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CHARACTERIZATION OF CANINE MAMMARY TUMOURS USING B-MODE, COLOUR AND PULSED DOPPLER ULTRASONOGRAPHY

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INTRODUCTION

Mammary tumours are the most frequent neoplasias in non spayed female dogs. the gold standard to diagnose mammary neoplasia is excisional biopsy histopathology. This study intends to describe ultrasonographic appearance, to study vascularisation and vascular indices of mammary neoplasias in order to correlate tumour type with malignancy or histopathology.

MATERIALS AND METHODS

Seventy mammary masses from forty dogs with histologically confirmed malignant or benign mammary tumour, mammary hyperplasias/dysplasias, and mammary lipomas were included in the study. All ultrasound studies were performed with an 11 MHz linear transducer. B-mode, pulsed, colour or power Doppler ultrasonography was performed to describe the ultrasonographic appearance, categorize the vessel distribution and signal type, and calculate the vascular indices. All the sonographic findings were correlated with histological results. Histopathology was performed in the mammary excisional biopsies.

RESULTS

Tumour types were classified following the WHO criteria into malignant (complex carcinoma 25, tubulopapillary carcinoma 9, solid carcinoma 4, carcinoma in benign tumour 3), benign (adenoma –simplex 6, complex 6--, benign mixed tumour 9, duct papilloma 1), mammary lobular hyperplasia 2, duct ectasia 1) and mammary lipoma 4. Malignant tumours had higher volumes, had more irregular shapes and showed enhancement and anechoic areas than benign tumours. Most of the tumours, either benign or malignant were hypoechoic. Shadowing and mineralized focal areas were observed in a similar proportion. Central and mixed vascularisation was more frequent in malignant than in benign tumour. Among malignant, in the complex carcinoma vascular flow was not detected in 11/25. Malignant tumours showed a tendency to present lower minimum and higher maximum resistive index. the differences between them were higher in malignant tumours.

DISCUSSION/CONCLUSIONS

Although tendencies were observed, the ultrasonographic findings between malignant and benign mammary tumours were non statistically significant, and histopathology is required for the diagnosis.

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