

Case of the Month November 2023

A 1.5 yo MC domestic short hair presented for evaluation of a swollen right rear paw since 6 months of age. The patient would chew the affected paw resulting in self trauma and bleeding. He had previously been treated with depomedrol which appeared to decrease the bleeding. He was otherwise healthy with no know co-morbidities. On exam the right rear paw had marked nodular and fluctuant swelling of the interdigital skin between the metatarsal pad and digital pads of digits 4 and 5 that expanded and distorted the paw. The paw pads were unremarkable in appearance, size and texture. The other paws and skin were unremarkable.

Figure 1: Swelling of the right rear paw



Figure 2: HE

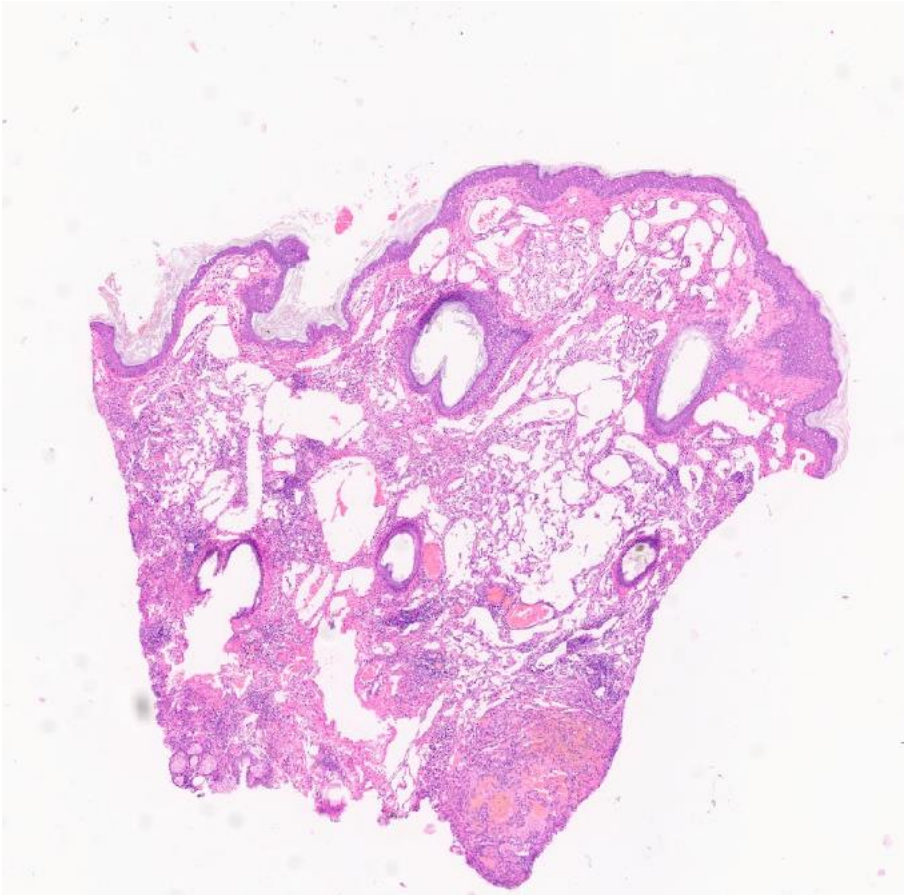


Figure 3: HE, 4x.

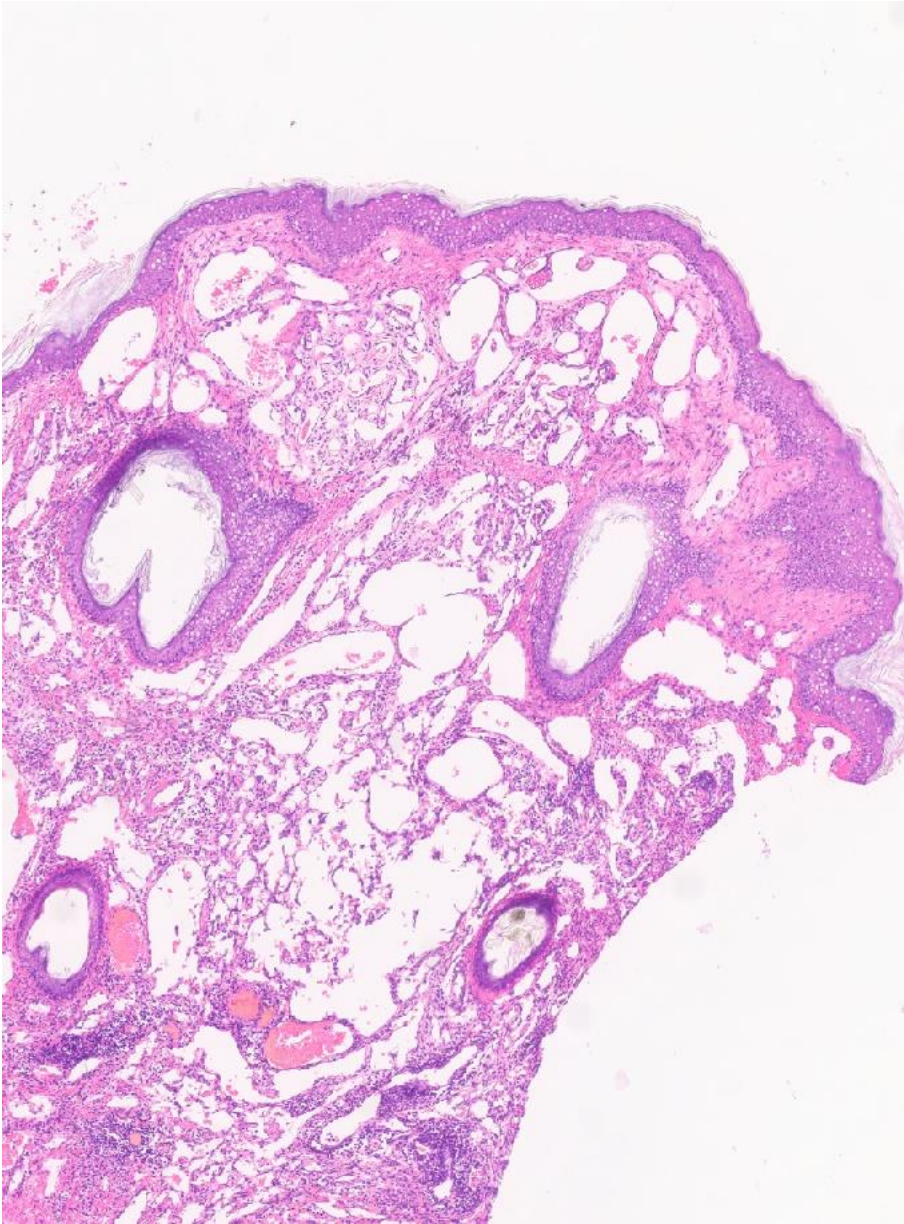


Figure 4: HE, 10x.

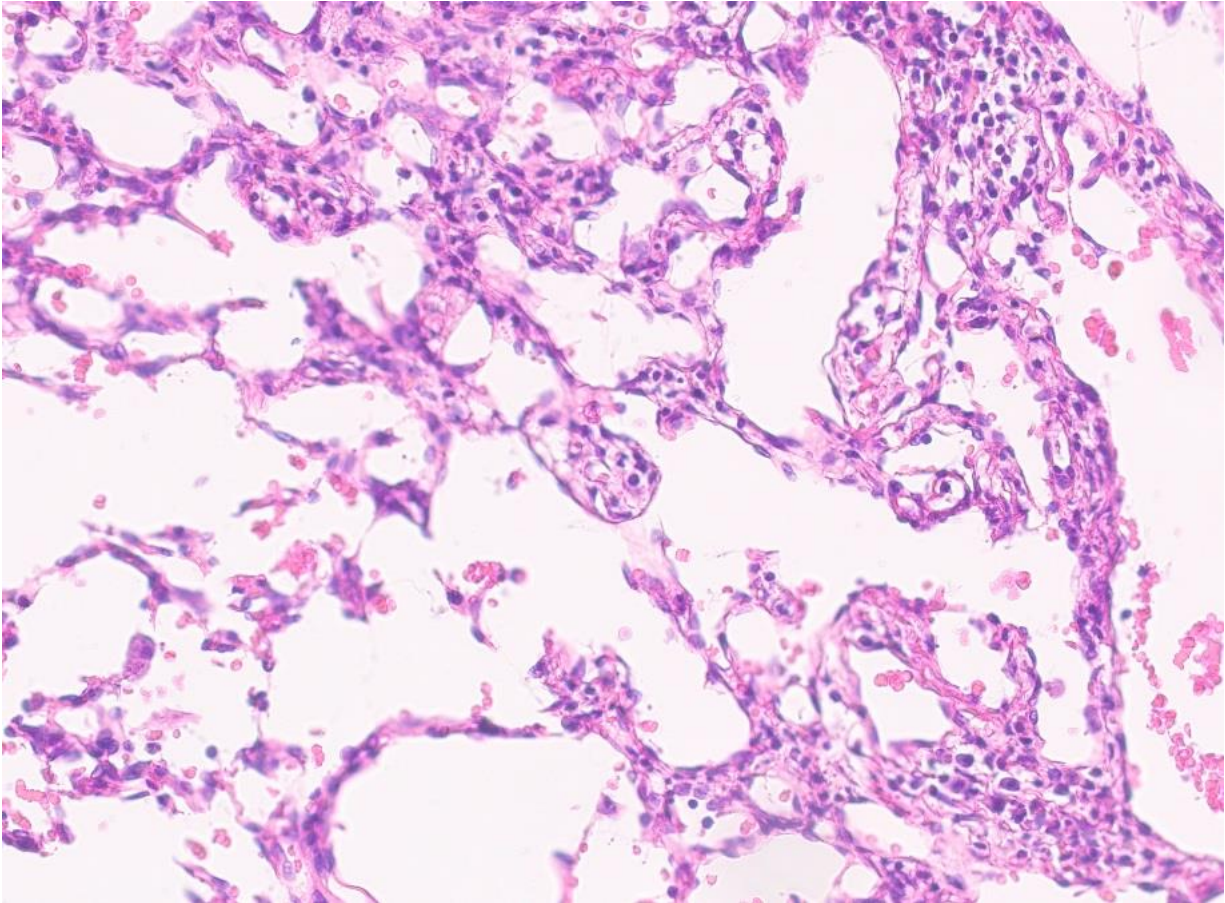


Figure 5 : immunohistochemistry Factor VIII

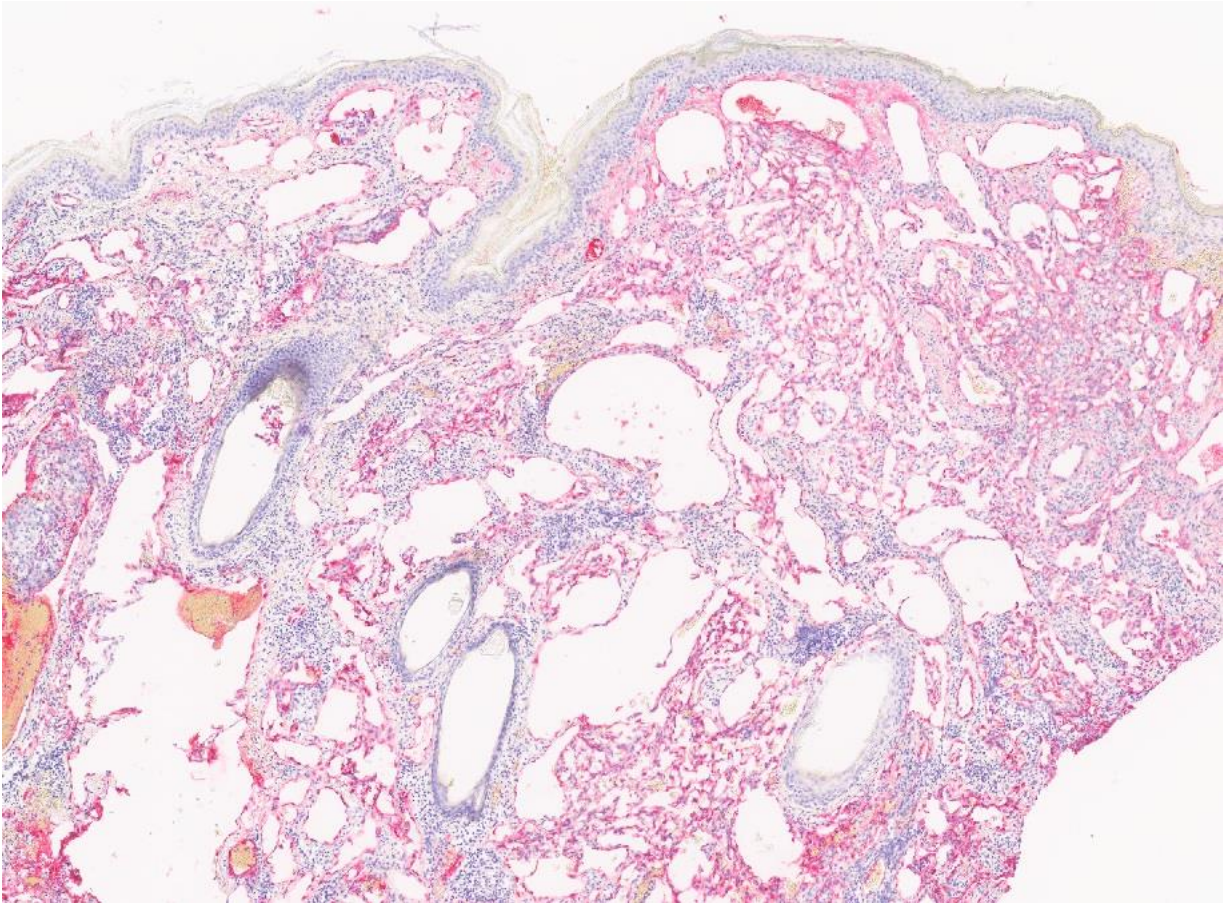
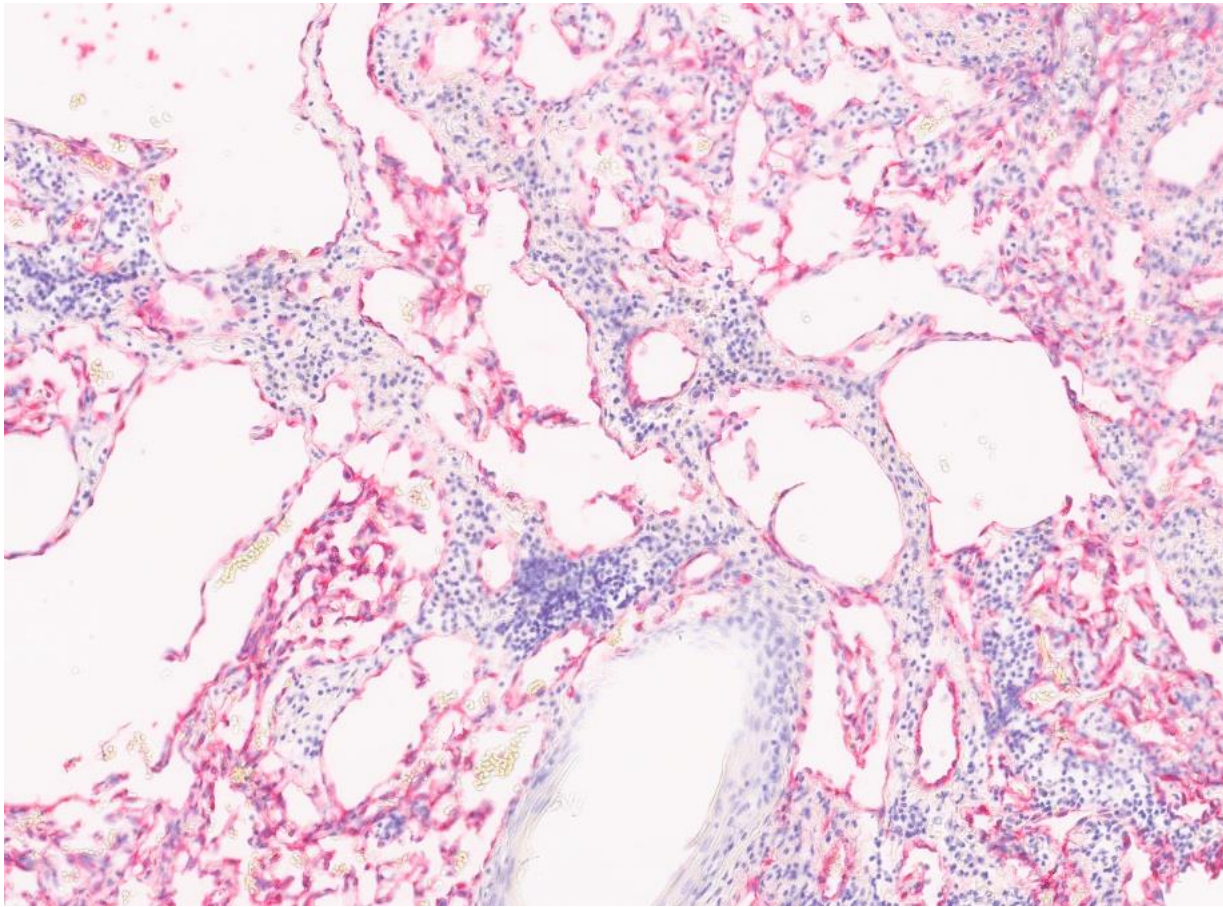


Figure 6 : immunohistochemistry Factor VIII



Which of the following is the most likely diagnosis?

- A. Plasma cell pododermatitis
- B. Vasculitis
- C. **Progressive angiomatosis**
- D. Lymphangiosarcoma

Histopathologic description

Numerous variably ectatic thin-walled and anastomosing vascular channels expand the dermis and subcutis, and extend to sectional margins. The vessels contain erythrocytes and small numbers of neutrophils and platelet clumps. The vessels surround and mildly displace adnexa. Vessels are supported by dermal collagen and fibrous stroma that is variably expanded by plasma cells, mast cell, small lymphocytes, and eosinophils. Endothelial cells are flattened with indistinct nuclei, and mitotic activity is

note present. There are areas of dermal edema. The overlying epidermis is mildly hyperplastic with regions of compact orthokeratotic hyperkeratosis.

Morphological diagnosis

Haired skin: moderate to severe, atypical vascular proliferation, incompletely excised

Haired skin: mild, perivascular, lymphoplasmacytic, mastocytic and eosinophilic dermatitis with dermal edema, fibrosis, epidermal hyperplasia and compact orthokeratosis

Comments

Progressive angiomatosis is considered the most likely diagnosis based on patient signalment, histology and immunohistochemistry. Angiomas are a collective term that describes a heterogeneous group of poorly understood vascular abnormalities. Generally, these lesions are considered non-neoplastic though they can be progressive with expansion into surrounding tissues mimicking malignancies. In dogs and cats, clinical lesions of progressive angiomas are most often present in young to middle-aged animals, and are often located on the digits and feet. Lesions include red macules or patches, or plaques and nodules that are partially blanching on diascopy. Hemorrhage can be present, and lesions can be destructive including bony lysis. A primary differential diagnosis for angiomas is low-grade hemangiosarcoma. Due to young patient age, clinical location, and lack of cellular atypia and mitotic figures this differential was considered less likely.

Resection of the affected area is often the treatment of choice for angiomas through surgical removal or laser photocoagulation treatment. Full excision can be difficult, and recurrence is possible that in some cases results in limb amputation. In this case digital amputation was performed, and numerous vascular channels were noted within the sample that dissected through the tissue.

References

Baron CP, Puntel FC, Fukushima FB, et al. Progressive cutaneous angiomas in the metatarsal region of a cat. *J Am Vet Med Assoc* 2020;256(2):226-229.

Gross TL, Ihrke PJ, Walder EJ and Affolter VK, pp. 735-741. In *Skin Diseases of the Dog and Cat: Clinical and Histopathological Diagnosis*, 2nd edition, Blackwell 2005.

Olivieri L, Nardini G, Pengo G, et al. Cutaneous progressive angiomas on the muzzle of a dog, treated by photocoagulation therapy. *Vet Dermatol* 2010;21:517-521.

Contributors

M. Kelly Keating DVM— Animal Dermatology Group, Inc, Las Vegas, NV, USA

Jason Wood DVM- Pathwood Veterinary Laboratories, Seattle, WA, USA

Christie Yamazaki DVM- Dermatology for Animals, Oakland, CA, USA