

SEBACEOUS CARCINOMA IN A DOG

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Received: 10.01.2017; Accepted: 23.05.2017

SUMMARY

An eight year male Mongrel dog was presented with history of multiple subcutaneous nodular growths in the thoracic, lumber and the neck region. Grossly, multifocal, firm, raised grayish white nodular lesions with size ranging from 3 to 6 cm were present in the lumber, thoracic and the neck area. Histopathologically, the tumour cells were characterised by a variable degree of sebaceous differentiation, cytoplasmic lipidization and cellular and nuclear pleomorphism suggested the tumour as sebaceous carcinoma.

Key words: Dog, sebaceous carcinoma, histopathology

Tumors and tumor-like conditions of sebaceous glands are common in dogs, infrequent in cats, and rare in other domestic animals. Sebaceous glands are distributed over the entire haired skin surface and accounts for the majority of hormone metabolism in the skin (Chen and Zouboulis, 2009). The sebaceous glands tumours constitute approximately 8% of all skin tumours in the canine (Scott and Anderson, 1991; Gross *et al.*, 2005). In dogs, the sebaceous gland tumours represent the third most common type of skin tumours, accounting for 21-35% of all cutaneous epithelial tumours (Scott and Anderson, 1990; Vail and Withrow, 1996) whereas sebaceous carcinomas are uncommon in dogs and cats and rare in other species. These tumours may occasionally exhibit a locally aggressive behavior and regional lymph node metastases or distant metastases (Scott and Anderson, 1990; Gross *et al.*, 2005; Bettini *et al.*, 2009). In dogs, the peak incidence is between 9 and 13 years of age. Sebaceous carcinomas arise primarily on the head and neck in dogs and on the head, thorax, and perineum in cats (Goldschmidt and Hendrick, 2002). The present case reports sebaceous carcinoma in an eight years old Mongrel dog.

An eight year old male Mongrel dog was presented at the Polyclinic Bhangrotu, District Mandi, Himachal Pradesh with a single growth on the medio-lateral portion of the shoulder and it was surgically treated at the Polyclinic considering it to be a case of transmissible venereal tumour. After about 3 months, the animal was again presented to the same clinic with history of multiple

subcutaneous nodular growths in the thoracic, lumber and the neck region each of which were again carefully excised surgically. The excised pieces of tissues fixed in 10% neutral buffered formalin were submitted to the Department of Veterinary Pathology, CSK HPKV, Palampur where the tissues were further processed by paraffin embedding technique, cut into 3-5 μ section and stained with haematoxylin and eosin (H&E) stain for histological studies.

Grossly, the nodular lesions were apparent in the lumber, thoracic and the neck area which were multifocal in distribution (8 to 10 in number) and appeared firm, raised and greyish-white in colour with size ranging from 3 to 6 cm (Fig. 1). The cut surface invariably revealed a whitish proliferated mass of tissue along with some necrosed dry area.

Histopathological examination revealed a malignant tumour characterised by cells with a variable degree of sebaceous differentiation (Fig. 2). Multiple small lobules of tumour cells largely of epithelial origin with a variable degree of cytoplasmic lipidization were seen separated by thin layers of connective tissue (Fig. 3). The tumour cells also revealed considerable nuclear and cellular pleomorphism, nuclear hyperchromasia and prominent nucleoli (Fig. 4). In addition to the individual cell necrosis, there were focal large areas of necrosis accompanied with haemorrhages at places. The number of mitotic figures was variable and atypical mitoses were evident at places.

In dogs, it has been suggested that the presence of mitoses in fully lipidized or intermediate cells warrants

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Fig 1. Grayish-white nodular growth approximately 4 cm in diameter over the lateral aspect of shoulder region

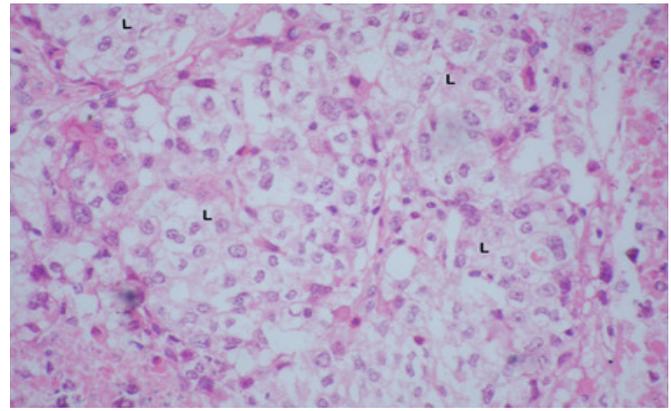


Fig 2. Small lobules of tumour cells (L) of sebaceous differentiation separated by thin layer of connective tissue (H&E×66)

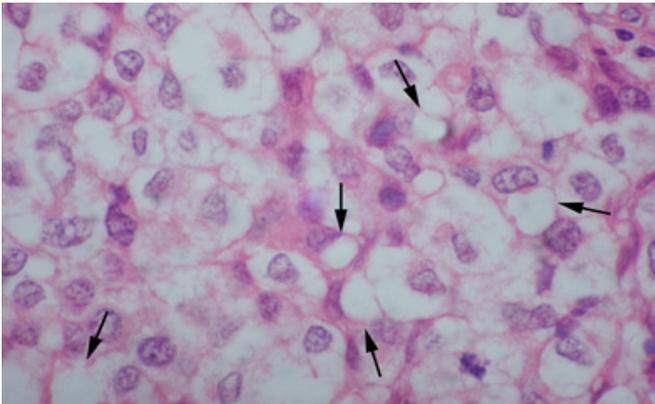


Fig 3. Tumour cells showing an increased cytoplasmic lipidization (arrows) (H&E×132)

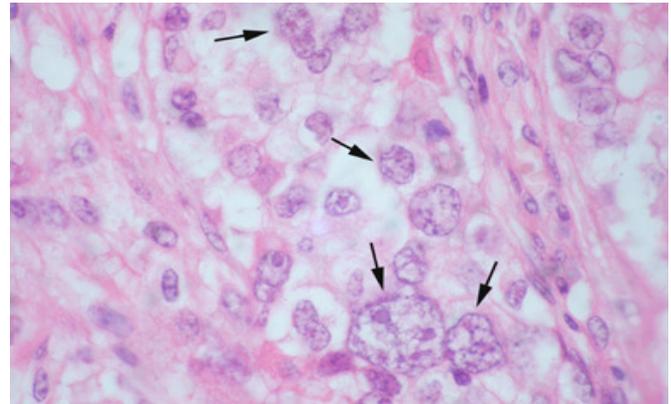


Fig 4. Tumour cells showing considerable cellular and nuclear pleomorphism (arrows) along with prominent nucleoli (H&E×132)

a diagnosis of epitheliomatous sebaceous carcinoma (Gross *et al.*, 2005). The tumor cells having intracytoplasmic lipid vacuoles were clearly evident in the tumour growth in the present study which also displayed a variable degree of pleomorphism. The nuclei were large and hyperchromatic with prominent nucleoli, and often highly pleomorphic. The excised sections of tumours of the sebaceous glands were divided into small lobules by a thin layer of connective tissue and in the range of white to pale yellow colour in conformity with previous report (Suckow *et al.*, 2002). The multilobulated appearance of the tumour allows its differentiation from a liposarcoma (Goldschmidt and Hendrick, 2002).

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