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Injectable homeopathy in the treatment of canine transmissible venereal tumor: case report

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Abstract. Transmissible Venereal Tumor (TVT) is a clonal infectious neoplasm exclusive to the canine species, characterized by horizontal transmission through the direct implantation of viable tumor cells. Conventional treatment is primarily based on antineoplastic chemotherapy, with vincristine being the drug of choice because of its high clinical response and tumor regression rates. However, complementary therapeutic approaches have increasingly been considered in clinical practice, particularly when the standard chemotherapy protocol is contraindicated or not feasible. In such cases, integrative strategies may be considered as therapeutic support to promote immunomodulation, symptom control, and improved quality of life. This article reports the case of a four-year-old intact female Pinscher dog presenting with a reddish, exophytic vulvar lesion that was cytologically diagnosed as transmissible venereal tumor. Treatment consisted of injectable *Viscum album* D3 and *Thuja occidentalis* D30, followed by a change to *Thuja occidentalis* D9 during subsequent treatment, selected according to the principle of anatomopathological similarity. Both homeopathic medicines were administered subcutaneously, initially in combination on a daily basis and subsequently on alternate days according to the patient's clinical evolution. After approximately five months of follow-up, progressive regression of the lesion was observed, culminating in complete clinical remission and a final cytological examination negative for neoplastic cells. This case highlights the potential of injectable homeopathic therapy as a feasible and safe therapeutic alternative for the management of canine transmissible venereal tumor, particularly in situations in which conventional chemotherapy is contraindicated or cannot be performed.

Keywords: Complementary therapy, homeopathy, *Thuja occidentalis,* TVT, *Viscum album.*

Homeopatia injetável no tratamento de tumor venéreo transmissível: relato de caso

Resumo. O Tumor Venéreo Transmissível (TVT) é uma neoplasia infecciosa de natureza clonal, restrita à espécie canina, caracterizada pela transmissão horizontal por meio da implantação direta de células tumorais viáveis. A terapêutica convencional baseia-se principalmente na quimioterapia antineoplásica, sendo a vincristina o fármaco de eleição devido às suas elevadas taxas de resposta clínica e regressão tumoral. Entretanto, abordagens terapêuticas complementares têm sido progressivamente consideradas na prática clínica, sobretudo em situações nas quais o protocolo quimioterápico padrão é contraindicado ou inviável. Nesses contextos, estratégias integrativas podem ser empregadas como suporte terapêutico, visando à imuno modulação, ao controle dos sinais clínicos e à melhoria da qualidade de vida. O objetivo deste artigo foi relatar o caso de uma cadela da raça Pinscher, não castrada, com quatro anos de idade, apresentando lesão

exofítica avermelhada na região vulvar, com diagnóstico citológico compatível com TVT. O tratamento consistiu na administração injetável de *Viscum album* D3 e *Thuja occidentalis* D30, com posterior substituição da diluição de *Thuja occidentalis* por D9, selecionados com base no princípio da similitude anatomopatológica. Ambos os medicamentos foram administrados por via subcutânea, inicialmente em associação e diariamente, com posterior ajuste para aplicações em dias alternados, de acordo com a evolução clínica da paciente. Após aproximadamente cinco meses de acompanhamento, observou-se regressão progressiva da lesão, culminando em remissão clínica completa e exame citológico final negativo para células neoplásicas. Este caso evidencia o potencial da homeopatia injetável como alternativa terapêutica viável e segura para o tratamento do TVT canino, especialmente em situações nas quais o uso da quimioterapia convencional é contraindicado ou inviável.

Palavras-chave: Homeopatia, terapia complementar, *Thuja occidentalis,* TVT, *Viscum álbum.*

Introduction

Canine Transmissible Venereal Tumor (TVT), also known as Sticker's tumor, is a clonal round-cell neoplasm unique to the canine species, characterized by horizontal transmission through the natural transplantation of viable tumor cells between individuals (Birhan & Chanie, 2015; Costa et al., 2022, 2023; Pimentel et al., 2025; Regiani & Vasconcellos, 2018; Vail et al., 2019; Withrow et al., 2020).

Unlike most neoplasms, TVT behaves as a transmissible cellular allograft and is spread primarily during coitus. However, tumor cell transfer may also occur through licking, biting, sniffing, or direct contact between mucosal surfaces and damaged tissues, explaining the occurrence of extragenital forms, including cutaneous, oral, and nasal lesions (Amorim et al., 2024; Vail et al., 2019; Withrow et al., 2020).

The disease occurs most frequently in young, sexually intact, free-roaming dogs or in dogs with unrestricted outdoor access. It is considered endemic in tropical and subtropical regions, where canine population density is high and reproductive control is limited (Amorim et al., 2024a; Pimentel et al., 2025). Clinically, TVT is characterized by a friable, highly vascularized, exophytic mass with a cauliflower-like appearance, predominantly affecting the external genitalia. The most common clinical signs include intermittent bleeding, serosanguineous discharge, and local discomfort (Amorim et al., 2024a, 2024b). Diagnosis is routinely established by fine-needle aspiration cytology (FNAC), the diagnostic method of choice because of its rapidity, low cost, and high diagnostic accuracy. Cytological examination typically reveals a population of round cells with characteristic cytoplasmic vacuolation (Berndt et al., 2016; Brandão et al., 2002; Costa, 2008; Pimentel et al., 2025; Santos et al., 2008; Vail et al., 2019).

Chemotherapy with vincristine sulfate remains the treatment of choice, achieving high rates of complete remission. Nevertheless, despite its well-established efficacy, this protocol may be associated with significant adverse effects, including myelosuppression and gastrointestinal toxicity, as well as limitations related to tumor resistance, an increasingly recognized challenge in veterinary oncology (Brandão et al., 2002; Pimentel et al., 2025; Santos et al., 2008; Silva et al., 2025). These limitations, together with specific clinical contraindications, have encouraged the investigation of complementary and integrative therapeutic approaches in veterinary oncology (Vail et al., 2019; Withrow et al., 2020).

Within this context, integrative veterinary medicine has proposed the use of evidence-informed adjunctive therapies. *Viscum album* has attracted considerable interest because of its immunomodulatory, cytotoxic, and apoptosis-inducing properties (Biegel et al., 2011; Lucena Júnior et al., 2021; Valle, 2019; Valle & Valle, 2025). Systematic reviews and experimental studies have demonstrated antiproliferative and immunomodulatory effects in oncological models, including canine tumor cell lines, suggesting its potential as a complementary therapeutic option (Biegel et al., 2022, 2023; Vaz et al., 2024). Clinical reports have further indicated that its combination with conventional treatment protocols may contribute to tumor volume reduction and improvement of the patient's overall clinical condition (Biegel et al., 2022; Fonseca et al., 2026; Kienle & Kiene, 2010; Klingemann, 2023; Stein & Kummer, 2012; Valle et al., 2024; Valle & Valle, 2025).

Similarly, veterinary homeopathy is based on individualized treatment and the principle of similitude, aiming to stimulate the organism's intrinsic self-regulatory mechanisms. *Thuja occidentalis* has traditionally been described in homeopathic literature as a remedy with a particular affinity for proliferative, verrucous, and vegetative lesions, especially those affecting the genital region (Zwemke, 2010). More recent studies investigating its phytochemical composition have reported immunomodulatory and antitumor properties, including the ability to induce apoptosis and modulate cellular immune responses (Caruntu et al., 2020). Although these findings are derived predominantly from experimental studies, they provide biological plausibility for the favorable clinical outcome achieved with the injectable protocol described in the present study.

Therefore, the combination of *Viscum album* and *Thuja occidentalis* represents an integrative therapeutic strategy that combines complementary mechanisms of action, including direct immunomodulation and stimulation of the host's overall regulatory response, applied in a careful and individualized manner. The present study aims to describe a case of canine transmissible venereal tumor treated using this combined approach and to discuss the observed clinical outcome in light of the current scientific literature.

Case report

In March 2025, a four-year-old intact female Pinscher dog weighing 3.2 kg was presented to the Pet Late e Mia Veterinary Clinic, located in Pontal, São Paulo, Brazil. According to the owner, the dog had recently developed a vulvar lesion associated with intermittent bloody discharge. The owner also reported that the dog had unrestricted outdoor access without constant supervision and no history of significant systemic disease or previous long-term medical treatment. During the anamnesis, no behavioral changes, anorexia, vomiting, or diarrhea were reported.

On general physical examination, the patient was alert, responsive, and in good body condition. The mucous membranes were pink, capillary refill time was within normal limits, and the heart and respiratory rates were within the physiological ranges for the species and breed. Abdominal palpation elicited no pain, and gait evaluation revealed no locomotor abnormalities.

A focused examination of the external genitalia revealed an exophytic nodular mass in the vulvar region with an irregular, friable, papillomatous, cauliflower-like appearance. The lesion exhibited marked local hyperemia and mild bleeding upon manipulation. These gross findings were consistent with a round-cell neoplasm, and canine transmissible venereal tumor (TVT) was considered the primary clinical diagnosis based on the patient's history and the macroscopic appearance of the lesion.

As an initial therapeutic approach while awaiting definitive diagnosis, meloxicam was prescribed to reduce local inflammation and discomfort. The drug was administered orally at a dose of 0.25 mg (half a tablet), twice daily (BID), for five days. This nonsteroidal anti-inflammatory drug (NSAID) was intended to provide analgesia and control the inflammatory process associated with the proliferative lesion, thereby improving the patient's comfort.

To confirm the diagnosis, fine-needle aspiration cytology (FNAC) of the vulvar mass was performed. The collected material was smeared onto glass slides and submitted for cytopathological evaluation. Cytological examination was requested to characterize the cellular morphology of the lesion and establish a definitive diagnosis, thereby providing a reliable basis for subsequent therapeutic decision-making.

Results

Initial cytological evaluation of the vulvar lesion revealed a cell population consistent with canine transmissible venereal tumor (TVT), characterized by round cells with a moderate amount of cytoplasm, prominent cytoplasmic vacuolation, centrally to eccentrically located nuclei, and coarse chromatin, confirming the initial clinical diagnosis.

Following diagnostic confirmation, an injectable homeopathic treatment protocol was initiated using *Viscum album* D3 (InjectCenter®, Brazil) and *Thuja occidentalis* D30 (InjectCenter®, Brazil). Both

preparations were administered subcutaneously at a dose of one ampoule (1.1 mL per animal) of each preparation, mixed in the same syringe, once daily (SID), for 60 consecutive days.

During the biweekly clinical evaluations, a gradual reduction in tumor volume became evident, accompanied by decreased local bleeding and progressive improvement in the gross appearance of the lesion. However, fine-needle aspiration cytology (FNAC) performed in April 2025 still demonstrated neoplastic cells consistent with TVT, indicating persistent disease, although with lower cellularity than observed in the initial examination.

In view of the partial clinical response, the treatment protocol was modified. The patient subsequently received injectable *Viscum album* D3 combined with *Thuja occidentalis* D9, administered subcutaneously at a dose of 1.1 mL of each preparation, mixed in the same syringe, on alternate days for an additional 30 days.

Following this therapeutic adjustment, marked reduction of the tumor mass was observed, with progressive regression of the exophytic lesion and complete cessation of spontaneous bleeding. Given the favorable clinical response, the same treatment regimen was maintained for an additional 60 days, resulting in a total treatment duration of 150 days.

Approximately five months after the initiation of therapy, complete clinical regression of the vulvar lesion was achieved. Final cytological evaluation revealed no neoplastic cells, confirming complete cytological remission of the disease.

Following clinical remission, the patient was discharged from veterinary care. Elective ovariohysterectomy was recommended, together with semiannual clinical follow-up. However, after the final treatment session and hospital discharge, the owner did not return for follow-up evaluations, and it has not been possible to confirm whether the ovariohysterectomy was performed.

Discussion

Canine Transmissible Venereal Tumor (TVT) is recognized as a clonal round-cell neoplasm with a high capacity for horizontal transmission, primarily occurring through direct contact between mucosal surfaces during coitus (Birhan & Chanie, 2015; Liao et al., 2003; Regiani & Vasconcellos, 2018; Sreekumar et al., 2015). Its higher prevalence in sexually intact dogs with unrestricted outdoor access, as observed in the present case, has been extensively documented in the literature, particularly in tropical and subtropical regions (Amorim et al., 2024; Berndt et al., 2016; Costa, 2008; Huppes et al., 2014; Pimentel et al., 2025). Likewise, the classical clinical presentation – an exophytic, friable, hyperemic, cauliflower-like proliferative mass accompanied by sanguineous discharge – was consistent with previous reports.

Fine-needle aspiration cytology (FNAC) remains the diagnostic method of choice because of its high sensitivity and specificity for identifying the characteristic cytomorphological features of TVT, including round cells with moderately vacuolated cytoplasm and eccentrically located nuclei transmissible venereal tumour (Barbhuiya et al., 2014; Ghisleni et al., 2006; Pimentel et al., 2025; Pires et al., 2022). Beyond its diagnostic value, FNAC is also an effective tool for therapeutic monitoring, allowing objective assessment of treatment response throughout follow-up, as demonstrated in the present case.

Vincristine sulfate chemotherapy is considered the standard treatment for TVT and is associated with high rates of complete remission (Amorim et al., 2024; Otter et al., 2015; Tella et al., 2004). However, adverse effects such as myelosuppression and gastrointestinal toxicity, together with specific clinical contraindications or the development of chemotherapeutic resistance, have encouraged investigation of complementary and integrative therapeutic approaches (Berndt et al., 2016; Drumond et al., 2013; Lapa et al., 2012; Pimentel et al., 2025; Sreekumar et al., 2015). In this context, integrative veterinary medicine, including homeopathy, has been proposed as a complementary or alternative therapeutic strategy in selected clinical situations (Valle, 2019).

Among the homeopathic medicines used in veterinary practice, *Thuja occidentalis* has long been recognized in the homeopathic literature for its affinity for proliferative and verrucous lesions affecting mucosal tissues (Zwemke, 2010). More recent experimental studies and review articles have described

immunomodulatory and antitumor activities attributed to the plant's bioactive compounds, including stimulation of natural killer (NK) cell activity, modulation of cytokine production, and induction of apoptosis in tumor cell lines (Caruntu et al., 2020). Although these findings are derived predominantly from experimental models, they provide biological plausibility for further investigation of its potential role in integrative veterinary oncology.

Likewise, *Viscum album* has been extensively investigated in comparative oncology. Its bioactive constituents, particularly mistletoe lectins and viscotoxins, have demonstrated cytotoxic activity, induction of apoptosis, and modulation of immune responses in experimental studies (Biegel et al., 2022, 2023). In veterinary medicine, Stein & Kummer (2012) reported tumor regression in dogs with TVT treated with *Viscum album* in combination with conventional chemotherapy, describing reduced tumor volume and clinical improvement. Similarly, Valle (2019) described a favorable clinical outcome in a dog with TVT treated with a homeopathic protocol that included *Thuja occidentalis*, supporting the need for further investigation of individualized integrative therapeutic approaches.

In the present case, the therapeutic response was gradual. Initial follow-up cytology remained positive for neoplastic cells despite evident clinical improvement, followed by complete clinical regression and negative cytological findings after five months of treatment. A similar pattern of progressive regression was described by Valle (2019) in a dog with TVT treated using an individualized integrative protocol. The adjustment in homeopathic potency observed in the present case – from *Thuja occidentalis* D30 to D9 – is consistent with the principles of individualized homeopathic practice, in which therapeutic interventions are modified according to the patient's clinical evolution and continuous monitoring (Caruntu et al., 2020).

Although published reports suggest potential therapeutic benefits, it should be emphasized that most of the available evidence is derived from experimental studies and isolated case reports, and there remains a lack of well-designed controlled clinical trials involving larger populations. Therefore, the favorable clinical outcome observed in the present case should be interpreted cautiously and cannot be generalized. Nevertheless, the combination of complete clinical regression and negative follow-up cytology provides a basis for further clinical investigation of this therapeutic approach.

Although classical veterinary oncology references (Vail et al., 2019; Withrow et al., 2020) recommend elective ovariohysterectomy as an adjunctive measure in the management of genital neoplasms, complete clinical remission in the present case was achieved before surgical sterilization was performed. The patient was discharged after complete clinical remission and negative cytological findings. Because the owner did not return for the recommended follow-up evaluations, it was not possible to determine whether elective ovariohysterectomy was subsequently performed or to assess the long-term outcome. Consequently, the clinical observations reported here should be interpreted within the inherent limitations of a single case report.

This case demonstrates that an integrative therapeutic approach combining injectable *Viscum album* and *Thuja occidentalis* was associated with complete clinical regression and cytological remission in a dog diagnosed with canine transmissible venereal tumor. The favorable clinical evolution observed throughout treatment, together with serial cytological monitoring, indicates that this protocol deserves further investigation as a potential therapeutic approach in carefully selected clinical situations, particularly when conventional chemotherapy is contraindicated, clinically unsuitable, or declined by the owner.

Moreover, this report contributes to the growing body of literature on integrative veterinary medicine by highlighting the importance of individualized therapeutic planning, continuous diagnostic monitoring, and the careful integration of complementary and conventional treatment strategies. The systematic documentation of similar cases may encourage future clinical investigations and contribute to a better understanding of the role of complementary therapies in contemporary veterinary oncology.

Conclusion

The present case demonstrates that treatment with injectable *Viscum album* and *Thuja occidentalis* was associated with complete clinical regression and cytological remission in a dog with canine transmissible venereal tumor. Although the favorable outcome observed in this patient, together with

previously published case reports, suggests that this therapeutic approach warrants further investigation, no conclusions regarding efficacy can be drawn from an isolated clinical case. Controlled clinical trials with adequate sample sizes are needed to evaluate the safety, efficacy, and possible mechanisms of action of this protocol in dogs with TVT.

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