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Histopathological and cytopathological lesions in transmissible venereal tumor of dog: A case report

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Abstract

A tissue mass from a female dog which was suspected as neoplastic growth was received for diagnosis. Based on the gross and microscopic lesions along with cytopathological examination of the tissue mass, it was diagnosed as transmissible venereal tumor.

Keywords: transmissible venereal tumor, Dog, TVT cells, histopathology, cytopathology

Introduction

Transmissible venereal tumor, also known as sticker tumor, contagious venereal tumor, transmissible venereal sarcoma, venereal granuloma and canine condyloma [1]. TVT is a transplantable tumor with low metastatic rate. [2]. The tumor cells itself act as infectious cancer cells [3]. Due to its unique nature of transmission by sexual contact, the external genitalia of either sex are most commonly affected. Rarely, the tumor may also be transmitted to the nasal or oral cavities, skin, and the rectum by sniffing or licking of the tumor mass and implanting them [4]. This tumor is most commonly seen in sexually active male and female dogs (2-8 years of age). Tumor mass is usually cauliflower like in appearance, friable and red to flesh coloured [5]. It ranges from a small nodule 5 mm. in diameter to a large mass measuring more than 10 cm [6]. Histopathologically, the tumor cells are in compact masses or sheets and sometimes loose in delicate stroma [7]. These cells are usually round and separated into cell islands via thin fibrous tissue [8]. In the present case study, histopathological lesions and cytopathological lesions were described in a transmissible venereal tumor affected female dog.

2. Case history and observation

A female dog of about 3 years aged was presented with clinical history of pain, discomfort, excessive licking of genital area, genital protrusion of a tissue mass with unpleasant odour. Upon external examination, the tissue mass was small cauliflower like appearance which was flesh to red coloured, hemorrhagic in some areas with oozing of small quantity of serosanguinous fluid from the tissue mass (Fig.1).



Fig 1: Transmissible venereal tumor growth protrusion from the external genitalia with hemorrhages and oozing of serosanguinous fluid.

3. Materials and Methods

The tissue mass was surgically excised and small pieces were taken in 10% Formalin for

histopathological examination. These tissue pieces were processed by standard routine paraffin embedding technique and tissue sections of 5 microns were prepared. These tissue sections were stained by standard Hematoxylin and Eosin method [9]. Impression smears were taken from a surgically excised tissue mass, stained by Giemsa staining procedure and microscopic examination was done for cytopathology [10].

4. Results and Discussion

4.1 Microscopic lesions

Upon histopathological examination, round and uniform shaped typical transmissible venereal tumor cells (TVT cells) were arranged in compact masses (Fig. 2) and in some areas, these cells were arranged loosely in the stroma which were separated by thin fibrous tissue (Fig.3).

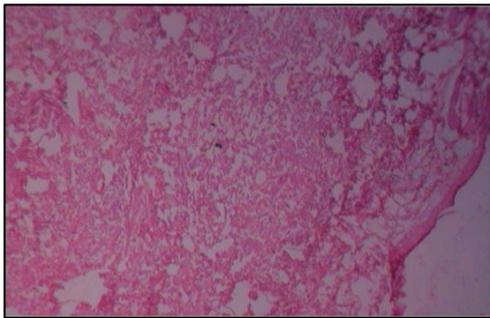


Fig 2: Uniform round neoplastic cells which are arranged in compact masses. H&E, 100x.

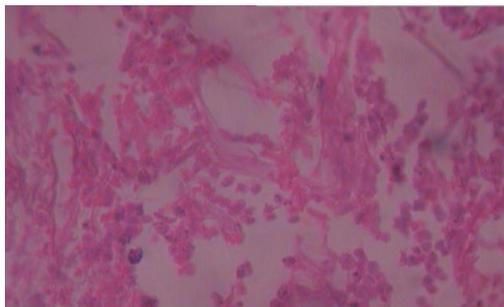


Fig 3: Loosely arranged tumor cells, separated by thin fibrous tissue. H&E, 400x

4.2 Cytopathological examination

By cytopathological examination, the impression smears of the tumor mass revealed characteristic transmissible venereal tumor cells. These neoplastic cells were round, uniform and have a clear cytoplasm with vacuoles at the periphery of the cells (Fig. 4). Increased nuclear to cytoplasmic ratio, hyperchromic nucleus and distinct cytoplasmic borders were noticed in these TVT cells (Fig. 5).

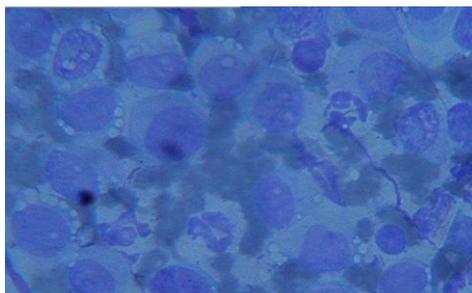


Fig 4: Characteristic Transmissible venereal tumor (TVT) cells which were round, uniform with fine vacuoles at periphery. Giemsa stain, 1000x.

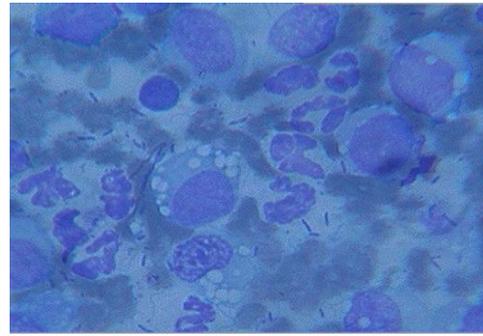


Fig 5: TVT cells with distinct cytoplasmic borders, clear cytoplasm, vacuoles at periphery and increased nuclear to cytoplasmic ratio. Giemsa stain, 1000x.

Conclusion

Based on the gross pathology, histopathological and cytopathological finding of characteristic TVT cells, the tissue mass from a female dog was successfully diagnosed as transmissible venereal tumor.

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