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Extragenital primary cutaneous venereal granuloma in dogs: A review of three cases

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Abstract

Three intact male dogs of different breeds were presented to Veterinary Clinical Complex, Tirunelveli with a single cutaneous mass at different locations. Fine needle aspiration cytology (FNAC) smears obtained from the masses revealed the typical cytological features of transmissible venereal tumor (TVT) in all the three cases. None of the cases had lesion in the genitalia. Based on the anamnesis, clinical symptoms and cytological examinations the cases were diagnosed as primary cutaneous transmissible venereal tumors. The animals were treated successfully using Vincristine Sulphate intravenously at the rate of 0.6 mg/m². The response to chemotherapy with Vincristine Sulphate was excellent leading to complete regression of the neoplasm and no relapse.

Keywords: Cutaneous tumour, Dog, Extragenital, TVT, Venereal granuloma

Introduction

Canine transmissible venereal tumour (TVT) also known as venereal granuloma, infectious sarcoma, Sticker's sarcoma and canine condyloma is a round cell benign neoplasia with widespread distribution in all dog breeds particularly seen in regions of tropical and subtropical climate [6]. The primary location of the tumour is the genitalia but occasionally extragenital sites viz. neck, dorsum, flank and limbs were also reported [4, 10]. TVTs are locally aggressive and rarely metastatic. There is infrequent metastasis to regional lymphnodes and rarely to viscera.

Case history and Observation

Case 1: A three year old male Chippiparai (native breed of Tamil Nadu) was presented with the history of swelling in the lower jaw region past one week. Clinical examination revealed a firm nodular mass located on either side at the angle of jaw. Animal was able to eat and swallow normally. Mandibular lymph node was also swollen (Fig. 1)

Case 2: A five year old male Doberman presented with a swelling in the right hind digit past 15 days with no history of injury. On clinical examination, there was marked swelling of the 4th digit of the right hind limb with mild grade of limping and bleeding from the mass during walking. The mass was pink, firm and ulcerated. Popliteal lymph node of the respective limb was enlarged in size (Fig. 4)

Case 3: A two year old male Chippiparai was presented with a history of swelling in the abdomen past 10 days. Upon clinical examination the mass was located in the left cranial flank region and it was firm, solitary on palpation. No appreciable pain could be evinced upon palpation.

Fine needle aspiration cytology was taken for all the cases. Blood samples were collected for complete blood count and serum biochemistry analysis. The animals were treated with inj. Vincristine Sulphate at a dose rate of 0.6 mg/m² intravenously through normal saline weekly once for 5 weeks. Supportive therapy with liver tonic was also prescribed.

Results and Discussion

Hematobiochemical values were within the normal range. Cytology showed a predominance of round cells with abundant pale cytoplasm and distinct, punctate cytoplasmic vacuoles

suggestive of TVT (Fig. 2).

Canine TVT has a worldwide distribution with higher incidence in areas with large populations of free-roaming dogs and suboptimal breeding practices [12, 3]. There is no clear age, gender or breed predisposition, but large breeds of dogs are affected more frequently [4, 5]. Two of the dogs (Chippiparai breed) cited in this report are hunting hound breeds that had free roaming access, without supervision of the owners, and they are likely to have contracted TVT on those occasions. Regarding case 2, the dog was mainly bred for breeding purpose which might had close contact with another female dog. The dogs reported in this paper are between 2 to 5 years which coincides with the report of [4] who reported that Canine TVT is most common in dogs of age 2 to 5 years and there is no breed or sex predisposition.

Reports of primary TVT arising in extragenital sites are few, the most common sites being the nasal and oral cavities, skin, and rectum transmitted by sniffing or licking or biting the genitalia of carrier animals [11, 8, 16]. The most common site of metastasis was the regional lymphnode [2]. In this report none of the animal had lesions on their genitalia. Case 1 and 2 might had acquired it by licking the carrier animal and had lymph adenopathy. But metastasis to the regional lymph node (popliteal) was noticed in case 2 only.

TVT which proliferate in genital organs had a cauliflower like appearance with ulceration, but extra genital TVT was generally observed in nodular form, bearing ulcerations of variable sizes which might invade the mucosa and sub mucosa [7]. This correlates with the present paper in which the cases showed multiple lobules, firm ulcerative mass and solitary nodule in case 1, 2,3 respectively

Definitive diagnosis is based on physical examination and cytological findings [9] and cytology is the best choice for diagnosis of TVT [1] since the technique is simple, cheap, minimally invasive and painless produces much less distortion of cell morphology than formalin fixed biopsy samples. In the present report, the diagnosis was confirmed by cytological examination, carried out through fine needle aspiration. TVT cells are large round cells with round nucleus, coarse chromatin, one to two prominent nucleoli, abundant and lightly basophilic cytoplasm and multiple punctate vacuoles. The high mitotic index and the numerous, well demarcated intracytoplasmic vacuoles allow for a reliable differentiation from other more common round cell skin tumors [5] (Fig. 2 and 5)

Reports suggest that there are several treatment protocols viz. chemotherapy, surgery, radiotherapy and immunotherapy [13]. The intravenous administration of vincristine at the dose of 0.6 mg/m² to 0.8mg/m² of body surface, once a week, for 2-6 weeks, is the best treatment of choice regardless of the neoplasm size, extent, and duration of the disease [15]. Clinical evident of regression was noticed for case no.1, 2, and 3 on 3rd, 2nd and 2nd week respectively. Complete regression of tumour was reported in 6 weeks in case 1 and 2 and 5 weeks in case 3 (Fig. 3 and 6)

Side effects following administration of Vincristine such as gastrointestinal effects, myelosuppression, paresis due to peripheral neuropathy may occur in 5 to 7% of the patients [15] and local tissue reactions caused by extravasation of the drug [13] has been reported. In the present study, case 1 reported signs of inappetance and nausea.



Fig 1: Case no.1 Tumour mass noticed on the left lateral neck.

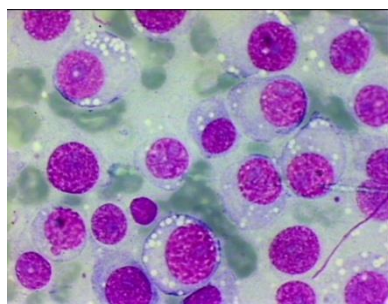


Fig 2: Discrete cells with basophilic vacuolated cytoplasm



Fig 3: Case no.1 After 6 weeks of treatment.



Fig 4: Case no.2 Tumour mass noticed on the 4th digit of the right hind limb

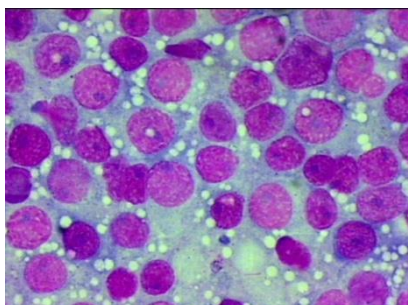


Fig 5: Sheet of round cells with cytoplasmic vacuolation.



Fig 6: Case no.2 After 5 weeks of treatment.

Summary

Extragenital TVT is a relatively uncommon clinical occurrence. The present paper reports the cutaneous forms of TVT and their successful management using Vincristine Sulphate.

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