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

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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
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]. Premsairam 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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References

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

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