Veterinary Letters
ISSN 2581-2416
DOI: https://dx.doi.org/10.29244/avl.7.2.23-24
https://journal.ipb.ac.id/index.php/arshivetlett

Vulvar hemangioma in a Kintamani dog

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ABSTRACT: Hemangioma is a common benign tumor that originates from blood and lymphatic vessels, occurring in both humans and animals. In dogs, these tumors are primarily found on the skin. This case report highlights the first reported incidence of vulvar hemangioma in a Kintamani dog. The complete blood count showed the animals had leukocytosis. Total excision of the tumor mass was performed, and postoperatively, the dog was given analgesic and antibiotic with tolfenamic acid and amoxicillin, respectively for 5 consecutive days. Topical antibiotic neomycin sulfate was also given on the surgical site. Prognosis for this case was considered good based on the nature of the tumor and its location. Based on postoperative monitoring, it can be concluded that the treatment was successful without any recurrence.

Keywords:
Kintamani dog, vulvar hemangioma, surgical excision

■ INTRODUCTION

Hemangioma is a common neoplasm that occurs in both humans and the veterinary medicine (Muller *et al.* 2022). It is a benign tumor that originates from blood and lymphatic vessels. Although hemangiomas in dogs are primarily found on the skin (Schultheiss 2004), the tumors can also occur in other locations such as the conjunctiva, tongue, spinal cord, liver, spleen, kidney, and joints (Aljamel & Halima 2015). However, this benign tumor is rarely found in other domestic animals except for dogs (Goldschmidt & Hendrick 2002).

In dogs, hemangiomas account for 3.8% to 4.5% of all skin tumors (Gross *et al*. 2008). These tumors usually occur in dogs older than 10 years and are uncommon in dogs under 3 years of age (Hargis *et al*. 1992). In humans, vulvar hemangiomas have been reported and can cause sexual and emotional disability (da Silva *et al*. 2018). Although the incidence rate of hemangiomas in dogs is frequently reported, there are no previous reports of vulvar hemangiomas in dogs to the best of the authors' knowledge. This case report presents the first incidence of vulvar hemangioma in a Kintamani dog.

■ CASE

Signalment and Case History: A one-year-old female Kintamani purebred dog was brought to the Veterinary Surgery Laboratory, Faculty of Veterinary Medicine, Udayana University by the owner, with complaints of a red mass in the vulva area that had been present for three weeks. According to the owner's statement, the dog frequently licked its genital area, and there was often bloody discharge from the mass area. The dog has never been bred and is kept only around the house. The dog is recorded to have vaccinations and deworming history. **Clinical Examination**: The dog's body temperature was 38.8 °C, heart rate 135 bpm, respiratory rate 28x/min, and CRT < 2 s, and body weight was 11.3 kg. Examination of the entire body system was found normal. During the examination, a reddish mass with an irregular shape was found (Figure 1), and clinical sign of bloody discharge was observed on the mass when palpated.

Figure 1. Macroscopic appearance of a mass in the vulvar area on a Kintamani purebred dog. It looks reddish colored, indicating the high vascularization of the mass.

Ancillary Tests: A complete hematological examination (Table 1) and histopathology were performed (Figure 2). The

Received: 17-02-2023 | **Revised:** 25-03-2023 | **Accepted:** 28-03-2023

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results of the hematology showed that the dog had leukocytosis. **Diagnosis**: Based on the investigation, the Kintamani dog in this case was diagnosed with vulvar hemangioma. **Prognosis**: The prognosis of this case is favorable, judging from the nature of the tumor and the location of the mass that can be easily reached. **Treatment**: Total excision of the tumor mass was performed. Standard preparations were carried out for surgery. Post-operatively, the dog was given analgesic tolfenamic acid 4 mg/kg BW SC, amoxicillin antibiotic 25 mg/kg BW PO for 5 days, and topical antibiotic neomycin sulfate (Enbatic®) on the surgical site. After follow-up one month later, there was no sign of tumor recurrence based on physical examination.

Table 1. Hematological examination on a Kintamani purebred dog with vulvar hemangioma.

Parameter	Results	Reference range*
WBC (10^3/µL)	18.9**	6-17
RBC (10^6/µL)	6.34	5.5-8.5
Lymphocyte (%)	22.6	12-30
Granulocyte (%)	72	60-83
Eosinophil (%)	9.5	2-10
Hb (g/dL)	13.3	12-18
MCV (fL)	66.4	60-77
MCH (pg)	20.9	14-25
MCHC (g/dL)	31.6	31-36
PLT (10^3/µL)	394	200-500
HCT (%)	42	37-55

Note: WBC= White Blood Cells; RBC=Red Blood Cell; Hb= Hemoglobin; MCV=Mean Corpuscular Volume; MCH=Mean Corpuscular Hemoglobin; MCHC=Mean Corpuscular Hemoglobin Concentration; PLT= Platelet; HCT=Hematocrit. *Source: Tilley & Smith Jr (2011) **Above Reference Range.

■ RESULTS AND DISCUSSION

Hemangioma is a blood and lymphatic-originated tumors that commonly appears on the skin and soft tissue mucosal surfaces. However, the occurrence on the vulva has not been previously reported in dogs. The anatomical pathology of the tumor mass in this case appeared as reddish mass, indicating a high level of vascularization activity (Gross *et al.* 2008). Some hemangioma cases manifest as ulcers rather than a mass (da Silva *et al*. 2018).

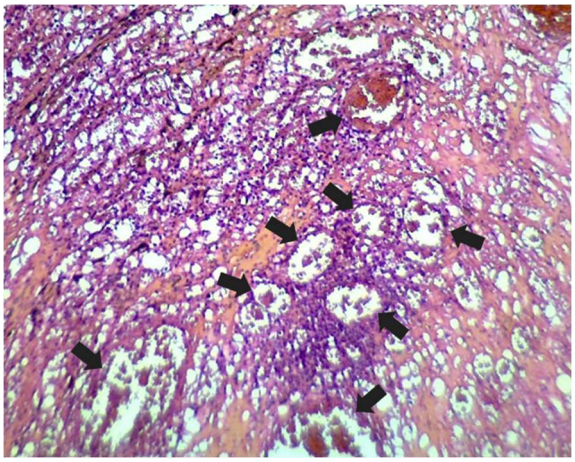

Figure 2. Histopathology of vulvar hemangioma on a Kintamani purebred dog. Many blood vessels and capillaries are found in oval shape, some of them engorged with red blood cells covered with a single layer endothelium (black arrow). Low mitotic index and no anaplasia (H&E, 400x)

In horses, hemangiomas have been linked to prolonged exposure to ultraviolet light, with reports of these tumors occurring on the skin of the dorsal area due to sun exposure (Muller *et al.* 2022). In dogs, the etiology of hemangiomas is not yet fully understood, but certain breeds such as the American Staffordshire Terrier, Beagle, and Dalmatian are thought to be predisposed due to the anatomical structure of their thin skin (Nikula *et al.* 1992). Unlike human infantile hemangiomas, there is no data regarding the natural regression of hemangiomas in dogs, so excision was surgeon's best choice in this present case. In humans, vulvar hemangiomas can interfere with sexual activity and affect emotions (da Silva *et al.* 2018).

■ CONCLUSION

In conclusion, a case of vulvar hemangioma in a Kintamani dog was successfully diagnosed and treated with total excision without any recurrence after one-month follow-up. While hemangiomas are a common occurrence in dogs, their occurrence on the vulva is rare and had not been previously reported.

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