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Immunohistochemical demonstration of p53 protein and metallothioneins in canine mammary tumours

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Mammary tumours in dogs are the most common tumours following skin tumours. The aim of this study was to investigate the accumulation of p53 protein and MT in malignant and benign mammary tumours in dog and to correlate them with the tumour type and grade. In the study, p53 protein and metallothioneins (MT) were investigated by immunohistochemistry in canine mammary tumours (n=50). These tumours [5 benign mixed tumours (BMT) and 45 malignant tumours whose 36 malignant mixed tumours (MMT) and 9 adenocarcinomas (AC)] mainly involved inguinal (n=18), caudal thoracic (n=11) and caudal abdominal (n=10) glands. Positive p53 protein immunolabelling of nucleus and or cytoplasm of glandular epithelial cells and more rarely of ductal epithelial cells were observed in all malignant tumours. Furthermore, a moderate to marked p53 staining was evidenced in 75% of MMT and in 44% of AC. Forty-four (98%) malignant tumours also exhibited metallothionein (MT) positive immunostaining of nucleus, cytoplasm or both. The MT positivity was moderate to intense in 82% of positive tumours (30 MMT and 6 AC). The p53 protein and MT expressions with a low to a moderate intensity were detected in 2 and 3 benign mixed tumours respectively and 2 of them simultaneously expressed the 2 markers. These results suggest that the subcellular accumulation of p53 protein and MT is associated with tumour malignancy and that positive MT and p53 protein benign tumours would evolve into malignant tumours.

Biography

Sevil Atalay Vural completed her PhD thesis (Comparison of Histopathological, Immunoperoxidase and Immunofloresan Methods in Diagnosis of Rabies Virus Infection in Dogs) degree from the Ankara University Faculty of Veterinary Medicine, Department of Pathology in 1997. She was assigned as Professor in 2008 and she is currently at this University. Her main research areas are nervous system and genital system disorders, immunohistochemical and molecular diagnosis including IS-PCR and ISH of tumours, apoptotical mechanism in different natural and experimental animal models. She has conducted and worked 21 scientific projects. Her articles over than 65 have been published in well known international journals. Also, she has presented over than 60 posters and oral presentations in national and international congress.

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