A Case Report of Mammary Carcinoma in Royal Bengal Tiger

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ABSTRACT

Background: In recent years increased frequency of mammary gland neoplasms have been reported in captive wild felids. Basing on published data, in tigers mammary gland carcinoma always seems to be highly invasive and metastatic. The present report describes a case of Mammary carcinoma with metastasis to lungs in a 20 year old Royal Bengal Tiger.

Methods: Detailed necropsy examination of Royal Bengal Tiger revealed the subcutaneous massive lesion in the lower abdominal region. Representative tissue samples were collected in 10% formalin for histopathology examination.

Result: Histopathological examination revealed small clusters of neoplastic epithelial cells. Micropapillae lacking fibrovascular cores extending into clear spaces. Cells exhibit moderate anisokaryosis and anisocytosis and variable numbers of mitoses with proliferation of fibrous connective tissue. Microscopic examination of lungs revealed the congestion, edema with focal proliferative neoplastic epithelial cells arranged in small clusters were scattered in the alveolar walls and spaces, indicative of metastasis. These histological features were suggestive of Mammary carcinoma with micropapillary pattern.

Key words: Histopathology, Mammary carcinoma, Metastasis, Micro papillary pattern, Royal Bengal Tiger.

INTRODUCTION

Mammary gland neoplasms have been reported in captive wild felids with increased frequency (Chandra and Laughlin, 1975; Frazier *et al*., 1994; Hruban *et al*., 1988). In captive felids incidence of mammary carcinomas seems to be higher in the tigers even though mammary gland tumors are well represented among these felids (Harrenstein *et al*., 1996; Owston *et al*., 2008). In cats, mammary tumors are mostly malignant similarly mammary gland carcinoma seems always to be a highly invasive and metastatic, in tigers (Moulton, 1990; Harrenstein *et al*., 1996; Owston *et al*., 2008). Invasive Mammary Carcinomas are defined as carcinomas composed of small papillary structures without stroma or small clusters of tumor cells lying within an artifactually created clear space simulating vascular channels (Kim *et al*., 2005). The present report describes the histopathological findings of Royal Bengal Tiger died due to Mammary carcinoma metastasized to lungs.

MATERIALS AND METHODS

A detailed post mortem examination was conducted on 20 year old Royal Bengal Tiger from Indira Gandhi Zoological Park, Vishakapatnam. Representative tissue samples from the mammary gland and lung were fixed in 10% formalin for histopathological examination. The tissue samples were processed by paraffin-embedding technique. Sections of 4 ìm were obtained and stained with routine Haematoxylin and Eosin (Bancroft, 1996).

RESULTS AND DISCUSSION

A detailed necropsy revealed subcutaneous massive lesion in the lower abdominal region (Fig 1). The lesion is white to yellow-coloured, firm and poorly demarcated from the surrounding mammary tissue (Fig 2). In lung, diffuse consolidated areas observed throughout the lobes (Fig 3) Microscopic examination of the section revealed neoplastic cells arranged in small clusters, micropapillae lacking fibrovascular cores extending into clear spaces. Cells exhibit moderate anisokaryosis and anisocytosis and variable numbers of mitoses with proliferation of fibrous connective tissue. The epithelium lining the papillae consisted of cuboidal to columnar cells round to ovoid hyper chromatic nuclei, increased nuclear-cytoplasmic ratio (Fig 4, 5). In the lung, focal proliferative neoplastic epithelial cells arranged in clusters were scattered in the alveolar walls and spaces (Fig 6, 7). Intra-alveolar and interstitial edema with congestion were evident. (Riccardo Finotello *et al*., 2011) described histological features of Mammary Carcinoma

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Fig 1: Subcutaneous massive lesion in the lower abdominal region.



Fig 2: Subcutaneous massive lesion in the lower abdominal region.



Fig 3: Lung: Diffuse consolidated areas observed throughout the lobes.

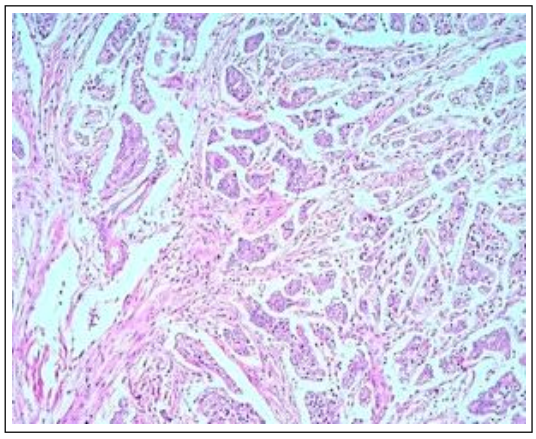


Fig 4: Mammary carcinoma: Neoplastic cells arranged in small clusters (100x).

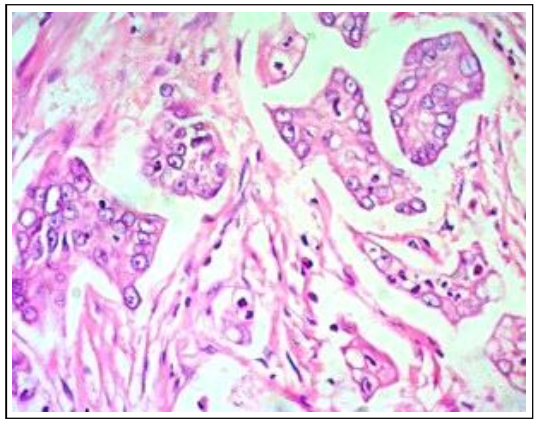


Fig 5: Mammary carcinoma: Neoplastic cells arranged in small clusters (400x).

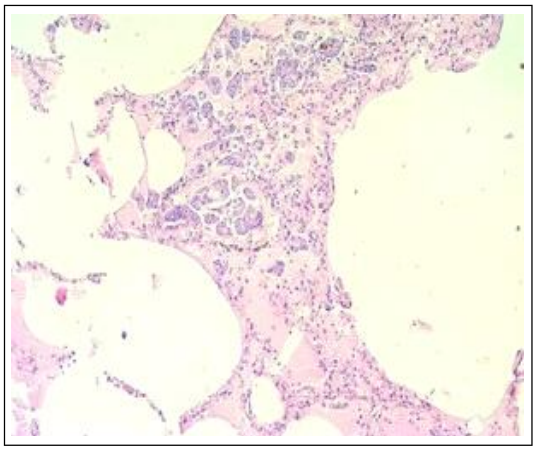


Fig 6: Lung: Neoplastic cells arranged in small clusters scattered in the alveolar wall (100x).

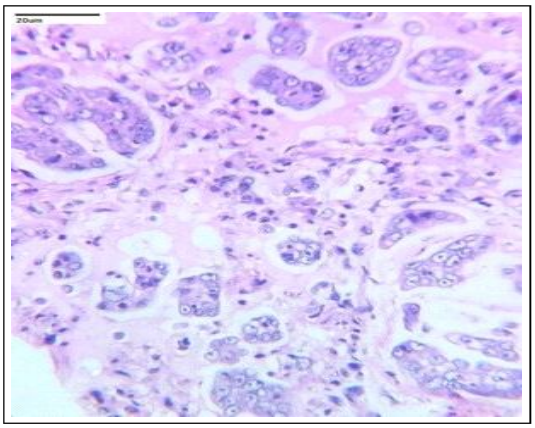


Fig 7: Lung: Neoplastic cells arranged in small clusters scattered in the alveolar wall (400x).

metastasized to lungs, liver and Spleen in a 14-yr-old female tiger. Munson and Moresco (2007) described, the morphologic patterns of mammary cancer of domestic and zoo cats are similar to breast cancer in women. Seixas *et al*. (2007) described the micropapillary invasive pattern, a distinct histologic pattern in 16 female cat tumors were associated with clinicopathologic features of high biologic aggressiveness and low survival rates. In present case micropapillary invasive pattern of mammary carcinoma metastasised to lungs caused the death of the tiger.

CONCLUSION

Based on the gross and histological findings the present case was diagnosed as Mammary carcinoma with Micro papillary pattern metastasized to lungs in Royal Bengal tiger.

Conflict of interest: None.

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