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**Clinical Article**

# CUTANEOUS HAEMANGIOMA IN SHAR-PEI DOG:A CASE REPORT

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## SUMMARY

A neutered male Shar-Pei dog with a cutaneous growth on the left anterior metacarpus, bleeding for the past two days, was presented for treatment in the clinic. Histopathology of pedunculated, moderately well-demarcated, non-capsulated mass revealed proliferative cells exhibiting scanty eosinophilic cytoplasm and ovoid euchromatic nuclei with small nucleoli. The mitotic index was very low. Ulcerative patches with low grade mixed inflammation were clearly discernible. The dermis contained mucinous ground substance with scattered macrophages, mast cells, lymphocytes, plasma cells and occasional eosinophils. The microscopic profile established dermal haemangioma with mucinosis. Following complete surgical mass removal, the recovery was uneventful.

**Keywords:** Dog, Haemangioma, Skin, UV radiation

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Involving the vascular endothelial cells, haemangiomas in dogs are benign, solitary, deep dermal tumors (Theilen and Madewell, 1987; Kim *et al*., 2005), whereas haemangiosarcomas are generally manifested clinically as disseminated malignancies (Lather *et al*., 2015). Haemangiomas, both nonvisceral and visceral may exhibit ulceration with capillary bleeding into the surrounding healthy tissues (Schultheiss, 2004). These lesions appear painful, but commonly do not cause any physical discomfort to the companion pet. Notably, after a brief spell of accelerated growth, these noncancerous bioentities, closely resembling a blood blister (angiokeratoma), which shrink uneventfully without complications. Further, the mutated cells continue to perform their physiological role and produce new blood vessels. Haemangiomas rarely turn malignant and often do not require medical or surgical treatment. Veterinary care may be solicited for cosmetic considerations. In humans as well as companion dogs, the benign haemangiomas may erupt upon continuing extended periods of exposure of the melanin pigment containing surface skin to solar UV radiation (Hargis *et al*., 1992; Gross *et al*., 2005).

In the present case, 9 years old, neutered male Shar-Pei dog was presented to the Milford Veterinary Clinic, Milford, Michigan on March 3, 2021 for removal of a cyst-like cutaneous mass (Fig. 1a, b). The owner informed that the solitary shiny growth on the left anterior metacarpal area was bleeding during the past two days. The owner agreed for the referral histopathology of the surgically excised mass, but was not willing for survey radiography and blood work. The patient was pre-medicated with butorphanol (Torbugesic®) 0.4 ml and acepromazine 0.15 ml, injected subcutaneously (S/C). Lactate Ringer's solution was infused continuously through the intravenous route @ 100 ml/hr.Following induction with ketamine (1.3 ml) and midazolam (1.3 ml) I/V, the patient was transferred to isoflurane gas anaesthesia. The surgical area was properly prepared by clipping the hair and cleaning with a surgical scrub. An elliptical incision around the mass was made with a sterile # 10 scalpel blade. The entire ovalelongated mass with wide margin all round was removed with blunt dissection using a pair of Metzenbaum scissors (Fig. 2a). The subcutaneous layer was closed with 4-0 absorbable sutures (Monomend®), and the skin with the same material to avoid sedation for suture removal (Fig. 2b).This precaution was necessary in view of the unpredictable temperament and biting tendency of the dog patient.

The I/V catheter was removed carefully and a fluid bolus (150 ml) was administered S/C. The patient was kept in the kennel on a warm blanket for post-operative monitoring. Antibiotic Polyflex® 3.9 ml and pain medication carprofen (Rimadyl®) 1.2 ml were administered S/C. In the same evening, the patient was transferred to the owner's care under advisory. Follow-up home care medicines package: antibiotic cefpodoxime (Simplicef®) 200 mg capsules OD for 10 days, and pain management agents, Rimadyl® 100 mg tablets twice a day with food along withTramadol® 50 mg tablet OD for 3 days were dispensed. Use of Animax® topical ointment at the incision site was advised, if itching occurred. Next day, the owner informed that the dog spent a disturbed night with ongoing subluxated patella and swollen feet. The incision site looked fine. However, it was reassuring that 48-hour post-surgery, the patient had recovered well and

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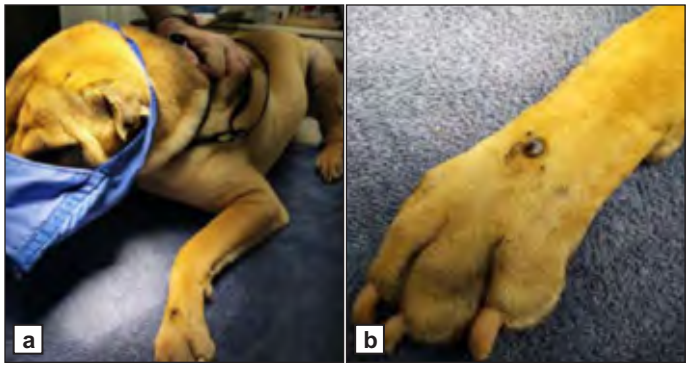

Fig. 1. **(a)** Patient - Tai Mead; **(b)** Tumor

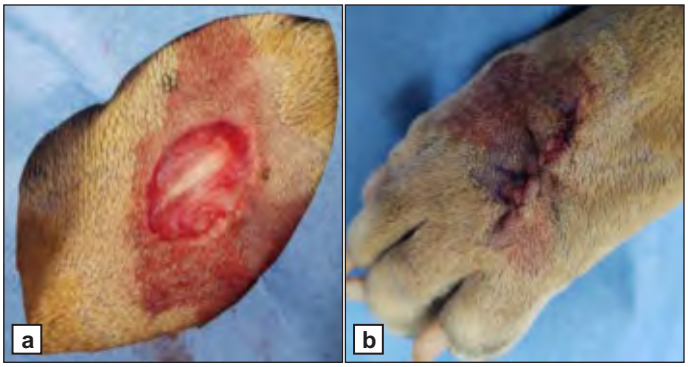

Fig. 2. **(a)** Surgical excision; **(b)** Surgical wound sutured in two layers

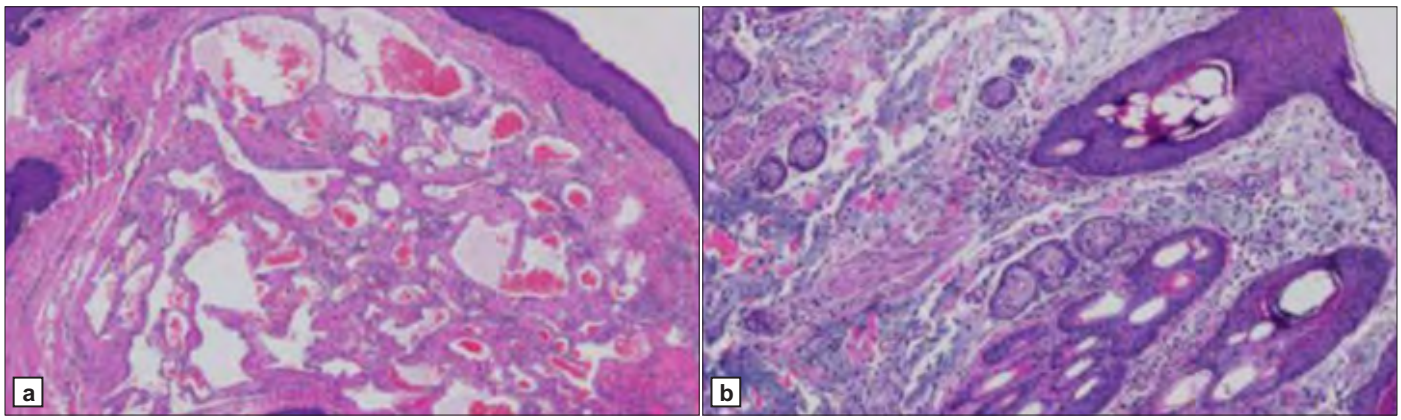

Fig. 3. (a) Dermal Hemangioma (400X); (b) Dermal mucinosis (1000X)

the behavioural profile was normal. Histopathology of the pedunculated, moderately well demarcated (Fig. 3a), non-capsulated mass revealed proliferative cells, exhibiting scanty eosinophilic cytoplasm and ovoid euchromatic nuclei with small nucleoli. The mitotic index was very low. Ulcerative patches with low grade mixed inflammation were clearly visible. The dermis contained mucinous ground substance with scattered macrophages, mast cells, lymphocytes, plasma cells and occasional eosinophils (Fig. 3b). The margins were excised completely.

In dogs, skin is the most vulnerable site for both neoplastic and non-neoplastic tumors (Withrow and MacEwen, 2001; Murphy, 2006). Environmental conditions and genetic factors may be importantly involved in some types of cutaneous neoplasms (Lather *et al*., 2015). A well-established contributory factor in the development of skin neoplasms (including haemangioma and hemangiosarcoma), especially in the short hair coat and lightly pigmented dog breeds like Shar-Pei to UV radiation in sun rays (Nikula *et al*., 1992; Hargis *et al*., 1992; Hendrick *et al*., 1998; Gross *et al*., 2005). This is plausible in the instant case of cutaneous haemangioma. Concurrent dermal mucinogenesis in Shar-Pei dogs is evidenced by focal or diffuse accumulation of mucin, varying in intensity. In severe mucinogenesis, the integrity of skin may be compromised, resulting in increased fragility. In the instant case, this adverse bio-response was preempted with timely surgical excision of the mass with advisory to avoid prolonged exposure of the companion dog to direct sun light. Pathological episodes associated with vascular endothelial tumors include intermittent bleeding, thrombocytopenia, hypofibrinogenesis and disseminated intravascular coagulopathies, DIC (Hargis and Feldman, 1991). Occasionally, in addition to skin, the internal organs (liver, spleen, heart and kidneys), bone and tongue may be involved (Sawale *et al*., 2014).

Thus, the present communication reports the cutaneous haemangioma with conspicuous mucinogenesis on the left anterior metacarpus. The earlier reports have documented cutaneous haemangiomas at other anatomical locations, viz., the right dorsal antebrachium and shoulder (Kim *et al*., 2005), chest (Balachandran *et al*., 2014), left flank abdomen (Lather *et al*., 2015), and the right lower flank (Parmar *et al*., 2018).

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