Scientific Report

A case report of canine cutaneous histiocytoma in Iran

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Summary

Canine cutaneous histiocytoma (CCH) is a benign skin growth found only in the dog. A three- year- old mixed Iranian female dog was referred to the Department of Clinical Sciences, School of Veterinary Medicine of Shiraz University with a mass at the lateral aspect of right thorax. The mass was removed surgically and sent to the Department of Pathobiology. After macroscopic and microscopic study of the mass, it was diagnosed as canine cutaneous histiocytoma.

Key words: Canine, Histiocytoma, Skin

Introduction

Canine cutaneous histiocytoma is a very common skin tumor of dogs, representing up to 10% of all canine cutaneous tumors (Morris and Dobson, 2001; Meuten, 2002). The majority occurs in dogs less than 4 years of age, but dog of any age can be affected (Marchal et al., 1995). Taylor et al., (1969) found the average annual incidence rate during a three year period to be 117 per 100000 dogs.

The tumor has a predilection for the head and especially the ear pinna, but may occur anywhere. The next most common site of tumor is the skin of the distal forelegs and forefeet. The remainder of the tumors are distributed on the neck, limbs, trunk and tail (Goldschmidt and Shofner, 1992). Tumor cells stain positively for alpha-anti trypsin protein and this is a helpful diagnostic in differentiating them from other cutaneous “round-cell” tumors of dogs, notably transmissible venereal sarcoma (TVS) (Greshwin et al., 1995). Some pathologist doubt that the tumor is a neoplasm and consider it to be a peculiar focal proliferative inflammatory lesion (Moulton, 1990). But recent studies have shown the tumor cell to have an immunophenotype of langerhans cells (Bender and Muller, 1989; Moore and Schrenzel, 1996). Contrary to previous reports (Mulligan, 1948), CCH is not an extraglandular form of transmissible venereal tumor.

Cytogenetic studies have showed that cells of histiocytoma have chromosomal make up identical to that of normal dogs, while those of transmissible venereal tumor show a consistent chromosomal abnormality (Makino, 1963; Jones et al., 1997). Both tumors also exhibit different biological and epidemiological characteristics (Moulton, 1990).

History, Operations and Results

A three-year-old mixed Iranian female dog was referred to School of Veterinary Medicine of Shiraz University with a mass at the right lateral aspect of thorax. The general condition of the dog was normal. Under general anesthesia, the mass was removed entirely. It was limited just to the skin, no attachment to deep structures was observed. The wound was closed routinely. Dimensions of the mass were 7×6×0.5 cm. The mass was sent for histopathological examination.

The tumor was an ulcerated, firm, domed shape mass. The cut surface was white and firm and also the deep margin of the tumor
was well defined.

The histological lesions consisted of uniform sheets of cells infiltrating the dermis and subcutis with little stroma. The neoplastic cells were round to oval with moderate, lightly eosinophilic cytoplasm. The cells nuclei were bean shaped to oval located centrally with a clear indentation of the nuclear membrane. Cytoplasmic boundries were indistinct. Mitotic figures were numerous (9 per high power fields). In the deeper layers of dermis, the cells were densely packed. The epidermis had been thin and some clusters of neoplastic cells had infiltrated in it. The cells had extended from the dermoepidermal junction to the deep dermis and panniculus. There were numerous lymphocytes and plasma cells at the deep border of the tumor. Some lymphocytes were seen scattered amongst the tumor (Fig. 1). Microscopically, tumor was wedge shaped. For distinguishing the tumor from mastocytoma, Tuluidine blue and Giesma stain was used, no metachromatic granules was seen and the result of staining was suggested negative.

**Discussion**

The histyocytoma is referred to “surgical emergencies” and should be removed quickly (Reger and Wilcock, 1994). A retrospective study of 400 cases showed that in 4% of cases an additional tumor arise at a site distance from the original tumor and one case recured at the site of surgical excision (Goldschmidt and Shofer, 1992). The result of staining with Tuluidine blue and negative that can be a good indicator for differentiating the tumor from mast cell tumor. In addition the presence of numerous mitotic figures, cleaved nuclei and intimate epidermal association of the tumor are indicators for differentiation from anaplastic granulated mast cell tumor. On routine H&E stained slides, the nuclear and cytoplasmic difference between TVTs and histyocytomas can be subtle (Affloter and More, 2000), but the location of the tumor can be used for primary differentiation. Absence of narrow zone of compressed dermis between the tumor and overlying epithelium can be helpful for distinguishing the tumor from plasmocytoma.

According to the histopathological findings and special stainings done, the tumor was diagnosed as canine cutaneous histiocytoma.

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**Fig. 1:** The dermis is infiltrated by densely packed tumor cells. Epidermis is very thin and infiltrated by cluster of neoplastic cells (>). The neoplastic cells are extended from dermoepidermic junction to deep dermis (A). H&E stain (× 40)
References


9- Moore, PF; Schrenzl, MD; Affltoer, VK and Olivary, T (1996). Canine cutaneous histiocytoma is an epidermotropic langerhans’ cell histiocytoma that express CD1 and specific beta3-integrin molecules. Am. J. Pathol., 148: 1699-1708.


