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Sasikala K

Assistant Professor, Department of Veterinary Clinical Medicine, Veterinary College and Research Institute, Tamil Nadu Veterinary and Animal Sciences University, Tamil Nadu, India

Amaravathi K

Department of Veterinary Pathology, Veterinary College and Research Institute, Tamil Nadu Veterinary and Animal Sciences University, Tamil Nadu, India

Madheswaran R

Department of Veterinary Pathology, Veterinary College and Research Institute, Namakkal, Tamil Nadu Veterinary and Animal Sciences University, Chennai, Tamil Nadu, India

Corresponding Author

Sasikala K

Assistant Professor, Department of Veterinary Clinical Medicine, Veterinary College and Research Institute, Tamil Nadu Veterinary and Animal Sciences University, Tamil Nadu, India

Concomitant occurrence of cutaneous form of transmissible venereal tumour and lymphadenopathy in a mongrel dog

Sasikala K, Amaravathi K and Madheswaran R

Abstract

A 3 year old male mongrel dog was brought to Department of Veterinary Medicine, College of Veterinary Science, Tirupati with the history of bleeding from penis and cutaneous nodular growths all over the body since a month. On clinical examination, cauliflower like growth on the penis, swelling of the preputial region, multiple cutaneous nodular growths all over the body and enlargement of palpable lymph nodes were noticed. Fine needle aspirates from the nodules and lymph nodes and impressions from the penis revealed features of neoplastic cells. Chemotherapy was started with vincristine sulphate @ 0.025 mg/kg b.wt intravenously at weekly interval for 4 weeks along with supportive therapy. Animal recovered uneventfully following chemotherapy.

Keywords: Cutaneous, dog, genital, TVT, vincristine

Introduction

Canine transmissible venereal tumour (TVT) is a naturally-occurring contagious neoplasm of reticuloendothelial origin. It primarily affects the genital mucosa of dog but also been reported in the conjunctiva, oral (Raghunath *et al.*, 2015) [12], nasal (Balagopalan *et al.*, 2016) [3], anal mucosa (Ganguly *et al.*, 2013) [8] and the skin (Ahuja *et al.*, 2017) [2]. TVTs are locally aggressive and rarely metastatic. Metastasis of TVT to regional lymph nodes and viscera are rarely reported (Kokila *et al.*, 2020) [9]. It could be transmitted to mucous membranes during coitus, licking or sniffing by tumor cell implantation (Ahuja *et al.*, 2017) [2].

Materials and Methods

A 3 year old male mongrel dog was reported to Department of Veterinary Medicine, College of Veterinary Science, Tirupati with the history of inappetence, bleeding from penis and cutaneous nodular growths all over the body since a month. On clinical examination, the animal was dull and depressed with pink mucous membranes, respiratory rate was 38 breaths/min and the pulse rate was 98 beats/min. Examination of external surface of the body revealed multiple cutaneous nodular growths (2-5 cm in diameter) over the head, neck, dorsum, flank, legs, ventrum and near the scrotal region of the dog with severe enlargement of all the superficial lymph nodes (Fig. 1). Serosanguinous fluid discharge, pain on palpation of the penis and multiple cord like growths (Fig. 2) were observed on the prepuce.



Fig 1: Multiple cutaneous nodular growths on the body surfaces



Fig 2: Protrusion of tumour growth noticed in the penile region

Haemato-biochemical parameters of the dog were within the normal range. Lateral thoracic radiographic findings revealed absence of distant organs metastasis. Impression smears taken from the penis and fine needle aspirates (FNAs) collected from the cutaneous nodules and lymph nodes were stained with Giemsa stain. Examination of the smears revealed multiple vacuolated cells suggestive of transmissible venereal tumour with few mitotic figures (Fig. 3).

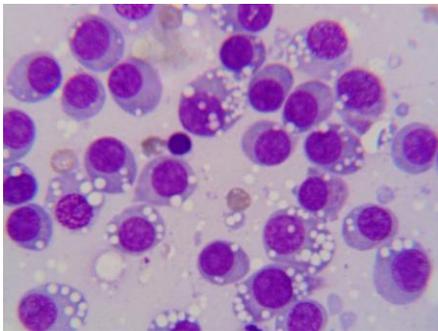


Fig 3: FNAC. The neoplastic cells showing multiple vacuolation in Giemsa stain (1000x)

Based on the history, clinical and cytological examinations the case was diagnosed as cutaneous and genital form of transmissible venereal tumour and therapeutic measures were undertaken.

Results and Discussion

Chemotherapy was started with vincristine sulphate (@ 0.025 mg/kg b.wt) intravenously at weekly interval for four weeks along with supportive therapy (Multistar pet syrup @ 10ml BID PO). The cutaneous and genital lesions started regressing after two weeks of therapy and complete regression of lesions with normal lymph nodes were observed after four weeks (Fig. 4). There was no further relapse of neoplastic growths noticed for six months after chemotherapy.



Fig 4: Complete regression of tumour growth after chemotherapy

Transmissible venereal tumours are immunogenic tumours and the immune system of host plays a major role in inhibiting tumour growth and metastasis (Cohen, 1985) [5]. The young age of the dog with maximum sexual activity in the present case might have had a greater chance for occurrence and tendency to metastasize (Das *et al.*, 1991) [7]. Metastasis was more frequently observed in males than in females (Boscos and Ververidis, 2004) [4].

Premasairam *et al.* (2018) [11] observed similar clinical signs of cauliflower like growths in genital region, haemorrhage and serosanguinous discharge from the penis and extra-genital lesions of cutaneous nodules in a dog with transmissible venereal tumour.

Multiple vacuolated cells with few mitotic figures on cytology were in agreement with Abeka (2019) [1]. Vincristine sulphate is the drug of choice against TVT and it bound to tubulin dimers to arrest cell division in metaphase stage (Coppoc, 2009) [6]. Chemotherapy in the present case followed Kumar *et al.* (2020) [10] who observed complete regression of TVT after four weeks of therapy.

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