Muir-Torre-like syndrome in a dog

A. AYDOĞAN*, N. TOPLU1, E. DİKİÇİOĞLU ÇETİN2 AND N. METİN1

1Department of Pathology, Faculty of Veterinary Medicine, University of Adnan Menderes, 09016 Aydın, Turkey.
2Department of Pathology, Faculty of Medicine, University of Adnan Menderes, 09016 Aydın, Turkey.
*Corresponding author: aaydogan@adu.edu.tr

SUMMARY

The Muir-Torre Syndrome (MTS) in humans is characterized by the coexistence of at least one cutaneous tumour (sebaceous gland tumour or keratoacanthoma) together with at least one visceral malignant tumour and was not described in animal species. This report describes a case of a sebaceous carcinoma in the skin associated with a complex carcinoma of the mammary gland in a dog. Consequently, as in human medicine, this case can be considered as a MTS described in a dog for the first time.

Keywords: Muir-Torre Syndrome, sebaceous carcinoma, complex carcinoma, mammary gland, dog.

Case report

A 9 year old female terrier exhibiting subcutaneous nodules located on the scapulae area and 2 months later a tumour mass on the right cranial abdominal mammary gland was presented to the Department of Pathology, Faculty of Veterinary Medicine, University of Adnan Menderes, for histopathological diagnosis. A wide local excision around and beneath the subcutaneous nodules and total excision of the right cranial abdominal mammary gland were performed. The tumour tissues were collected and fixed in 10% formalin solution, processed routinely, 5 µm sectioned, and stained with haematoxylin and eosin (H&E).

White dermal nodules on the right scapulae area, measuring in average 0.2 x 0.1 cm² had no surrounding induration, no ulceration and were not vascularised. Histologically, these nodules were classed as well differentiated sebaceous carcinomas (figure 1). Within the tumours, irregular lobules of basaloid cells, with greatly variable sizes, located centrally and around this central area, the basaloid cells were differentiating into sebaceous cells. The tumour cells showed atypia and mitotic figures were prominent features. They were round to oval and greatly varied in size, possessed a prominent and hyperchromatic nucleus and a scant cytoplasm (figure 2). Intracytoplasmic lipid vacuoles were observed in some tumour cells.

The tumour mass of the right cranial abdominal mammary gland measured 13 x 5 x 4 cm³, weighed 65 g, exhibited a greyish-white colour and was soft to touch. The cut surface
of the mass was homogeneously and also greyish-white. Histologically, the tumour mass was diagnosed as a complex carcinoma with both epithelial and myoepithelial proliferations. The luminal epithelium cells were generally arranged in solid fashion and in some areas they were organized in tubular structures. A marked cell atypia was present (figure 3). The tumour cells were round to oval and varied in size. Vesicular, hyperchromatic or hypochromatic nuclei were observed associated with a scant cytoplasm. Mitotic figures were uncommon. In some areas in the tumour stroma, mononuclear cell infiltrations (mainly of macrophages which have phagocytised erythrocytes) and massive haemorrhages were also found. The diagnosis of complex carcinoma was confirmed by immunohistochemistry (avidin biotin peroxidase complex method using primary antibody against α smooth muscle actin), which demonstrated proliferations of myoepithelial cells.

Discussion

In the reported cases of visceral malignancies in MTS, 50% are colorectal carcinomas and 21% are genitourinary neoplasms. The third most prevalent tumour type (10%) was breast carcinoma in humans [4]. In MTS, sebaceous neoplasms appeared after the visceral malignancy in 59% of cases, and were detected before or simultaneously in 41% of cases [12]. The skin lesions may be the first sign of this syndrome, but cutaneous signs often occur after the diagnosis of at least the first visceral malignancy [16]. In the present case, the cutaneous signs were observed before the diagnosis of the mammary gland tumour which was detected 2 months later.

In humans, occurrence of any sebaceous tumour (such as sebaceous adenoma, sebaceous epithelioma, sebaceous carcinoma or keratoacanthoma) and at least one visceral malignant tumour are required to make reliable diagnosis of MTS [2, 13, 14]. In conclusion, sebaceous carcinoma of the skin and complex carcinoma of the mammary gland were simultaneously described in the same dog and the present case can be considered as a Muir-Torre syndrome according to the criteria in human medicine. According to the author’s knowledge, no other case associating both sebaceous cutaneous and visceral malignant tumours in the same dog has been previously reported.

References


