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Mammary Adenocarcinoma in Lioness

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A sample is taken from lioness which was brought for postmortem at the college of veterinary science tirupati (AP) India. The right mammary gland was extremely enlarged and was completely invaded by coalescent yellowish granular masses and whitish connective tissue. Histopathology of the organs revealed proliferation of round or polyhydric mild anaplastic cells, with round hyper chromatic nuclei, evident nucleoli and eosinophilic cytoplasm and with moderate anaplasia. The cells formed solid masses surrounded by fine connective stroma. Mitotic figures were conspicuous and in many areas the tumor cells invaded the blood and lymphatic vessels. There were metastatic changes in the retro-mammary lymph node and other organs of the pelvic, abdominal or thoracic cavities with similar characteristics of primary tumor.

Key words: Anaplastic cells, Mammary gland, Metastasis.

Mammary gland neoplasms are extremely rare in domestic, but in wild animals due to lack of accurate prevalence statistics they are rarely reported. In wild animals, only few tumors have been reported like scirrhous solid carcinomas which have been extremely invasive locally, and all have widespread metastasis. Mammary tumors, at least in dogs and to a certain extent in cats, have many similarities to breast neoplasms in women. In bitches, the incidence of mammary tumors is estimated at 50% of all neoplasms in this species, of which approximately 60% are benign and 40% malignant (Brearley, 1989).Incidence is higher in certain breeds, such as: Poodle, English Spaniel, Brittany spaniel, English setter (Bostock, 1986). So far wild animals like lioness no reports about the incidence of mammary tumor are available. Diagnosis is established based on clinical examination, supplemented by blood and serological profile. Fine needle aspiration for cytologic examination is not recommended, since it cannot differentiate with certainty a benign from a malignant tumor (O'Keefe, 1995). This study was conducted in a lioness brought for postmortem at the college of veterinary science tirupati (AP) india . The right mammary gland was extremely enlarged. Tissue pieces from mammary gland and all other affected organs were collected and fixed in 10% formalin. After fixation, tissues were processed by routine histological technique, sectioned at 3-5ìm, and stained with hematoxylin and eosin. To confirm nature of the tumor Immunohistochemistry was also done.

The right mammary gland was extremely enlarged and showed fistulous tracts that opened at the ulcerated skin. The gland was completely invaded by coalescent, beige to yellowish granular masses and whitish connective tissue. Tissue pieces of the mammary gland affected and of other organs were collected and fixed in 10% formalin. After fixation, tissue pieces were routinely processed for embedding in paraffin, sectioned at 3-5ìm, and stained with hematoxylin and eosin (HE) and immunohistochemistry was also performed to confirm the nature of tumor.

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Histopathology revealed proliferation of round or polyhedral mild anaplastic cells, with round hyperchromatic nuclei, eosinophilic cytoplasm and moderate anaplasia (Solid masses of the cells surrounded by fine connective stroma, areas of coagulative necrosis were observed in the present study (Fig 1). Loss of adhesion of the cells degenerated epithelial cells and neutrophils were present. Hemorrhagic foci, macrophages filled with hemosiderin, Mitotic figures were conspicuous in present study. Tumour cells invaded the lymphatic vessels in some places. Mineralization foci were observed in necrotic areas. Immunohistochemistry revealed the presence of cytokeratin (Fig 2) which confirm the epithelial origin of the tumor. Accurate prevalence statistics are not available for zoo felid or canid populations because complete necropsies are not always performed and centralized databases are just now being developed. Most mammary tumors in zoo felids are aggressive cancers, mimicking their domestic counterparts (Harrenstien *et al*., 1996 and McAloose *et al*., 2007). Mammary cancers also occur in zoo canids, mustelids (Lair *et al*.,2002), ursids, viverrids (Effron *et al*., 1977), and carnivorous marsupials (Canfield *et al*., 1990, Effron *et al*., 1977).Data from most free-ranging carnivores is even more limited because deceased animals are only rarely found and necropsied .In domestic and zoo cats, morphologic patterns of mammary cancer are similar to breast cancer in women. Most cancers have some areas of tubule-papillary growth with formation of solid, comedone and cribriform patterns and both intraductal and infiltrating components (Munson and Moresco, 2007). Mineralization foci observed in necrotic areas of this neoplasm are frequently observed in intraductular carcinoma inhuman beings and mare (Kumar. 2005).

Fig. 1. Neoplastic proliferation with central coagulative necrosis. H&E, obj. 25x

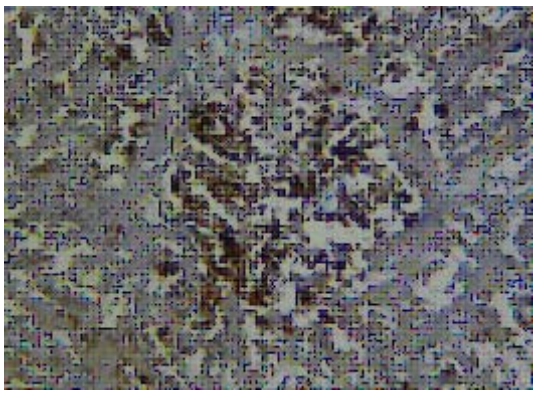

Fig. 2. Immunohistochemistry. Cytokeratin confirming the epithelial origin

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