VETERINARY TODAY INTERNATIONAL
ISSN 2583-8288

Transmissible venereal tumor in dog

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DOI:10.5281/VeterinaryToday.19239651

Introduction

Canine transmissible venereal tumour also known as sticker tumour, canine venereal granuloma, transmissible venereal granuloma or transmissible lymphosarcoma is a horizontally transmissible venereal round cell tumours of dogs (Donald, 2002). It is naturally occurring tumour transmitted from animal to animal at the time of coitus that mainly affect the external genitalia of female and male dogs and sometimes occasionally occurring in the internal genitalia as well (Das and Das, 2000). The incidence was highest among young to adult middle-aged dogs. Young to adult middle-aged dogs are more prone to this disease because they are over active between this period and the disease being sexually transmitted condition. Dogs aged between 1-5 years are at the higher risk (Scrapelli, 2008). Transmissible venereal tumour cells contain an abnormal number of chromosomes ranging from 57 to 64 and averaging 59 in contrast to the species typical 78 chromosomes number (Rogers, 1997).

Etiology

The disease was first reported by Russian Veterinarian Novinsky in 1876 when he demonstrated that the tumour could be transplanted from one dog to another dog by infecting them with tumours cells. It is generally accepted that TVT develops from allogenic cellular transplants and the tumor's aberrant cells serve as the transmission vectors (Richardson, 1981). It spreads through the implantation of viable tumor cells in mucous membranes particularly when there is surface abrasion or loss of integrity. The tumor begins to grow 15 to 60 days after implantation. TVTs can either be invasive and eventually turn malignant and spread or they can develop slowly and wildly for years. TVTs are immunogenic tumors and it has been shown that the host's immune system plays a major part in preventing tumor growth and spread (Lombard and Cabanie, 1968; Cohen, 1973).

Clinical findings

TVT is a histiocytic tumour that can be transmitted among dogs and other canidies through coitus, licking, biting and sniffing tumour affected areas (Mac-Ewen, 2001). The location of the tumor in a particular tissue or organ will determine the clinical outcome. Mucosal, membrane based TVTs (gential, oral, or nasal TVTs) are frequently related to hemorrhagic discharge. Due to widespread ulceration of the epithelial surface lining the tumors bleed frequently whereas enlargement of inguinal lymph nodes is frequently observed in male dogs with penile tumors, genital protrusion of tumor tissues depending on the tumor size is most evident in female dogs. The tumor size can vary from 3-12 cm in diameter (Park *et al.,* 2006). Bloody vaginal or preputial discharge, infrequent or ongoing inflammatory skin lesions, genital edema and frequent licking of the genital area are the clinical signs of genital condition (Nak *et al.,* 2005).

Pathology

Gross lesion

Small pink to red nodules with a diameter of 1 to 3 millimeters can be seen after

2 to 3 weeks after transplantation. The first lesions are pedunculated or superficial dermoepidermal. Subsequently, several nodules combine to produce larger, red, hemorrhagic, friable masses that resemble cauliflower. The masses that have a diameter of 5 to 7 cm develop into multilobular subcutaneous lesions with diameters of upto 10 to 15 cm in order to go further into the mucosa. Tumors typically ulcerate and get contaminated as they grow larger and bleed freely (Aprea *et al.,* 1994).

Microscopic lesion

Cytological examination reveals the typical round to slightly polyhedral cells with rather eosinophilic cytoplasm vacoulation and round hyperchromatic nucleus with nucleolus and a moderate number of mitotic figures (Tasqueti *et al.,* 1999).

Diagnosis

Definitive diagnosis is based on physical examination and cytological findings typical of TVT in exfoliated cells obtained by swabs, fine needle aspiration or imprints of the tumours (Richardson, 1981; Aprea, 1994).

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