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TRANSMISSIBLE CUTANEOUS VENEREAL TUMOR IN A DOG: CASE REPORT

TUMOR VENÉREO TRANSMISSÍVEL CUTÂNEO EM CÃO: RELATO DE CASO

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ABSTRACT

Transmissible Venereal Tumor, historically known as Sticker's sarcoma, is a contagious round cell neoplasm affecting canines, primarily transmitted through coitus or direct contact with affected mucous membranes. Although venereal transmission and genital location are the classic presentations, primary or metastatic cutaneous manifestation poses a significant diagnostic and therapeutic challenge, especially in endemic countries like Brazil. This article aims to analyze a clinical case of cutaneous TVT in the thoracic region of a male, mixed-breed dog. The report describes the management of a verrucous lesion, treated with a Vincristine protocol (0.025 mg/kg) over eight sessions, resulting in complete remission and supportive therapy management. The case reiterates the effectiveness of chemotherapy treatment and the need for differential diagnosis in skin lesions, and the discussion extends to public health, examining the crucial role of population control policies and castration in breaking the chain of transmission of this neoplasm, consolidating the understanding of TVT not only as a clinical disease, but also as a socio-environmental indicator.

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Keywords: Tumor. Mutations. Chemotherapy. Control.

RESUMO

O Tumor Venéreo Transmissível, historicamente denominado sarcoma de Sticker, é uma neoplasia contagiosa de células redondas que acomete canídeos, sendo transmitida principalmente por coito ou contato direto com mucosas afetadas. Embora a transmissão venérea e a localização genital sejam as apresentações clássicas, a manifestação cutânea primária ou metastática constitui desafio diagnóstico e terapêutico relevante, especialmente em países endêmicos como o Brasil. Este artigo tem por objetivo a análise de um caso clínico de TVT cutâneo em região torácica de um cão macho, sem raça definida. O relato descreve o manejo de uma lesão de aspecto verrucoso, tratada com protocolo de Vincristina (0,025 mg/kg) ao longo de oito sessões, com remissão completa e manejos de terapia de suporte. O caso reitera a eficácia do tratamento quimioterápico e a necessidade de diagnóstico diferencial em lesões cutâneas e a discussão estende-se à saúde pública, examinando o papel crucial das políticas de controle populacional e a castração, na ruptura da cadeia de transmissão desta neoplasia, consolidando o entendimento do TVT não apenas como uma enfermidade clínica, mas como um indicador socioambiental.

Palavras-chave: Tumor. Mutações. Quimioterapia. Controle.

INTRODUCTION

Transmissible Venereal Tumor (TVT) represents, in veterinary medicine, the oldest known clonal cell lineage in nature, with estimates of its origin dating back approximately 11,000 years (Costa, 2021). Classified in the group of round cell neoplasms, along with mast cell tumors, lymphomas, and histiocytomas, TVT is distinguished by its etiology; it is not a neoplastic transformation of host cells, but rather a physically transmitted parasitic allograft (Ferreira, 2023). The histogenesis of TVT, once controversial, is currently established as being of myeloid/monocytic origin, confirmed by immunohistochemical markers such as lysozyme and vimentin (Toledo and Moreira, 2018). Transmission occurs predominantly through coitus,

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affecting the genital mucous membranes, but the social behavior of dogs, such as licking, sniffing, and biting, facilitates the implantation of tumor cells in extragenital sites, such as the nasal cavity, oral cavity, and skin (Pimentel, Oliveira and Horta, 2021).

In the Brazilian epidemiological scenario, TVT remains endemic and highly prevalent. Data from university hospitals indicate that TVT may represent approximately 4.3% to 5% of all oncological care in dogs (Pimentel et al., 2025). Studies conducted in the Southeast region point to a high gross incidence, with genital TVT comprising the majority of cases, while extragenital forms account for approximately 10% to 22.6% of occurrences (Costa et al, 2023; Pimentel et al, 2025).

The persistence of this disease is intrinsically linked to socioeconomic factors and the population density of stray or semi-domesticated animals. The lack of effective reproductive control perpetuates the transmission chain, making TVT an indicator of failures in veterinary public health and animal welfare policies (Silva et al, 2022). Castration is identified as the most effective long-term prophylactic measure.

The definitive diagnosis of TVT is based on the correlation between clinical findings and laboratory tests. Clinically, the lesions are characterized as exophytic, friable, and verrucous-looking masses, resembling a "cauliflower" or nodular, frequently ulcerated and accompanied by serosanguineous discharge (Araújo and Gomes, 2022). Aspiration cytology is the method of choice due to its practicality, low cost, and high sensitivity, revealing a population of round to oval cells with slightly basophilic cytoplasm and clear, punctiform cytoplasmic vacuoles, distinctively described as "string of pearls" (Silva et al, 2022). Histopathology is recommended for confirmation in atypical or undifferentiated extragenital cases, where microscopically a growth pattern is observed in solid cords of round cells, supported by a sparse fibrovascular stroma and a high mitotic index (Sousa et al, 2000).

Regarding therapeutic modalities, treatment may involve surgical excision, radiotherapy, cryosurgery, and chemotherapy. However, surgery alone presents high recurrence rates, reaching up to 60%, due to the difficulty in obtaining margins in complex anatomical areas. Currently, antineoplastic chemotherapy has become the

preferred modality, with Vincristine Sulfate being the most commonly used drug (Ferreira, 2023). In a study with 144 dogs, Hupples et al. (2014) demonstrated the high efficacy of the drug as a single agent, observing complete remission in most cases, including extragenital presentations, although genital location was the most common, with an average treatment duration of 4 to 6 weekly sessions. Corroborating these data, a more recent investigation by Costa et al. (2023), analyzing 252 cases in Rio de Janeiro, reported that 99.3% of the animals received vincristine sulfate, achieving a complete remission rate of 77.2%.

CASE REPORT

A male, mixed-breed dog, estimated to be five years old, rescued from a public street, was admitted to the veterinary hospital. The main complaint was an extensive skin lesion located on the lateral thoracic region. Physical examination and dermatological inspection revealed a neoplasm on the right flank, approximately 12 cm in diameter. The lesion exhibited a multilobulated and friable morphology, with an irregular surface resembling "cauliflower," in addition to areas of central ulceration, necrosis, and purulent serosanguineous discharge with a fetid odor, and was associated with the presence of myiasis (Figure 1).

Figure 1: Post-treatment clinical aspect, showing complete remission of the neoplasm and presence of residual scarring.



Source: Personal archive.

Furthermore, the patient presented with cachexia, mild dehydration, and pale mucous membranes. Based on the macroscopic characteristics, clinical suspicions included squamous cell carcinoma, soft tissue sarcoma, and cutaneous TVT. Aspiration cytology and imprinting were performed, the microscopy of which revealed high cellularity composed of round to oval cells, presenting cytoplasm with characteristic punctiform clear vacuoles and an eccentric nucleus with coarse chromatin, findings compatible with TVT (Costa, 2021). The diagnosis was confirmed by histopathology of an incisional biopsy, which described the arrangement of cells in solid cords supported by sparse fibrovascular stroma.

The treatment protocol of choice was chemotherapy with Vincristine Sulfate at a dose of 0.025 mg/kg, intravenously, every 7 days. After the first cycle, the patient experienced complications such as vomiting and diffuse alopecia, and supportive therapy was instituted with Prednisolone 2 mg/kg, twice daily, for 5 days and metoclopramide. In total, eight chemotherapy sessions were necessary for treatment. Progressive reduction of the mass was observed from the third session onwards, evolving to complete macroscopic remission and healing of the affected área (Figure 2)

Figure 2: Dog after treatment with vincristine, complete remission of the tumor leaving only a scar.



Source: personal archive.

RESULTS AND DISCUSSION

Transmissible Venereal Tumor (TVT) is a neoplasm that primarily affects dogs. Transmission occurs mainly through direct contact between animals, most commonly during mating and through behaviors such as biting and licking. This highlights the importance of animal population control and responsible pet ownership, as the lack of public policies for birth control contributes to the spread of the disease, especially in areas with a large number of stray or semi-domesticated animals (Lima et al, 2011). In a survey in the municipality of São José dos Pinhais-PR, the implementation of spaying and neutering programs proved fundamental for the control of zoonoses and interspecific diseases (Catapan et al, 2014).

TVT (Transmissible Venereal Tumor) is a neoplasm that predominantly affects canines. Its transmission occurs primarily through direct contact, most frequently

during mating, as well as through behaviors such as licking and biting. This transmission dynamic highlights the critical need for population control and responsible pet ownership, since the absence of effective public policies for birth control favors the spread of the disease, especially in areas with a high density of stray or semi-domesticated animals (Lima et al, 2011). Corroborating this perspective, a survey conducted in the municipality of São José dos Pinhais-PR demonstrated that the implementation of castration programs is a fundamental strategy for the control of zoonoses and interspecific diseases (Catapan et al, 2014).

Clinical evaluation of TVT reveals a varied spectrum of signs, including erythematous nodules that can evolve into large masses, frequently associated with bloody discharge, foul odor, necrosis, and ulcerations. The location of the lesions varies according to sex; in males, involvement is more common in the penis and prepuce, while in females, the vulva is the most affected region (Huppés et al, 2014). In female dogs, the symptomatology can be confused with estrus or urinary tract infections, which reinforces the importance of an accurate diagnosis for the institution of effective treatment (Ferreira, 2023).

Therapeutic options include cryosurgery, radiotherapy, surgical excision, and chemotherapy. Among these, Vincristine Sulfate is considered the gold standard, presenting proven efficacy and reduced side effects (Araújo and Gomes, 2022). However, rigorous monitoring during treatment is essential to minimize risks and ensure efficacy, since some animals may develop resistance or present adverse effects, such as perivascular irritation and myelosuppression (Lima et al, 2011).

In the reported case, a male mixed-breed dog was diagnosed with cutaneous TVT in the thoracic region. The chosen therapeutic protocol was intensive chemotherapy with Vincristine, which resulted in the gradual remission of the tumor after eight sessions (Toledo and Moreira, 2018). During treatment, the patient experienced side effects such as alopecia and vomiting, which were controlled with the use of prednisolone and metoclopramide, respectively. Despite the occurrence of mild anemia, the animal responded favorably to therapy, showing satisfactory recovery (Lima et al, 2011). These results highlight the effectiveness of chemotherapy with Vincristine in the treatment of cutaneous TVT, as well as the importance of

careful monitoring of side effects (Costa, 2021). The positive outcome of the case underscores the relevance of early diagnosis and appropriate therapeutic management for the effective management of this neoplasm (Huppés et al, 2014).

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