Journal of Entomology and Zoology Studies

Available online at www.entomoljournal.com

E-ISSN: 2320-7078
P-ISSN: 2349-6800
JEZS 2018; 6(6): 891-893

Received: 10-09-2018
Accepted: 11-10-2018

Supriya Yadav
Division of Medicine, ICAR-Indian Veterinary Research Institute, Izatnagar, Uttar Pradesh, India

Pankaj Kumar Patel
Division of Medicine, ICAR-Indian Veterinary Research Institute, Izatnagar, Uttar Pradesh, India

Desh Deepak
Division of Medicine, ICAR-Indian Veterinary Research Institute, Izatnagar, Uttar Pradesh, India

Alok Kumar Chaudhary
Division of Medicine, ICAR-Indian Veterinary Research Institute, Izatnagar, Uttar Pradesh, India

Arvind Kumar Das
Division of Medicine, ICAR-Indian Veterinary Research Institute, Izatnagar, Uttar Pradesh, India

SK Dixit
Division of Medicine, ICAR-Indian Veterinary Research Institute, Izatnagar, Uttar Pradesh, India

Correspondence
SK Dixit
Division of Medicine, ICAR-Indian Veterinary Research Institute, Izatnagar, Uttar Pradesh, India

Therapeutic management of canine transmissible venereal tumor (CTVT) in a Labrador retriever female dog: A case report

Supriya Yadav, Pankaj Kumar Patel, Desh Deepak, Alok Kumar Chaudhary, Arvind Kumar Das and SK Dixit

Abstract
A two-year-old Labrador retriever female dog was presented to the Referral Veterinary Polyclinic, IVRI Izatnagar with complaint of anorexia, lethargy and nodular growth with the hemorrhagic discharge from the external genetalia. Clinical examination revealed pale mucous membrane, enlarged popliteal lymph nodes and nodular, papillary multilobulated, cauli£ower-like pedunculated proliferations with hemorrhagic vulvar discharge. Exfoliative cytology of vaginal smear was positive for canine transmissible venereal tumor (CTVT). The hemato-biochemical report revealed increesed lymphocyte count. The institution of treatment of the bitch with vincristine sulphate along with supportive therapy brought successful recovery in 4 weeks.

Keywords: Cauliflower-like pedunculated proliferations, hemorrhagic vulvar discharg

1. Introduction
Canine transmissible venereal tumor (CTVT) is usually a sexually transmitted benign reticuloendothelial tumor of the external genitalia and occasionally the internal genitalia of dogs. It is generally transmitted through coitus in the dog render both sexes prone to genital injury and so susceptible to transplantation of the tumour cells in young, sexually mature and immunocompromised dogs. CTVT cells contain an abnormal number of chromosomes ranging from 57 to 64 rather than the normal (78) lead to cytological alteration [11, 6]. The round to slightly polyhedral cells with nuclear pleomorphism, chromatin condensation, cytoplasmatic vacuoles and high nucleus to cytoplasmic ratio are typical characteristics of the vainal mucosal cells [9]. Chemotherapy by cytostatic agent has been shown to be the most effective and practical therapy, with vincristine sulfate being the most frequently used drug [2]. The present case report deals with the therapeutic management of canine transmissible venereal tumor (CTVT) in a Labrador retriever female dog.

2. Materials and methods
Based on clinical examination and findings of exfoliative vaginal cytology, the case was diagnosed as a canine transmissible venereal tumor (CTVT) in the bitch.

2.1 Case History
A Labrador retriever female dog aged 2 year old was presented to the Referral Veterinary Polyclinic, IVRI Izatnagar in recumbent stage having history of anorexia, lethargy and nodular growth with hemorrhagic discharge from the external genetalia. The bitch was not dewormed and vaccinated as per standard regimen. The bitch was previously treated in the local veterinary hospital having no improvement.

2.2 Clinical examination
Clinical examination revealed pale conjunctival mucous membrane, normal body temperature (102.1 ºF), normal heart (76 beat per minute) and respiration rate (30 breath per minute), enlarged lymph node and nodular, papillary multilobulated, cauliflower-like pedunculated proliferations (Fig.1) with hemorrhagic vulvar discharge (Fig.2). Blood smear examination with Giemsa's staining was negative for haemoprotozoan disease.
Differential diagnosis was done to rule out the possibilities of other coditions like cystitis and

renal diseases by ultrasonographic examination which was negative for those conditions. The hemato-biochemical profiling (Table 1) revealed an increased lymphocyte count. Exfoliative cytology of vaginal smear (Fig.3) revealed the typical round to slightly polyhedral cells, with vacuolated thin cytoplasm, round hyperchromatic nucleus with a nucleolus and large nucleus to cytoplasmic ratio.

Fig 1: Cauliflower like growth

Fig 2: Hemmorrhagic vulvar discharge

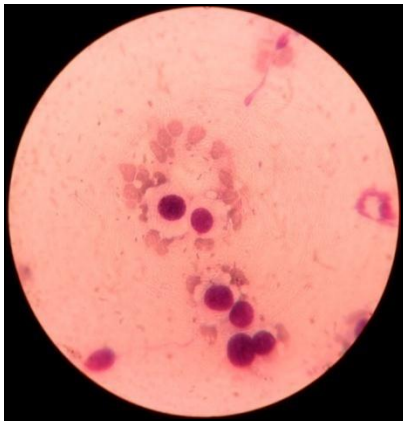

Fig 3: Exfoliative vaginal cytology

Table 1: The hemato-biochemical profiling in affected dog

Parameters	Reference range [10]	0 day	28th day
Hb (g/dl)	11.9-18.9	12.1	14.6
PCV (%)	24-46	32.2	35
TEC (10^6/cmm)	4.95-7.87	3.94	4.2
TLC (10^3/cmm)	5.0- 14.1	13.8	13.4
Neutrophils %	58-85	68	73
Lymphocytes %	8-21	32	21
Monocytes%	2-10	0	0
Eosinophils%	0-9	0	0
Basophil%	0-1	0	0
Platlet count (10^6/cmm)	211-621	290	297
SGPT(U/L)	10-109	28	23
SGOT (U/L)	13-15	37	21
BUN (mg/dl)	8-28	16.8	13.2
Creatinine(mg/dl)	0.5-1.7	0.5	0.8
Total Protein (mg/dl)	5.4-7.5	7.5	6.8
Albumin (mg/dl)	2.3-3.1	3.0	2.8
Globulin (mg/dl)	2.7-4.4	3.5	4.0

2.3 Treatment

Following the diagnosis of the case, treatment was started with chemotherapy in the form of antimitotic agent (Vincristine sulfate @ 0.025 mg/kg body weight administered strictly intravenous weekly for 4 occasions). Supportive treatment with Haemocoagulase (Inj. Botropase 1 ml IM BID), antiemetics (Ondansetron @ 0.5 mg/kg body weight IV OD), omeprazole @ 0.5 mg/kg body weight IV OD for 2 days, syrup B-complex with vitamin C (becasule 1 tsp PO BID) and a herbal immunomodulator syrup (Immunol 1 tsf PO BID for 28 days) was given.

3. Results

There was a significant improvement noticed in the condition after the first treatment and dog started taking food and water gradually. Normal haemato-biochemical values and normal exfoliative vaginal cytology indicated a normal nucleus cytoplasmic ratio on vaginal smear 4 weeks after treatment with vincristine sulfate.

4. Discussion

CTVT is usually a sexually transmitted benign reticuloendothelial tumor of the external genitalia and occasionally the internal genitalia of dogs. During the coitus lead loss of mucosal integrity facilitates the implantation of the neoplasm [13]. Gross lesions generally found 2 or 3 weeks after implantation as small pink to red, 1-3 mm diameter nodules. Initially epidermally pedunculated and later multiple nodules combined collectively and form larger, cauliflower-like, friable masses 5-7 cm in diameter which progress deeper into the mucosa with increased diameters that can exceed 10 - 15 cm and bleed easily and become ulcerated [1]. Physical contact offers the main mode of transmission of the exfoliation and transplantation of neoplastic cells into genital mucosa, and also oronasal route if contacted with genitalia [3, 8]. Cytological examination reveals the typical round to slightly polyhedral cells with nuclear pleomorphism, chromatin condensation, cytoplasmatic vacuoles and high nucleus to cytoplasmic ratio [9].

Chemotherapy has been shown to be the most effective and practical therapy, with vincristine sulfate being the most frequently used drug [2]. Vincristine is administered weekly at a dose of 0.5 to 0.7 mg/m2 of body surface area or 0.025 mg/kg, IV [8]. The involution of the lesions is gradual, although it is particularly noticeable and significant at the beginning of the treatment. Complete remission usually takes 2 to 8 injections [5, 2]. Vincristine damages the DNA of germ cells thereby reducing the rate of development of these cells [14]. It also causes precipitation of cytoplasmic protein, which in turn interferes with microtubule formation [11] and thereby inhibits the tumor growth. In present study immunomodulating agents was used due to CTVTs are immunogenic tumors, and it has been demonstrated that the immune system of the host has a main role in inhibiting tumor growth and metastasis [4]. In young dogs or dogs with a compromised immune system, tumors may have a higher tendency to metastasize [13]. Cytostatic agents, such as vincristine, may cause myelosuppression and gastrointestinal effects resulting in leukopenia and vomiting in 5 to 7% of the patients. Omeprazole as a proton pump inhibitor that inhibits gastric acid secretion and maintain gastric homeostasis [15]. B-complex with vitamin C was supplemented as a nervine tonic due to paresis has also been described as a potential side effect due to peripheral neuropathy [2].

5. Conclusions

CTVT is the most prevalent neoplasia of the external genitalia

of the bitch which can be efficiently managed with weekly administration of vincristine. Clinicians and owners must balance the potential benefits to the patient and the interest in using the animal for breeding. Careful examination of animals in breeding kennels before mating, with a view to not breed affected animals, and dog licensing laws, controlling the pool of potentially infected ownerless dogs roaming wildly, will control the incidence of the disease. Where both these factors have been in operation, the incidence of the disease has fallen and the disease is rare [7].

6. Reference

1. Aprea AN, Allende MG, Idiart JR. Tumor venéreo transmisible intrauterino. Descripción de un caso. Veterinaria Argentina. 1994; 11:192-192.
2. Calvet CA, Leifer CE, McEwen EG. Vincristine for the treatment of Transmissible Venereal Tumor in the dog. J Am Vet Med Assoc. 1982; 181(2):163-164.
3. Cohen D. The canine transmissible venereal tumor: A unique result of tumor progression. Adv Cancer Res. 1985; 43:75-112.
4. Cohen D. The biological behavior of TVT in immunosuppressed dogs. Eur. J Cancer. 1973; 3:163-164.
5. Daleck CLM, Ferreira HI, Daleck CR, *et al*. Novos estudos sobre o tratamento do tumor venéreo transmissível canino. Ars Vet. 1987; 3(2**)**:203-209.
6. Das U, Das AK. Review of canine transmissible venereal sarcoma. Veterinary research communications. 2000; 24(8):545-556.
7. Head KW. Breed and geographical variations in the occurrence of tumours in domesticated mammals. In: A.A. Shivas (ed.), Racial and Geographical Factors in Tumour Incidence, (P¢zer Medical Monographs No. 2, Edinburgh University Press), 1967, 251-275.
8. Johnson CA. Infecções genitais e tumor venéreo transmissível. In: Nelson RW, Couto CG, eds. Fundamentos de Medicina Interna de Pequenos Animais. Rio de Janeiro: Guanabara Koogan, 1994, 525.
9. Mello MI, Ferreira de Souza F, Gobello C. The canine transmissible venereal tumor: etiology, pathology, diagnosis and treatment. Recent advances in small animal reproduction. International Veterinary Information Service, Ithaca NY, 2005.
10. Merck Veterinary Manual. 1^{1th} Edition, Merck & Co., Inc. Kenilworth, NJ, USA.
11. Rosenthal RC. Clinical application of Vinea alkaloids. J Am Vet Med Assoc. 1981; 179(11):1084-1086.
12. Vermooten MI. Canine transmissible venereal tumor (TVT): a review. JS Afr Vet Assoc. 1987; 58(3):147-150.
13. Yang TJ. Immunobiology of a spontaneously regressive tumor, the canine transmissible venereal sarcoma (Review). Anticancer Res. 1988; 8:93-96.
14. Zhang Y, Sun K. Unscheduled DNA synthesis induced by the antitumor drug vincristine in germ cells of the male mice. Mutat Res. 1992; 281(1):25-29.
15. Patel PK, Patel SK, Dixit SK, Rathore RS. Gastritis and Peptic Ulcer Diseases in Dogs: A Review. International Journal of Current Microbiology and Applied Sciences. 2018; 7(3):2475-2501.