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Case Report

Management of Canine Veneral Tumor in a Labrador Dog

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Abstract

A male Labrador dog of the age of 2 years was presented at Referral Veterinary Polyclinic with complaint of abnormal growth near prepucial region. On clinical examination cauliflower-like, pedunculated, nodular, papillary in appearance type of tumor noted as veneral tumor was diagnosed. It was small but dispersed growth near prepuce and was causing irritation to animal during urination. Due to licking or scratching injury was present. As the tumor was benign hence medical treatment was started. Initially the affected was disinfected properly with dilute iodine solution so as to remove dead tissue, dirt, and prevent infection to injured part. Then vincristine was administered intravenously at a dose of 0.5 mg/m^2 every 7 to 14 days in dog. Besides thuja drops @2-3 drops on alternate days were recommended in addition to antioxidants, immunomodulators, vitamin and mineral supplements. The animal responded well to treatment after 3-week therapy, the lesion was improving and growth was reduced. Hence it can be concluded that vincristine along with supplements can help in better management of veneral tumors in dogs.

Introduction

Canine veneral tumors are common in dogs [1]. They have been reported in Labrador dogs also [2,3]. They are usually benign and hence treated medically however severe and malignant cases which are usually rare

(5%) are either non-treatable or require surgery [4]. Radiotherapy is rare. Medical treatment involves use of anticancer drugs like vincristine whereas surgical treatment involves removal of affected tissue. Usually medical treatment gives good response and is cheap, easy and less painful hence preferred treatment.

Vincristine, a dimer-indo-alkaloid, extracted from the leaves of Catharanthus roseus is effective to treat various types of cancers including acute lymphocytic cell leukemia, Hodgkin disease and non-Hodgkin disease clinically [5]. Thuja, commonly known as Arbor vitae or white cedar, is an ornamental tree grown in Europe. It contains Thujone which has proven anticancer activity [6].

Canine veneral tumors are cauliflower-like, pedunculated, nodular, papillary, or multilobulated in appearance [7]. They range in size from a small nodule (5 mm) to a large mass (>10 cm) that is firm, though friable [2]. The surface is often ulcerated and inflamed and bleeds easily. TVTs may be solitary or multiple and are almost always located on the genitalia. The infectious agent of canine transmissible venereal tumor is the cancer cell itself and the tumor is clonal in origin. There is no evidence that the tumor is caused by a virus or virus-like organism. Hence antiviral or antimicrobial drugs are usually not effective for treatment of this tumor. The tumor may arise deep within the preputial, vaginal, or nasal cavity and be difficult to see during cursory examination. Bleeding is misdiagnosed as hematuria or epistaxis.

Materials and Methods

Male Labrador dog of the age of 2 years was presented at Referral Veterinary Polyclinic, Indian Veterinary Research Institute. Animal was having complaint of abnormal growth near prepucial region with scratches, oozing blood/serum like fluid. Mating was not done.

Result

On clinical examination cauliflower-like, pedunculated, nodular, papillary in appearance type of tumor noted as veneral tumor was diagnosed. It was small but dispersed growth near prepuce and was causing irritation to animal during urination. Due to licking or scratching injury was present. Hence animal exhibited pain and was bleeding occasionally.

As the tumor was benign hence medical treatment was started. Initially the affected was disinfected properly with dilute iodine solution so as to remove dead tissue, dirt, and prevent infection to injured part. Then vincristine was administered intravenously at a dose of 0.5 mg/m^2 every 7 day for 3 weeks. Besides thuja drops @2-3 drops on alternate days were recommended in addition to antioxidants, immunomodulators, vitamin and minerals in the form of supplements. The treatment was continued for 3 weeks with regular antiseptic dressing. The animal responded well to treatment after 3-week therapy, the lesion improved and growth was reduced.

Discussion

The improvement in veneral tumor due to this therapy may be due anticancer effect of vincristine and thuja drops supported by antioxidants, immunomodulators, vitamin and mineral supplements that may have reduced oxidative stress, prevented immunosuppression, inflammatory cascade and improved immunomodulation.

Anticancer effect of vincrsitine is well known [8]. Vincristine will bind to the proteins of actively dividing cells, preventing cell division and resulting in cell death [9]. Anticancer role of thuja is documented [10]. Prevention of oxidative stress by antioxidants [11], immunosuppression by immunomodulators is also reported [12].

Among the effective treatments include complete surgical excision, radiation therapy, and chemotherapy; however, chemotherapy is considered the treatment of choice being easy to adminster, less painful and without too many side effects. Vincristine sulfate (0.5-0.7 mg/m^2, IV, once weekly for 3-6 wk) is reported to be effective. Tumor reduction is dependent on age, season and size. Usually, total remission can be expected by the sixth treatment. Some agents have also been reported effective in association with other methods of therapy. Adriamycin (30 mg/m^2 for dogs weighing >10 kg; 1 mg/kg for dogs weighing ≤10 kg; IV, once every 3 wk) and radiation therapy have been effective for those animals that do not respond to vincristine.

In canine veneral tumors the prognosis for total remission with chemotherapy or radiation therapy is good, unless there is metastatic involvement of organs other than skin. Being deeply seated tumor, complete surgical excision often cannot be achieved because of the anatomic location of many of these tumors. Recurrence is likely in such cases unless adjunct radiation or chemotherapy is used. Hence medical management of canine veneral tumors is mostly practiced and our study supports the same.

Bibliography

1. Kutzler, M. (2016). *Overview of Canine Transmissible Venereal Tumor*. (12th Ed). The Merck Veterinary Manual.

2. Knoll, J. S. & Simoni, R. (2006). Clinical Exposures: Canine transmissible venereal tumor: The cytologic clues.

3. Thangathurai, R., Balasubramaniam, G. A., Dharmaceelan, S., Balachandran, P., Srinivasan, P., Sivaseelan, S. & Manohar, B. M. (2008). Cytological diagnosis and its histological correlation in canine transmissible venereal tumour. *Veterinarski Arhiv., 78*(5), 369-376.

4. Lokesh, J. V., Kurade, N. P., Shivakumar, M. U., Sharma, A. K. & Maiti, S. K. (2014). Evaluation of BcL–2 and PCNA Expression and Mitotic Index in Spontaneous Canine Tumours. *Advances in Animal and Veterinary Sciences, 2*(1), 63-66.

5. Lu, Y., Hou, S. X. & Chen, T. (2003). Advances in the study of vincristine: an anticancer ingredient from Catharanthus roseus. *Zhongguo Zhong Yao Za Zhi., 28*(11), 1006-9.

6. Biswas, R., Mandal, S. K., Dutta, S., Bhattacharyya, S. S., Boujedaini, N. & Khuda-Bukhsh, A. R. (2011). Thujone-Rich Fraction of Thuja occidentalis Demonstrates Major Anti-Cancer Potentials: Evidences from *In Vitro* Studies on A375 Cells. *Evid Based Complement Alternat Med.,* 568148.

7. Ganguly, B., Das, U. & Das A. K. (2016). Canine transmissible venereal tumour: a review. *Vet. & Comparative oncology, 14*(1), 1-12.

8. Den Otter, W., Hack, M., Jacobs, J. J., Tan, J. F., Rozendaal, L. & VAN Moorselaar, R. J. (2015). Effective Treatment of Transmissible Venereal Tumors in Dogs with Vincristine and IL2. *Anticancer Res., 35*(6), 3385-91.

9. Zhou, J. & Giannakakou, P. (2005). Anticancer agents. *Curr Med Chem., 5*(1), 65-71.

10. Küpeli Akkol, E., İlhan, M., Ayşe Demirel, M., Keleş, H., Tümen, I. & Süntar, İ. (2015). Thuja occidentalis, L. and its active compound, α-thujone: Promising effects in the treatment of polycystic ovary syndrome without inducing osteoporosis. *J Ethnopharmacol., 168*, 25-30.

11. Seifried, H. E. (2007). Oxidative stress and antioxidants: a link to disease and prevention? *J Nutr Biochem., 18*(3), 168-71.

12. Blecha, F. (2001). Immunomodulators for prevention and treatment of infectious diseases in food-producing animals. *Vet Clin North Am Food Anim Pract., 17*(3), 621-33, viii.