DIGITAL METASTATIZING MALIGNANT MELANOMA IN A DOE

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Melanoma is a rare and devastating disease encountered in both humans and animals (Smith et al., 2002). In goats the incidence of melanoma is very rare (0.009%) and if at all present, is encountered in older animals (Valentine, 2004). In the present case, the surgical management of melanoma located on digit in a nondescript doe and its metastasis in scapular region is reported.

HISTORY, CLINICAL OBSERVATIONS AND DIAGNOSIS

A five year old doe was presented with history of dark black fist sized, friable, soft tissue growth on dorsal aspect of the medial hoof of the right forelimb since last one year. The goat showed non weight bearing lameness as the tumour had split the claw due to its aggressive growing nature (Fig. 1). On clinical examination brachial and prescapular lymphnodes were mildly enlarged on corresponding limb with rectal temperature ($102^{0}F$), heart rate (76 /min) and respiration rate (40/min) within normal range.

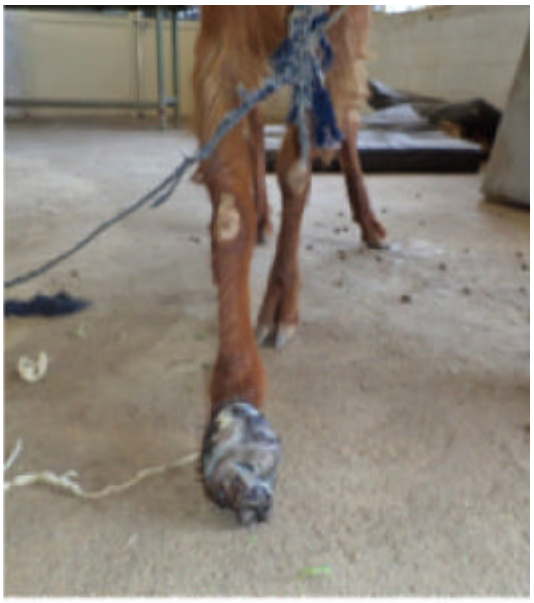

Fig.1 Malignant melanoma of medial claw

Hematological examination viz. Hb (11gm/dl), TLC (14850 cmm/ml), PCV (28%), DLC-Neutrophills (69%), Lymphocyte (28%), Monocyte (2%), Eosinophills (1%), basophills (0%) were within normal range with mild nutrophilia. On radiographic examination of hooves the growth was seen invading third phalanx (Fig. 2). Histopathological examination of tumor biopsy revealed that the neoplasm was composed of polygonal to spindle cells separated by moderate amount of vascular collagenous matrix. Neoplastic cells had distinct cell borders, a variable amount of eosinophillic, variable pigmented cytoplasm (Fig. 3). The intracellular pigment was melanin, not hemosiderin and confirmed by Prussian blue stain hence confirming that the tumor to be a malignant melanoma. Fine needle aspiration cytology (FNAC) of scapular lymphnode of corresponding limb revealed presence metastasis

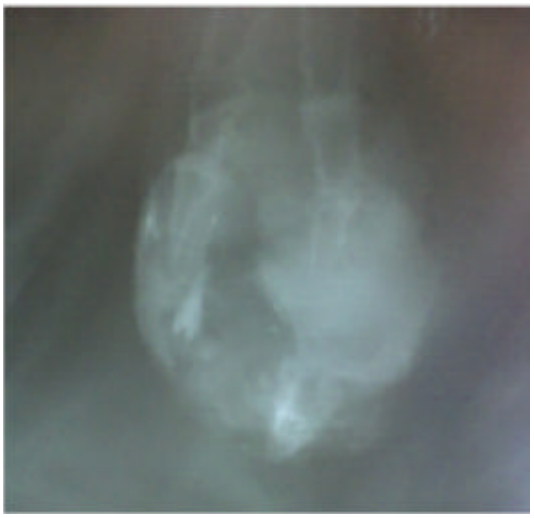

Fig. 2. Anterioposterior radiograph of hooves showing growth invading medial 3rd phalanx

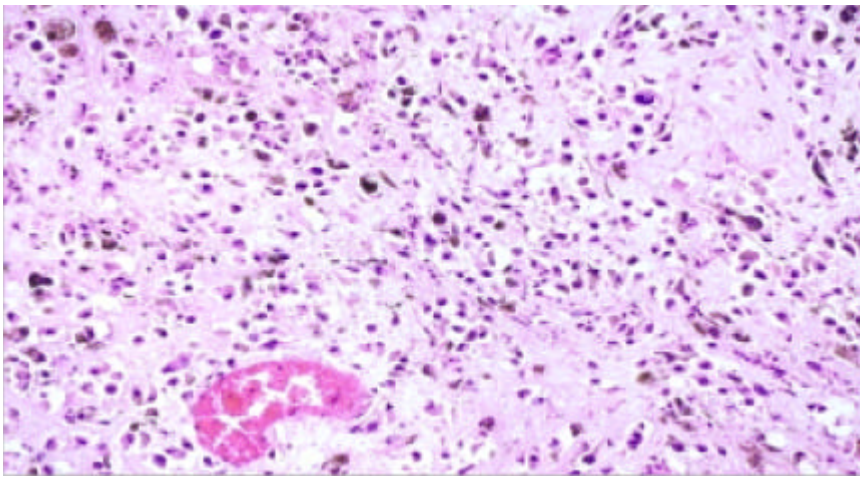

Fig. 3. Histopathology of malignant melanoma (Hand E stain) The neoplasm was composed of polygonal to spindle cells separated by moderate amount of vascular collagenous matrix.

robably through lymphatics, which revealed cells containing heavy dark black to green pigmentation obscuring cellular and nuclear detail.

TREATMENT

Amputation of affected digit was performed from distal third of proximal phalanx under local regional nerve block using 2% Lignocaine HCL. Firstly tourniquet was applied just above fetlock joint and a vertical incision was made on lateral and medial face of fetlock to coronary band, another incision was taken slight above to the coronary band converting it to a T shape. The skin flap was reflected back and the exposed pastern joint was disarticulated. The amputated digit was bandaged after surgery and owner was instructed to change dressing every alternate day. Inj. ceftriaxone 10 mg/kg.bw, I/M and, Inj Meloxicam 0.2 mg kg.bw,I/M for 5 day. Sutures were removed on 10th day after surgery (Fig.4.). The doe made an uneventful recovery with complete weight bearing on affected limb but the scapular lymphnode enlarged in size due to metastasis of melanoma which was confirmed through cytological study of fine needle aspirate biopsy.

Fig. 4 . Healing with granulation on 10th day post operation.

DISCUSSION

Neoplasms in goats are rare, in comparison with other species of animals (Zubaidy, 1976). A survey of 800,000 slaughtered goats revealed only 70 neoplasms, 5 of which were melanomas (Bradley and Migaki, 1963). Melanomas arise from specialized cells containing melanin (melanoblasts) situated in the stratum germinativum of the epidermis. They may occur as solitary (Babic et al., 2009) as in present case or multiple lesions.

The causes of melanomas are uncertain, risk factors for melanomas in most domestic animals have not been fully described. In horses, the loss of melanin pigment with age and a tendency to develop on animals with grey or white hair coats have been identified as risk factors (Madewell and Theilen, 1987). Some reports suggest that dark-skinned and hairy female goats in the age range of 4 to 5 years goats are more often affected (Venkatesan *et al*., 1979 ; Ramadan *et al*., 1988). In the present case tumor had developed from the dorsal wall of medial hoof, while earlier reports have reported coronary band of the hoof (Venkatesan *et al*., 1979), skin, udders and the horn base as primary sites for malignant melanomas in goats (Mavangira *et al.*, 2008).

Reportedly, melanomas of goats are highly malignant, especially those arising on the digits and on mucocutaneous junctions are locally aggressive, and commonly metastasize to other organs via the lymphatics and the blood stream (Valentine, 2004; Smith *et al*., 2002;). In present case hard increasing swelling in region of prescapular lympnodes was noticed, FNAC examination of which revealed metastasis characterized by heavily dark black to green colour pigmented cells obscuring cellular and nuclear detail. Common sites for metastasis include regional lymph nodes, lungs, and liver, (Aydogan *et al.*, 2013).

Surgical excision, the oldest method in the fight against cancer, is still considered the treatment of choice (Mavangira *et al.*, 2008) but looking towards the extensive spread of tumor amputation of affected digit was performed under regional nerve block after application of a tourniquet which minimized intra-operative haemorrhage. The doe made an uneventful recovery with normal ambulation on all four limbs even though the prognosis of malignant melanomas in goats is considered guarded to poor (Ramadan *et al.*, 1988) or grave (Smith *et al.*, 2002).

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