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Self-healing of cutaneous histiocytoma in Non-descriptive dog

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Abstract

A one and half-year old, non-descriptive, spayed, female dog was presented with a history of gradual increase in the diameter of single, round, soft, subcutaneous nodule on the rhinarium for the past 4 weeks. Cytological examination revealed basophilic cytoplasm and round to oval nuclei with indentation, chromatin and prominent nucleoli. It was diagnosed as cutaneous histiocytoma. Complete regression of the tumour observed in two months without treatment which implies the self-cure nature of the tumour over a period of the time.

Keywords: Non-descript dog, cutaneous histiocytoma, cytology, self-cure

Introduction

Cutaneous histiocytoma (CH) is a common, benign, skin tumor of dogs that generally arises as a solitary mass in young dogs of less than 4 years of age [1]. The clinical manifestations of cutaneous histiocytoma in older animals is commonly associated with unfavorable prognosis, the process undergo towards malignant form by metastases with the involvement of lymph nodes [2]. Normally, the tumour originating from the histiocytic cells. Their precursors are dendritic cells, localized in the skin. The lesion prevalence amounts up to 14% of dermal tumors in dogs [3, 4, 5].

Boxer dogs are highly predisposed for cutaneous histiocytoma [6]. The growth of tumour was generally single and almost never multiple and tend to regress automatically [7]. Recurrence rate for the cutaneous histiocytoma at the site of surgical excision are low and development in new site also low in incidence [8]. Cytological interpretation paves the way for the quick diagnosis of cutaneous histiocytoma in canine practice. Generally, this tumour regress spontaneously over a period of time in the dogs especially in young age. Hence, this case was aimed to assess the self-cure phenomenon nature of the cutaneous histiocytoma in the non-descriptive dog.

Case history and observations

A one and half-year old, non-descriptive, spayed, female dog was presented with a history of gradual increase in the diameter of single, round, soft, subcutaneous nodule on the rhinarium for the past 4 weeks. The diameter of these nodule varies from 0.5 to 1cm (Fig. 1). The mass was examined and fine needle aspiration cytology [9]. Multiple smears were made for cytopathological examination. The smears were stained with leishman-giemsa staining [10]. Briefly, it was done by flooding the smear with a LG stain for a minute and diluting it with a double the volume of distilled water. The smears were left undisturbed for 20-30 mins and then air dried for microscopical examination.

Results and Discussion

Cytological examination revealed basophilic cytoplasm and round to oval nuclei with indentation, chromatin and prominent nucleoli (Fig. 4). These findings are in agreement with earlier worker [9]. The mass was diagnosed as cutaneous histiocytoma. Then, the owner was advised for review after one month without treatment because it mostly resolve themselves over a time which resulted in 50% of regression of the tumour (Fig.2) and complete regression of the tumour in two months (Fig.3). These findings are correlated with Gross *et al.* [11] who reported that histiocytoma are generally benign in nature and usually, no treatment is required for histiocytoma, although surgical excision might be considered in aged dogs (or) no

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occurrence of regression over a long period and regressed lesions was characterized by infiltration of lymphocytes on pathological examination. Similarly, spontaneous regression occurs within 2–3 months is a feature of canine cutaneous histiocytoma^[12]. Kipar *et al.*^[13] also suggested that cutaneous histiocytoma was a self-limiting neoplastic disease in which neoplastic cells undergoes self-destruction by activated immune system. Similarly, Joan Rest^[14] who suggested that histiocytoma were hyperplasia (overgrowth with regression when the stimulus or signals for cell proliferation was removed) rather than the true cancers (where cell proliferation was out of control and not regressed). The regression of canine cutaneous histiocytoma was characterized by infiltration by CD8 lymphocytes, increased expression of cytokines (IL-2, TNF α , IFN γ) and iNOS mRNA^[15] and decreased transport of the MHC-II from the cell cytoplasm to the cell membrane and loss of E-cadherin expression in the neoplastic cells^[16].



Fig 1: Dog-Tumour nodule on the rhinarium



Fig 2: Dog- Histiocytoma- 50% regressed tumour in one month period



Fig 3: Dog- Histiocytoma- Complete regression of tumour in two months

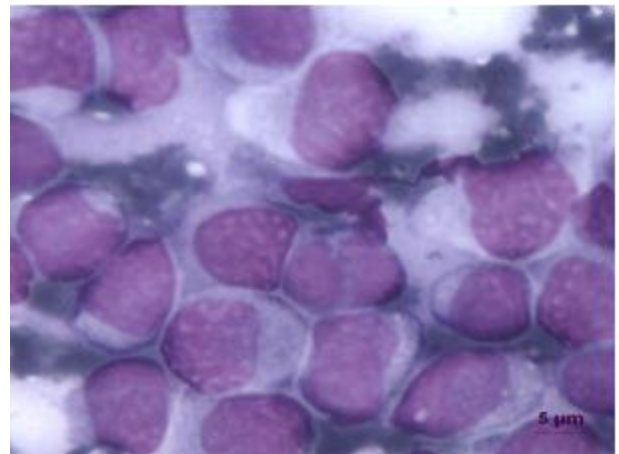


Fig 4: Histiocytoma- Cytology- Cells are round shaped with basophilic cytoplasm and round to oval nuclei with indentation. L&G Scale Bar-5 μ m.

Summary

Based on the above case study, confirmed that canine cutaneous histiocytoma is a self-limiting tumour and generally diagnosed easily by cytopathological examination.

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