

EVALUATION OF MALIGNANCY CRITERIA THROUGH CYTOLOGICAL EXAMINATION IN CANINE MAMMARY TUMORS

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Mammary tumors are the most common neoplasm in bitches. Almost half of them are malignant, their early diagnosis being extremely valuable and must always be corroborated with data obtained from the anamnesis and imaging examination. The aim of this paper is to identify the significant criteria of malignancy in mammary tumors and to provide a useful cytological diagnostic guide for clinicians and everyone approaching canine mammary gland oncology from a clinical pathology perspective.

Eleven mixed breed bitches were included in this study, aged between 7 and 13 years. On clinical examination, one or more mammary masses were observed. Cytological smears were made by imprint and/or scraping from both the surgically removed mass and the satellite lymph node, and stained with May Grunwald-Giemsa method. The presence and frequency of general and nuclear malignancy criteria was assessed for each case. General criteria of malignancy included hypercellularity, monomorphism represented by epithelial and/or myoepithelial cells, cytoplasmic basophilia and anisocytosis. Nuclear criteria of malignancy included anisokaryosis, high and variable N/C ratio, karyomegaly, prominent and variable in number and size nucleoli, coarse chromatin and atypical mitoses. Based on these criteria, a cytological diagnosis of malignant tumor was made.

In nine of the eleven total cases, the cytological examination was relevant and in the two remaining cases the smears were inconclusive for diagnosis, due to presence of cellular debris and severe cell necrosis. The highest incidence of mammary tumors was recorded in intact bitches (9/11), only two being neutered. Regarding tumor location, M4 was most frequently affected, and M1 the least affected. The most common criteria of malignancy were the high N:C ratio, anisocytosis, anisokaryosis, prominent nucleoli and coarse chromatin; they were most numerous and evident in secretory-type mammary tumors.

Cytological examination can be very useful in mammary pathology in bitches, having the advantage of a simple, fast and cheap technique. Knowing and recognizing the cytological criteria of malignancy in canine mammary masses is essential for establishing a cytopathological diagnosis. The correct identification of the cytological criteria of malignancy, both general and nuclear, can guide the early therapeutic approach of the patient after surgery.

Key words: *cytological examination, dog, malignancy criteria, mammary tumors.*