

Melanoacanthoma in a Dog: A Case Report

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Abstract

A cutaneous melanoacanthoma on the forehead of a 5-year-old male mongrel dog was characterized by the presence of two populations of neoplastic cells: epithelial and melanocytic. The epithelial component consisted of nests of well-differentiated stratified squamous epithelium closely associated with neoplastic melanocytes. According to our survey, three cases of this rare pigmented skin neoplasm of the dog have been published. We present here the histological features of the fourth case of Melanoacanthoma in dogs. This report confirms the benign nature of this tumor and adds to the data that will help determine predilections of age, breed, sex and site of its occurrence.

Keywords: Dog; Melanoacanthoma; Melanocytoma-acanthoma; Skin; Tumor

Introduction

Melanoacanthoma, also called melanocytoma-acanthoma [1] is a benign melanocytic tumor with features of a compound melanocytoma and a benign epithelial neoplasm. It is a rare tumor in the canine species [2]. This tumor was first reported and classified in the dog by Gross et al. [1] and a second case by Espinosa et al. [3]. The last case was reported by Park and Cho [4].

Many cases were reported in humans, the lesions seen both on the skin and on the oral mucosa and diagnosed as benign tumors [5]. Multifocal cutaneous melanoacanthoma with ulceration was reported [6] as well as a lesion that mimics malignant melanoma was also reported [7].

Case History

A tumor was found on the forehead of a 5-year-old intact male mongrel dog. The tumor was surgically excised, fixed in formalin, and submitted for routine histopathological examination. It was a solitary, hazel nut like, exophytic and ulcerated, and humped skin node. It was lobular and showed a darkly pigmented cut surface.

Materials and Methods

Fixation was carried out using 10% neutral buffered formalin. The specimen was subjected to further processing steps that included

dehydration, clearing, embedding, sectioning of 4 µm thickness and routine Haematoxylin and Eosin staining. All slides were examined using light microscopy.

Histopathological examination

Microscopically, the dermal nodule was focally contiguous with the epidermis (Figure 1). Two populations of tumor cells were observed: epithelial cells within the dermis and melanocytic cells in both the epidermis and the dermis. The epithelial component consisted of nests of well-differentiated stratified squamous epithelium with gradual keratinization towards the center of the nests or of masses with centers filled with neoplastic epithelioid melanocytes (Figure 2 and 3). The melanocytic component consisted of masses and intraepithelial nests of epithelioid pigmented cells in the basal layer of the neoplastic epithelial component. The epithelioid cells were sometimes heavily pigmented

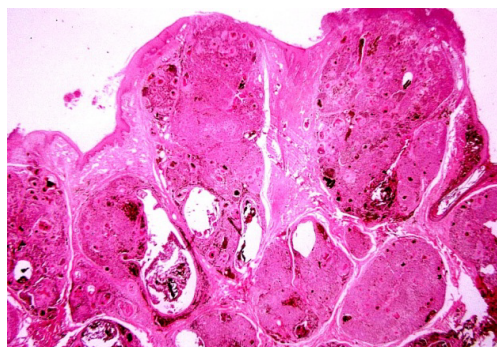


Figure 1: Melanoacanthoma; mongrel dog. Neoplasm has exophytic and ulcerated surface with pigmented lobules. H&E stain. 1.25X.

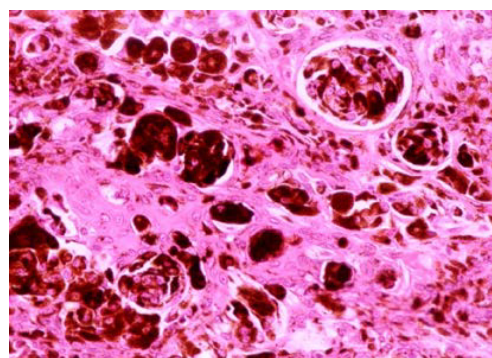


Figure 2: Melanoacanthoma; mongrel dog. Nests of epithelioid pigmented cells in a mass of well-differentiated squamous epithelium. H&E stain. 40X.

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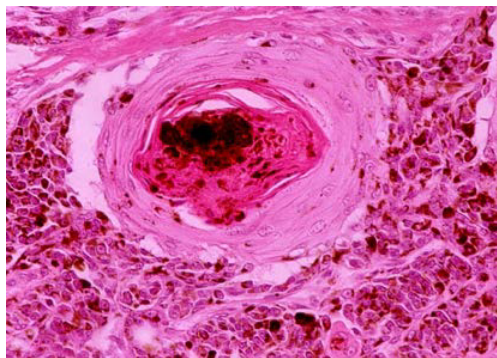


Figure 3: Melanoacanthoma; mongrel dog. Nests of well-differentiated squamous epithelium with central keratinization in epithelioid pigmented cells mass. H&E. 40X.

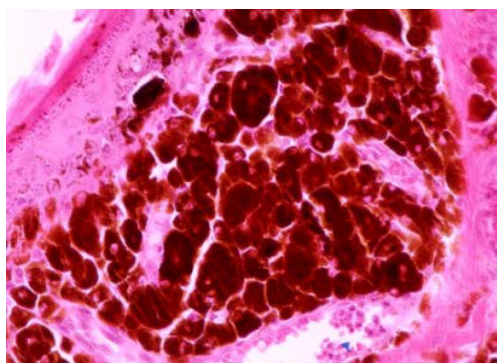


Figure 4: Melanoacanthoma; mongrel dog. Junctional activity. H&E. 40X.

(Figure 4) and oval to spindle-shaped. Nuclei were central, oval and uniform, with fine chromatin and very few mitotic figures. In addition, scattered junctional activities were observed. The tumor was first diagnosed as melanoma with an epithelial component. Later on, the tumor was reclassified according to the new World Health Organization (WHO) classification as melanoacanthoma.

Discussion

The tumor synonyms are not mentioned in the WHO classification [2]. In order to perform literature research, synonyms like melanocytoma-acanthoma were needed to be mentioned, because this tumor in dogs was published using the synonym melanocytoma-acanthoma and no case was published under the synonym melanoacanthoma [1,2,4]. It is therefore recommended stating all the synonyms, as far as possible, behind the respective tumors to facilitate search with regard to these tumors [8].

Since this tumor has previously been reported in only three dogs and all of them showed no malignant characteristics. Therefore, this report confirms the benign nature of this tumor and adds to the data that will help determine predilections of age, breed, sex and site of its occurrence.

The histopathological appearance of this case matches with that mentioned in the previous cases. Two from four lesions (50%) were found in the head (our present case and the case from Park and Cho [4]), and all of them were in dogs, while no melanoacanthomas were reported in other animal species, and that can mean that the tumor is extremely rare in other animal species or that this kind of tumor developed only in the dog. It should be noted that the term melanoacanthoma in dogs is different from cutaneous melanoacanthoma in humans. Cutaneous melanoacanthoma in humans is a benign tumor with a typical shape of an epidermal plaque, and consists mainly of epithelial cells with some infiltration of melanocytes [4].

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