

# RETROSPECTIVE ANALYSIS OF CANINE TRANSMISSIBLE VENEREAL TUMOUR CASES IN TIRUNELVELI REGION OF TAMIL NADU

Chhavi Gupta<sup>1</sup>, Satheshkumar, A. Ganesan, V. Kumar and R. Ramprabhu

<sup>1</sup>Assistant Professor, Department of T.V.C.C., Veterinary College and Research Institute, TANUVAS, Tirunelveli- 627358, Tamilnadu. India.

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A retrospective analysis was conducted to study the case occurrence of canine transmissible venereal tumours in Tirunelveli region of Tamilnadu during January 2015 to December 2017. A total of 151 cases of transmissible venereal tumour were reviewed. The incidence was more in female (81.5%) than male dogs (18.5%) and in animals in the age group of 2-6 years (80.1%). The breed-wise analysis revealed that the incidence was more common in Chippiparai dogs among the native breeds and Labrador and Spitz dogs among the exotic breeds. The incidence rate in Non-descript dogs (18.5 per cent). Higher incidence of TVT in native breeds of this region could be attributed to habitually yard-escaping nature of due to their guarding and hunting behavior. Chemotherapy with vincristine is considered to be the most effective therapy for canine TVT.

**Keywords:** Transmissible Venereal Tumours, Dogs, Tirunelveli region.

Tumour is one of the major syndrome contributing to 27 per cent of canine mortality (Adams, *et al.*, 2010). Among all the tumour conditions, the transmissible venereal tumour (TVT) is the most common neoplastic syndrome affecting either sex in dogs. Canine TVT, also called transmissible venereal sarcoma, Sticker's sarcoma, venereal granuloma and infectious sarcoma, is a contagious venereal tumour of dogs transmitted from one dog to another during mating when abraded mucosa is exposed to the tumour of an infected dog (Otter, *et al.*, 2015). TVTs are more commonly observed in tropical than subtropical region in young and sexually active dogs with 2-5 years of age (Das and Das, 2000; Murugan *et al.*, 2016). Chaudhary and Rao (1982) reported 23 to 43 per cent incidence of canine TVT primarily in India. The factor influencing the occurrence of TVT in dog is not clearly understood. This paper describes the prevalence and its related factors associated with the occurrence of TVT in Tirunelveli region of Tamil Nadu.

## Materials and Methods

A retrospective analysis was conducted to study the incidence and nature of TVT in dogs from January 2015 to December 2017. Clinical records in the small animal Gynaecology unit of Teaching

Veterinary Clinical Complex, Veterinary College and Research Institute, Tirunelveli pertaining to the cases presented with the history of growth lesions, clinical signs and also the histopathological examination suggestive of tumour were included in this study. A total of 151 cases were recorded during this period of study. The distribution of TVT cases based on age (< 2 years, 2-4 years, 4-6 years and > 6 years), sex (male or female) and breed (exotic, native and non-descriptive) of the dogs was recorded. The percentage of incidence in each category was arrived from the data obtained from records. The incidence rate was analysed as per standard procedures.

## Results and Discussion

Among the 151 cases of TVT encountered during the period of study, 123 (81.5%) were female dogs and 28 (18.5%) were male dogs. It was found that the females were infected more often than males. It might be due to the fact that one infected male often mates with numerous females, in free range or stray group and also in kennels. Analysis of age wise incidence of the condition (Table-1) revealed that around 80.0 per cent of affected dogs were in the age group of 2-6 years with the majority of cases (61.6%) in the age group of 2-4 years. Ganguly *et al.* (2013) also reported a similar incidence

during the reproductive age of 2-8 years and Andari *et al.* (2016) also correlated to the incidence to the sexually active period of life.

On perusal of the data pertaining to breed wise distribution of the incidence (Table 2) it was found that native breeds (61.6%) were more infected than the exotic (19.9%) or non-descriptive (18.5%) breeds. Among the native breeds Chippiparai dogs were found to be more affected than other breeds, while Labrador and Spitz breeds were mostly affected among the exotic breeds. The observations are in concurrence with the findings of Simon and Kumar (2010). On the basis of social behaviour, the high-risk groups include the habitually yard-escaping dogs while the condition is rare in well-supervised intensively reared companion animals. Hence the higher incidence of TVT in native breeds of this region, which are habitually yard-escaping dogs due to their guarding and hunting behavior, is justifiable. The tumour is cauliflower-like, pedunculated, nodular, papillary or multilobulated. It ranges from a small nodule to a large mass and the surface was often inflamed and haemorrhagic. (Fig.1). In female dogs, the neoplastic lesions are usually located at vestibule and less often at the vagina or vulvar lips. In male dogs,

neoplastic lesions were more often located on the bulbus glandis and less often on pars longa glandis or the tip of the glans penis. The diagnosis of TVT was pathologically confirmed in all animals by the presence of identical large, vacuolated tumor cells. Several treatments including surgical excision, radiotherapy, immunotherapy and chemotherapy have been used to treat the canine transmissible venereal tumour but chemotherapy has been shown to be the most effective and easily available practical therapy as also mentioned by Otter *et al.*, (2015). The chemotherapeutic agents such as vincristine, vinblastine, doxorubicin and cyclophosphamide have been used.

TVT represents the oldest known contagious syndrome in dogs. The disease is difficult to control owing to the role of stray and wild dogs as reservoirs of infection. Proper examination of animals prior to mating to eliminate animals with patent infection from the breeding population and strict measures against mingling with stray animals will control the disease. Sustained animal birth control programme of stray dogs with chemotherapy of the affected dogs shall definitely decrease TVT cases to a great extent.



**Fig.1: Canine transmissible venereal tumour lesions in female and male dogs**

**Table - 1: Age wise incidence of TVT**

Age	< 2 years	2 – 4 years	4 – 6 years	> 6 years
No. of animals	17 (11.3 %)	93 (61.6%)	28 (18.5%)	13 (8.6%)

**Table – 2: Breed wise incidence of TVT**

Breed	Native breed	Exotic breed	Non-descriptive
No. of animals	93 (61.6%)	30 (19.9%)	28 (18.5%)

**BREED WISE DISTRIBUTION**

Native breed				Exotic breed				
Chippiparai	Kombai	Kanni	Rajapala- yam	Labarador	Spitz	German- sheperd	Doberman	Dalmatian
83 (55.0%)	3 (2.0%)	6 (4.0%)	1 (0.1%)	13 (8.6%)	12 (7.9%)	3 (2.0%)	1 (0.1%)	1 (0.1%)

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