

HISTOPATHOLOGICAL CHARACTERIZATION OF TRANSMISSIBLE VENEREAL TUMOR IN A DOG: A CASE REPORT

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Transmissible venereal tumor is an infectious tumor mainly affecting the external and internal genitalia of dogs. In the present study, rottweiler female dog, aged thirteen years was brought to Department of Veterinary Pathology, Nagpur Veterinary College. The dog showed firm, red, haemorrhagic, pedunculated mass hanging from vulva. Fine needle aspiration cytology (FNAC) of tissue was performed. Representative tissue samples were collected in 10% neutral buffered formalin for histopathology. Histopathology reports revealed, cells were situated in an arborizing fibrovascular network. A distinct single, centrally placed nucleolus alongwith dispersed chromatin was noticed. Infiltration of lymphocytes, plasma cells and few macrophages was present. Based on histopathology reports, the tumor mass was confirmed to be transmissible venereal tumor (TVT).

Keywords: Transmissible venereal tumor, Histopathology, Vincristine sulfate.

Transmissible venereal tumor (TVT), also known as infectious sarcoma, venereal granuloma, transmissible lymphosarcoma or sticker tumor, is a benign reticulo endothelial tumor of the dog that mainly affects the external genitalia and occasionally the internal genitalia as reported by Goldschmidt *et al.* (2002). As it is usually transmitted during coitus it mainly occurs in young, sexually mature animals as reported by Rogers *et al.* (1997). Initial lesions are superficial, pink to red in coloration. Eventually, multiple nodules fuse together forming larger, haemorrhagic cauliflower-like, friable masses. The masses can also invade deeper into the mucosa as multilobular lesions. Transmissible venereal tumor cells are found to contain an abnormal number of chromosomes in the range of 57 to 64, in contrast to the normal 78 of the species. The potential of immunologic response of the host has a great impact in the expansion of such tumors with an increase in severity seen in immunologically compromised animals.

Materials & Methods

Tissue samples suspected for transmissible venereal tumor was collected from a thirteen year old female rottweiler dog which came for treatment at Teaching Veterinary Clinical Complex (TVCC),

Nagpur Veterinary College, Nagpur. The animal was screened for clinical history and was regularly vaccinated and dewormed. It had a history of whelping six month back. On physical examination tumor mass was seen protruding through vulva.

Fine needle aspiration cytology (FNAC) was taken of the tumor mass. Also, tissue samples were collected from tumor mass in 10% neutral buffered formalin for histopathology.

On gross evaluation, firm, reddish, haemorrhagic, pedunculated and cauliflower like nodules, 2.5 x 1.5 cm in diameter were observed on vulva. The consistency of mass was soft.

Results & Discussion

On cytological examination, round to oval cells with a thin eosinophilic cytoplasm were observed. Nuclei were round to oval in shape and centrally placed. Also, distinct punctate vacuoles were observed in cytoplasm. The nucleoli were basophilic and number varied from one to two. The nuclear to cytoplasmic ratio was large.

Histopathologically, a sheet of round individual cells containing round vesicular nuclei, the borders of which were not to be easily differentiated were observed. The cells were arranged in an arborizing fibrovascular network. A distinct single, centrally placed

nucleolus alongwith dispersed chromatin was observed. Infiltration of lymphocytes, plasma

cells and few macrophages was present. Few mitotic figures were present (Fig.1) & (Fig.2).

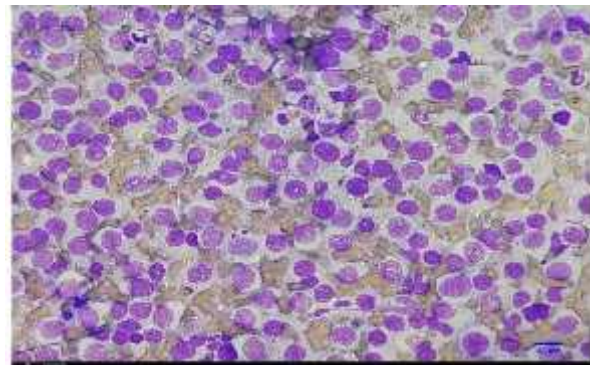
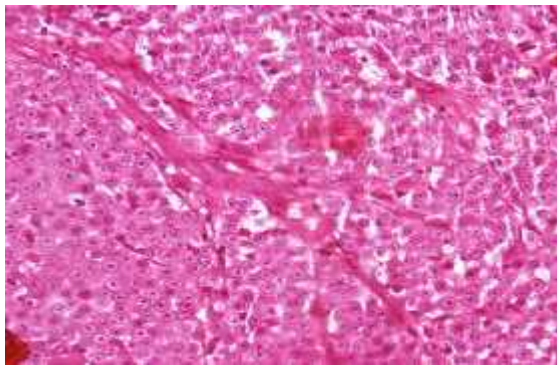


Fig.1- Micro Photograph of TVT tissue showing tumour cells with prominent nuclei and large vacuoles (H&E stain; Magnification 40x)

Fig.2-Clinical pathological analysis of TVT cells in stained impression smears

Based on the histopathological and fine needle aspiration cytology (FNAC) examination, the tumor mass was diagnosed to be transmissible venereal tumor.

The histopathological examination which confirmed the diagnosis of TVT, was in agreement to the previous study which demonstrated the tumor as confluent sheet or rows of tumor cells separated by little fibrous stroma (Ayyappan *et al.*, 1994). Tumor cells were infiltrated by macrophages, lymphocytes, and plasma cells with schirrous reaction characterized by intense fibroblastic proliferation and collagen deposition (Das *et al.*, 1990, Lal Krishna and Gupta, 1990, Chang *et al.*, 1999, Rodrigues *et al.*, 2001, Sales *et al.*, 2012).

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