

Interpretive Summary

Transmissible Venereal Tumor in a Dog

Case Description: A two year old female mixed breed terrier weighing 15.5 kg was brought from Cuba immediately after whelping a litter of four dead pups. Four weeks after arrival, she developed vulvar swelling and a serosanguinous vaginal discharge. This persisted for six weeks then abruptly stopped. The vulvar swelling resumed two weeks later prompting an ovariohysterectomy. Over the next four weeks the vulvar swelling became more pronounced and a mucoid vaginal discharge appeared. Antibiotics (enrofloxacin) were ineffective. Blood and urine results were within normal limits and a vaginal bacterial culture identified a mixed population of *Pasteurella multocida*, *Bacteroides fragilis* and *Peptostreptococcus anaerobius*. No antibiotic resistance was demonstrated on sensitivity testing.

Marked thickening developed between the vulva and the anus. A 1 cm³ proliferation of dry, pink, irregular tissue appeared on the surface of the left labia. Vaginal cytology identified round cells with a high N/C ratio, chromatin clumping and multiple nucleoli. There were numerous mitotic figures present. Abdominal palpation detected a large firm structure in the caudal abdomen and ultrasound confirmed the presence of a 12 x 5 x 5cm hyperechoic, irregular tubular structure. Exploratory laparotomy identified a pink, firm, irregular lumpy mass in the region of the uterine stump. An incisional biopsy released thick mucosanguinous fluid. Histopathology with toluidine blue staining confirmed transmissible venereal tumor (TVT). Vincristine sulfate was administered weekly for seven treatments. Concurrent CBC evaluations revealed no marrow suppression. Post-treatment ultrasound evaluation and palpation indicated complete resolution.

Outcome: Response was a quick and complete. The bitch has remained tumor free for two years.

Implications/Applications: TVT represents an allogenic transplantation of tumor cells into the host instead of the more common neoplastic transformation of host cells. The tumor cells have a lower chromosome count (59 +/- 5) and can affect any areas they contact or, in rare circumstances, metastasize from their primary site. In experimental models, TVT has demonstrated spontaneous regression within 2-6 months, but this has not been documented in naturally occurring cases. The country of origin, documented history of coitus and the failure of ovariohysterectomy to resolve the condition were important pieces of information. Vaginal cytology implicated a round cell tumor. Toluidine blue stain differentiated TVT from mast cell tumor. The alarming progression of the tumor was only surpassed by the rapid and complete response to chemotherapy.

References:

Johnston SD, Root Kustritz MV, Olson PNS. Disorders of the Canine Vagina, Vestibule and Vulva. In:Johnston SD, Root Kustritz MV, Olson PNS, ed. *Canine and Feline Theriogenology*.Philadelphia: WB Saunders Co, 2001;225-242