Homeopathy for the Treatment of Transmissible Venereal Tumor (TVT) in a Mixed-Breed Female Dog

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Abstract

The diagnosis of canine transmissible venereal tumor (TVT) is based on clinical, cytological and/or histopathological examination. Vincristine sulfate is the conventional treatment of choice. Furthermore, homeopathy is also a therapeutic possibility by the use, for example, of Viscum album, which has been employed in the treatment of cancer. A 2-year-old mixed-breed female dog diagnosed with TVT was orally treated with Thuya occidentalis 6x 10^-12; topical application of T. occidentalis 9x 10^-18 in the lesion; and V. album subcutaneous applications in different dilution combinations. The tumor was reduced by about 90% during 150 days of treatment, and the patient had no longer bloody vaginal discharge. The complete remission was accomplished with a single vincristine application (0.025mgKg^-1). No tumor was observed a week later, and the cytological examination confirmed the absence of tumor cells. No side effects were verified during the treatment period.

Keywords: Thuya occidentalis; Tumor remission; Viscum album

Introduction

Transmissible venereal tumor (TVT) or Tumor de Sticker is a neoplasm of spontaneous occurrence more common in genital organs, not involving any infectious agents in its etiology [1]. TVT is a neoplasm characterized by the mechanical implantation of tumor cells in a healthy tissue by coitus [2] but can be transplanted to other sites by licking or direct contact [3].

This tumor affects dogs, with no sexual and racial predisposition, most commonly in free-living animals, especially in warmer times of the year [4]. The common clinical sign of that disease is bloody discharge from the affect sites due to increase in tumor size [5]. In general, the diagnosis is based on clinical, cytological, and/or histopathological examination. Chemotherapy, especially single agent of vincristine sulfate, is a treatment of choice for TVT. Currently, other therapies including radiotherapy, surgical excision, immunotherapy and autohemotherapy have also been demonstrated [2].

Homeopathy is also a therapeutic possibility, which can be established as a single treatment or associated with chemotherapy [6]. According to these authors, the association of homeopathic and chemotherapeutic medicines reduces the treatment time to which the animal is subjected, reducing the vincristine application frequency. Homeopathy was created by the German physician Samuel Hahnemann. It is based on the law of similars and may be indicated for treating several neoplasms. Thuya occidentalis, the most cited medicine, is well-known for its therapeutic action in numerous pathologies [6]. In this context, Viscum album is gaining emphasis in oncological treatments due to the cytotoxic action of viscotoxins and lectins, some of its pharmacologically active compounds. The mechanism of action of these substances has not yet been elucidated, but it is known that lectins act in the cell membrane inducing apoptosis whereas viscotoxin induces rapid cell death by necrosis [7].

The combination of injectable V. album and vincristine has been reported to be effective as a therapy for TVT treatment in dogs, reducing the time of chemotherapeutic treatment and the leucopenia produced by the vincristine administration [8]. This study aimed to report the use...
of the homeopathic medicines *V. album* and *T. occidentallis*, in the TVT treatment of a mixed-breed female dog, for 150 days.

**Material and Methods**

A 2-year-old mixed-breed female dog, weighing 9.5Kg, was attended on November 2014 at Natural Pet - Integrative Veterinary Clinic (Brasilia, DF, Brazil). The animal had given birth in the previous two months and then presented persistent vaginal bleeding. In the first clinical evaluation, increased volume of the vaginal canal (4.9cm x 4.7cm) associated with bloody vaginal secretion was verified. The TVT diagnosis was confirmed by vaginal cytology, which showed a high cellularity of 2 cell population, round cells and neutrophils. The former cells were round and eccentric nucleus, granular chromatin, and distinct bluish cytoplasm with small vacuoles. Red blood cells, bacteria, and epithelial cells were also observed.

Hemogram analyses were normal and resulted in red blood cells: 6.3x10^6/mm^3; Hematocrit: 40%; Hemoglobin: 13.5g%; total proteins: 7.2g/dL; VCM: 63.4%; Lymphocytes: 15,200/mm^3; Lymphocytes: 18%; Platelets: 354,000/mm^3. Oral administration of *T. occidentallis* 1x10^-12 solution, three drops, three times a day, and topical application of *T. occidentallis* 1x10^-18 solution, three drops, in the lesion site, once-per-day, were initially prescribed. After seven days (Figure 1A), the *V. album* injectable therapy was started. The treatment consisted of one subcutaneous application (1ampoul - 1mL) of *V. album* solution, per day. *V. album* applications followed a predetermined sequence of different potencies, as described: day 1) 1x10^-6+1x10^-12; day 2) 1x10^-18+1x10^-24; day 3) 1x10^-60; day 4) 1x10^-12+1x10^-18; day 5) 1x10^-34+1x10^-40. This sequence was performed intermittently for 30 days. From the second month onwards, *V. album* applications were performed on alternate days, following the same administration sequence described above.

**Results**

A reduction of the mass to 3.0cm x 2.3cm was observed at the end of the first treatment phase, which lasted 30 days (Figure 1B). From the second month onwards, *V. album* was applied on alternate days and, after 30 days, the tumor diameter was reduced to 2.0cm x 2.0cm. After 90 and 150 days of treatment, the mass measured 1.0cm x 0.9cm (Figure 1C) and 0.5cm x 0.4cm (Figure 1D), respectively. The Hemogram in June/2015 showed red blood cells: 6.8X10^6/mm^3; Hematocrit: 45%; Hemoglobin: 15g%; Total protein: 8g/dL; MCV: 66.1fl; Leukocytes: 15,800/mm^3; Lymphocytes: 25%; Platelets: 265,000/mm^3. Urinalysis in June/2015 showed cloudy aspect; color-yellow citrine; odor-sui generis; pH-6.0; density-1.050; ptn+(30mg/dL); light bacteriuria (occus). At this time, a single vincristine application (0.025 mg Kg^-1) was performed to complete remission of the tumor mass and completion of the treatment. Two months later after vincristine application Hemogram in October/2015, showed red blood cells: 7.5 X10^6/mm^3; Hematocrit: 50%; Hemoglobin: 17.6g%; Total protein: 8g/dL; MCV: 66.7fl; Leukocytes: 14,000/mm^3; Lymphocytes: 15%; Platelets: 271,000/mm^3. Biochemical analyzes showed Creatinine: 1.1mg/dL; ALT: 48.9UI/L.

**Discussion**

TVT is the most common neoplasm that affects the external genitalia of dogs and one of the causes of higher demand for veterinary care. TVT incidence is high in Brazil due to the tropical climate and large number of stray and sexually active dogs [2]. Several therapies are proposed for the treatment of this disease, such as chemotherapy, radiotherapy, immunotherapy, surgical excision, homeopathy.

Chemotherapy is the treatment of choice for this disease, and vincristine sulfate is used as the single medication. However, chemotherapy side effects and the increased reports of patient resistance to vincristine therapy, have stimulated the search for new and useful substances against TVT [6]. According to this...
author, studies have shown that the association of vincristine with ivermectin or homeopathic and herbal medicines, which promote immunostimulation, may reduce the application number of the chemotherapeutic and also its side effects.

In this study, the homeopathic medicines *V. album*, subcutaneously injected, and *T. occidentalis*, orally administered, reduced about 90% of the tumor during 150 days of treatment, with no manifestation of side effects. These results conform with those of Lefebvre et al. [8], who also observed no side effects in the patient when using injectable *V. album* to reduce tumor size.

The prescription of *T. occidentalis* was due to pathogenetic similarity (Vannier and Poirier, 1987), aiming at a complementary treatment. Manhoso, et al. [6] and Santos et al. [2] also reported satisfactory results when using *T. occidentalis* for TVT treatment. The significant reduction observed in the mass substantially minimized the use of vincristine. Therefore, only one application of this chemotherapeutic was required for complete resolution of the disease [9,10].

**Conclusion**

*V. album* and *T. occidentalis* proved to be important therapeutic tools for the treatment of canine TVT. *T. occidentalis* oral and topical administration associated with *V. album* injectable therapy significantly reduced the tumoral manifestation of the disease, with no side effects, such as leucopenia. The patient’s overall health was preserved, and the quality of life was improved. However, further studies are needed to fully understand how homeopathic medicines act in the treatment of this disease.

**References**