	05%
Eosinophils	15%
Absolute leukocyte count	
Neutrophils	$12.501 \times 10^3/\text{mcL}$
Lymphocytes	$2.87 \times 10^3/\text{mcL}$
Monocytes	$0.84 \times 10^3/\text{mcL}$
Eosinophils	$2.53 \times 10^3/\text{mcL}$

Table 3: Thrombogram

Parameters	Results
Thrombocyte count	$3.88 \times 10^3/\text{mcL}$

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