

# TRANSMISSIBLE VENEREAL TUMOR IN A CASTRATED NON DESCRIPT DOG: A CASE REPORT

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## Introduction

Transmissible venereal tumor (TVT) has a worldwide distribution and is most common in tropical and subtropical urban areas containing large population of free/roaming dogs (Rogers, 1997). It arises from an allogenic cellular transplant, not neoplastically transformed canine cells (Richardson, 1981). Cells of TVT contain  $59 \pm 5$  chromosomes, and surface characteristic antigen suggests that all TVT's arise from a single, original canine tumour (Rogers *et al.*, 1998).

The primary mode of transmission of TVT is exfoliation and transplantation of neoplastic cells onto damaged penile mucosa during coitus (Richardson, 1981). Therefore, TVT in free roaming male dogs is expected in sexually active mature dogs and is most unlikely in castrated animals. The purpose of this paper is to describe an unusual clinical case of a dog with primary TVT in the castrated male dog that was treated successfully with vincristine sulphate.

age was referred to department of Veterinary Gynaecology and Obstetrics, Veterinary College, Bangalore with a complaint of bleeding from the prepuce. The person who had presented the male dog stated that it was an adopted stray dog in his locality and had observed that the animal was constantly licking its external genitalia for the past 15 to 30 days.

On clinical examination, the dog was apparently healthy with normal respiratory rate, pulse rate and temperature. Physical examination revealed absence of both testicles and the left ear was notched (Fig.2) suggestive that the animal had been castrated. However the owner was unaware that the dog had been neutered. On further examination, the preputial orifice was smeared with blood and on further handling of the penis through the prepuce, blood started dribbling from the preputial orifice. On complete exteriorization of the penis, multiple friable, cauliflower like, multilobular growth greater than 10 mm in diameter were observed near bulbous glandis (Fig. 1).

## Case Report

A non descript male dog of unknown



Fig: 01, Cauliflower like



Fig: 02. Ear Notch

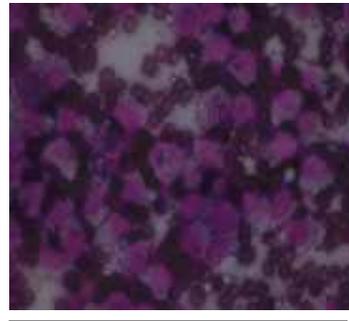


Fig: 03, TVT cells

A presumptive diagnosis of genital TVT was made on the basis of visual inspection of penile and preputial mucosa and morphological feature of the neoplastic mass. A definitive diagnosis was accomplished by cytological examination of the exfoliated neoplastic cells. For this purpose, an impression smear was made on to a clean glass slide, dried, fixed with methanol and stained with Giemsa stain. The cytological examination revealed typically round cells, with large nucleolus to cytoplasmic ratio, prominent chromatin clumping, large nucleoli and plenty of vacuoles in the cytoplasm confirming the condition as a typical TVT (Fig. 3). The dog was treated with vincristine at a dose of 0.025mg / kg body weight intravenously and advised to be presented again for treatment at weekly intervals for 4-5 weeks. By third week of treatment, the bleeding from the prepuce completely stopped and no neoplastic mass was visible on the penile mucous membrane. However, the treatment was continued for two more occasions.

#### **Discussion:**

TVT is the most common penile neoplasm in the dog. It is believed that exfoliation and transplantation of neoplastic cells onto damaged penile mucosa during coitus is the primary mode of transmission although transplantation of TVT cells onto nasal or oral mucous membrane also may occur due to the licking behavior of the dog (Richardson, 1981). Of 19 cases of canine TVT reported in one study, 53 per cent were present only on the external genitalia, with 32 per cent on the penis and 21 per cent on the prepuce (Hamir, 1985). Five dogs have been described with oronasal TVT only (Amber and Adeyanju, 1986).

In the male dog that was presented with the complaint of preputial bleeding, a careful physical examination did not reveal any evidence of a visible TVT on extra genital areas of the body such as the skin,

conjunctiva, oral or nasal mucous membrane. Since, the TVT was observed only on the penile mucous membrane, the male dog that was presented must have mated with another female dog which had already been suffering from TVT. It has been stated that TVTs grow rapidly after transplantation (Richardson,1981). After experimental transmission of TVT cells on to genital mucosa, tumors were visible grossly in some male dogs as early as 15 days, with visible tumor growths in 37 per cent of dogs by 30 days and 88.7 per cent of dogs by 60 days after the transfer (Karlson and Mann, 1952). Further, dogs with TVT were found to exhibit intermittent to persistent serosanguinous to hemorrhagic discharge from the prepuce (Hoque *et al.*, 1985). Other clinical signs of genital TVT like preputial swelling, abnormal odour and excessive licking of the genitalia has been recorded in the present study in acceptance with the observation of McAfee and McAfee (1977).

Although it is common to find TVT in sexually active intact male dogs, the finding of TVT in a castrated male dog is very rare and unusual. However, in the present case, the person who had presented the animal was unaware that the animal had been castrated. It is possible that the male dog presented had an intact testis and was sexually active and had mated with a TVT affected female in the recent past. Subsequently, the animal might have been castrated and as castration has no effect on already implanted TVT cells, the TVT continued to develop and established. Further, a second possibility is that the animal had been castrated long time back, retained its mating behavior and had mated with a TVT affected dog in recent past, this is supported by the observation by Johnston (2001) that a male dog may continue to retain its mating behavior, which is a learned experience in spite of castration and continue to attempt mating. Although intromission may occur in a castrated male dog, the erection is incomplete

and locking of the bulbus glandis fails to occur.

The process of intromission may be sufficient for the castrated male dog to pick up TVT cells. In the present case, Vincristine at weekly doses of 0.025 mg/kg was administered and the treatment was continued up to four weeks

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