

Case Report

Progressive Type of Canine Transmissible Venereal Tumor (CTVT) in a Male Stray Dog: a Case Report

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ABSTRACT

An adult male stray dog of non descriptive breed was presented with cauliflower like growth in the penile region. Hospital history revealed that the same dog underwent two consecutive surgical interventions for removal of the growth but recurrence occurred repeatedly. Therefore, duty doctors of the hospital decided to perform euthanasia with the consent of local municipal authority. Fine needle aspiration biopsy (FNAB) and histo-pathological examination was performed. Under light microscope, sheets of numerous neoplastic round cells possessing characteristic features and hyperchromatic nuclei were found in tumor mass. But, no evidence of metastasis was observed in surrounding viscera and lymphoid tissues. However, depending on the histological evidence of the tumor mass the case was confirmed as progressive phase of CTVT.

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The canine transmissible venereal tumor (CTVT) is a benign reticuloendothelial neoplasm producing cauliflower like, firm to friable nodular mass on the external genitalia of either male or female dogs and it occur at the same frequencies in both sexes (Rogers, 1997). It is known to be the most frequent tumor in ownerless stray dog population that usually copulate freely (MacEwen, 2001). The tumor may be single or multiple, nodular or pedunculated, ranging from a small nodule less than a centimeter to over ten centimeter (Deborah, 1995). CTVT can be diagnosed histopathologically by round, ovular polyhedral cells with indistinct poor cytoplasmic boundaries. Characteristic multiple cytoplasmic vacuoles and large foamy nuclei are

the common cytological features of such tumor cells (Tasqueti et al, 1999).

An adult indigenous (non descriptive breed) male stray dog of 30 kg body weight was brought to SAQ Teaching Veterinary Hospital, Chittagong Veterinary and Animal Sciences University (CVASU) having prolonged history of cauliflower like growth and blood stained discharges from the penile region (Figure 1A, 1B). During physical examination, the penile sheath of the dog was found obscure and swollen. Besides, physically the blood stained flesh was visible with bad odor from a distance.

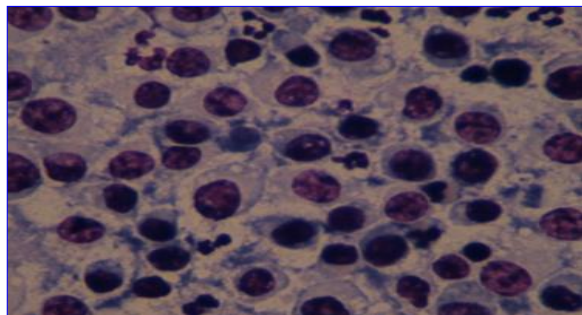


A

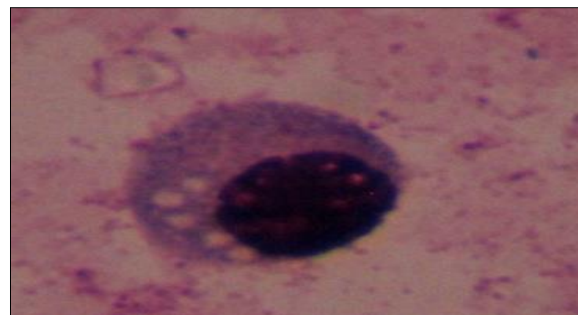


B

Figure 1: Large cauliflower-like growth, along with bloody discharge from penile region



A



B

Figure 2: A. Numerous round cells with coarse eccentric nuclei and pale finely granular cytoplasm with mitotic figures in Giemsa stained smear (40X); B: Multiple sharply defined vacuoles seen within the round cells cytoplasm (100X)



Figure 3: Multiple round to oval, encapsulated nodular mass observed at necropsy

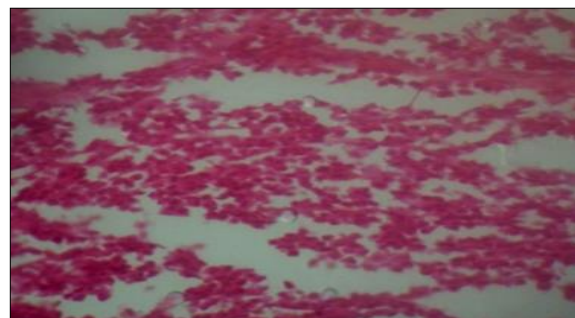


Figure 4: Confluent sheets of round cells arranged in grapes like or strings like appearance in loose stroma

The local municipal authority and duty doctors of the hospital decided to perform euthanasia. Detailed clinical and histopathological examination of the tumor mass was performed. Cardinal parameters revealed rectal temperature 38.5⁰ C, respiratory rate 20 breaths/min and heart & pulse rate 102 beats/min, all these parameters were within the normal range. The observed tumor mass was examined for cytology using fine needle aspiration biopsy following the procedures described in Cowell et al. (2008). It was decided after complete clinical and histopathological findings that euthanasia may be performed. Following complete sedation of animal, the 30ml of saturated MgSO₄ was injected intracardially for performing euthanasia. The dog was necropsied at the pathology laboratory of Department of Pathology and Parasitology, CVASU at the earliest possible time of euthanasia. Necropsy was performed as per standard method described in Coles (1986). At necropsy, gross tissue changes were observed carefully and recorded. For histopathological study tissue samples were fixed in 10% buffered formalin and dehydrated in graded 100% ethanol and embedded in paraffin wax. Fixed tissues were sectioned at 5 μm thickness and stained with hematoxylin and eosin as per standard method (Luna, 1968) for microscopic examination.

In this study aspiration biopsy of the tumor mass exhibited numerous round cells with moderate amount of pale finely granular cytoplasm with multiple sharply defined vacuoles where nuclei of the cells seem slightly eccentric and coarse with mitotic figures (Figure 2A, 2B) these findings are with complete agreement as described by Tasqueti et al. (1999). At necropsy, multiple rounds to oval, firm nodular mass,

ranging from 5 cm to 9 cm diameter (Figure 3) were observed throughout the subcutis, mainly at the preputial mucosa and cranial to the glans penis. There was no gross changes observed anywhere other than penile region in the infected dog. From the excised tumor mass, histopathological examination revealed sheets of large round cells resembling lymphoblast (Figure 4). However, the nuclei of the cells are larger than those of lymphoid cells. The round or slightly indented nuclei stained more hyperchromatically than those of lymphoblasts and showed pronounced variation in size. Besides, numerous mitotic figures are seen in the neoplastic cells. These histopathological findings are typical of a progressive type transmissible venereal tumor and appear in agreement with the findings Santos et al. (2005) and Park et al. (2006).

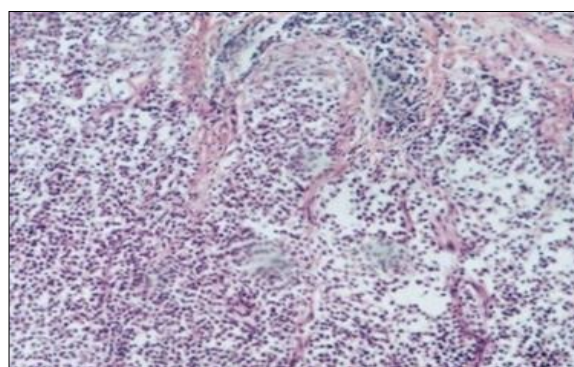


Figure 5: Scanty amount of connective tissue stroma indicate progressive stage of CTVT

Regression is associated with increased numbers of tumor-infiltrating lymphocytes and is characterized by increased apoptotic tumor cells and fibrosis. As suggested by the histopathological features in the present case, there is minimal involvement of tumor infiltrating lymphocytes and high numbers of mitotic figures which designate it as progressive phase of CTVT (Figure 5). Histological features of regional lymphnodes, spleen or viscera of the infected dogs did not show any evidence of metastasis.

In the present case, as the dog was a stray and duty doctors of the hospital with the consent of local municipal authority has decided to perform euthanasia instead of any treatment approaches, no such attempt was taken. But surgery has been extensively used for the treatment of TVT even though recurrence rate is said to be high (Rogers, 1997). The histopathological features of the tumor lesions in present the case confirmed a progressive phase CTVT in penile region without any evidence of metastasis. However, detailed analysis of the origin of these round (tumor) cells types was not determined. Finally, this is possibly the first

case report in regarding progressive type CTVT in a male stray dog at Chittagong, Bangladesh.

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