



# Journal of Biological Sciences

ISSN 1727-3048

**science**  
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## Vascular Hamartoma in the Gingiva of a Calf

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**Abstract:** A vascular hamartoma is a nonneoplastic malformation that is present at birth and grows until puberty. A one-day-old female native calf due to a tumor-like mass in the gingiva was referred to Department of Pathobiology, Faculty of Veterinary Medicine, Islamic Azad University of Shahrekord. After gross examination of the mass, surgical treatment was performed. Histopathology of the excisional biopsy revealed proliferation of endothelial cells and numerous capillary intermixed with loose connective tissue. The tumor-like mass was diagnosed as gingival vascular hamartoma based on congenitally occurrence, gross and histopathological characteristics.

**Key words:** Vascular hamartoma, gingiva, birth, calf

### INTRODUCTION

Vascular hamartomas are defined as disorganized and excessive proliferations of vascular tissue that are present at birth. They are considered developmental malformations rather than true neoplasms due to their limited growths (Smith and Van Winkle, 2001). Vascular hamartomas have been reported from various species (cattle, pig, horse, goat, cat, dog and human) and observed in various organs or tissues (liver, gingival mucosa, testicle, ovary, skin, muscle, lung and cerebrum) (Benoit *et al.*, 2005).

Gingival vascular hamartoma is a rare tumor-like anomaly in calves and only nine cases of it have been recorded in the literature (Sheahan and Donnelly, 1981; Stanton *et al.*, 1984; Wilson, 1990; Yeruham *et al.*, 2004). In addition to these cases, lobular capillary haemangioma in the gingiva of two 6-month-old calves are described (Van der Gaag *et al.*, 1988).

To our knowledge, there is no report about occurrence of gingival vascular hamartoma in Iran. In this case report, we describe gross and histopathological characteristics of this malformation in the affected case.

### MATERIALS AND METHODS

A one-day-old female native calf due to a tumor-like mass in the gingiva was referred to Department of Pathobiology, Faculty of Veterinary Medicine, Islamic Azad University of Shahrekord. After gross examination of the mass, surgical treatment was performed. For

histopathological study, tissue sample were taken from excisional biopsy. They were fixed in 10% neutral buffered formalin, processed and embedded in paraffin. Sections of 5 µm thickness were cut, stained with haematoxylin and eosin.

### RESULTS

At gross examination, a red to brown mass with an ulcerated surface, measuring 2×3 cm, was found in the gingiva near the mandibular incisors. Histopathology of the excisional biopsy revealed proliferation of endothelial cells and numerous capillary intermixed with loose connective tissue (Fig. 1 and 2).

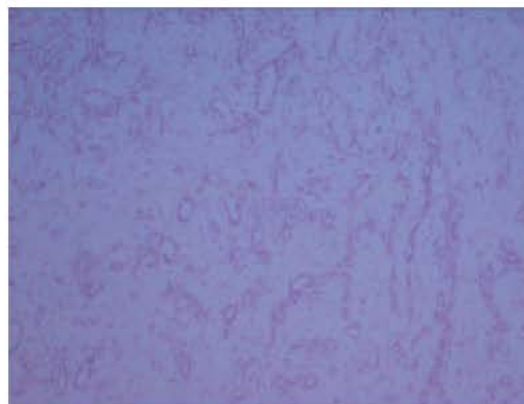


Fig. 1: Gingival vascular hamartoma. Numerous capillary intermixed with loose connective tissue are seen (H&E ×92.5)

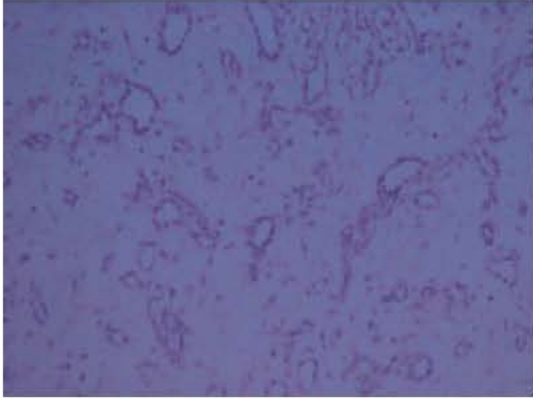


Fig. 2: Gingival vascular hamartoma. A single layer of squamous cells similar to normal endothelium are lined the capillaries (H&E  $\times 185$ )

A single layer of squamous cells similar to normal endothelium were lined the capillaries (Fig. 2). A few thin-walled dilated vascular spaces filled with red blood cells and hemorrhages were seen in some sections.

#### DISCUSSION

Hamartoma refers to a benign tumorlike nodule composed of an overgrowth of mature cells and tissues native to the organ in which it occurs (Takahashi *et al.*, 2000). Hamartomas can occur in any organ and are related to anatomical development errors (Benoit *et al.*, 2005; De Biase *et al.*, 2002).

Congenital vascular lesions in the bovine have been described in a variety of tissues, including the tongue, meninges, spinal cord, skin and testicle (Yeruham *et al.*, 2004). In the present case, the tumor-like mass was diagnosed as gingival vascular hamartoma based on congenitally occurrence, gross and histopathological characteristics. Usually, the use of term hamartoma implies the presence of the lesion at birth, with subsequent growth paralleling that of the animal but ceasing with maturity (Smith and Van Winkle, 2001). However, the question arises as whether they are hamartomas or hemangiomas because these masses are found in young animals (Head *et al.*, 2002). On the other hand, unequivocal differentiation is difficult between lobular capillary hemangioma and hamartoma (Yeruham *et al.*, 2004).

In this case, macroscopic features of gingival vascular hamartoma were similar to the previous reports. All the recorded cases have been seen in the gingiva near the mandibular incisors (Sheahan and Donnelly, 1981; Stanton *et al.*, 1984; Wilson, 1990; Yeruham *et al.*, 2004).

In this study, the proliferation pattern of endothelial cells was capillary type. This is in agreement with the previous report by Yeruham *et al.* (2004). In addition to capillary type, cavernous and solid patterns have been recorded in the histological sections of the lesion (Head *et al.*, 2002).

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