



CASE REPORT

Malignant Melanoma in a Hallikar Bullock

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ABSTRACT

In the present case, a seven year old hallikar (Native breed of India) bullock was presented with a hard mass in the right maxillary area just posterior to oral commissure that was gradually increasing in size for the past 6 months. The tumor was surgically excised. Representative samples of the mass were subjected to histopathological evaluation. Microscopic pathology revealed neoplastic cells with heavy deposition of brownish black melanin granules and based on pathomorphological observations, it was diagnosed as a case malignant melanoma of low malignancy. The case was monitored for 3 months post surgically. The aim of this report is to describe a case of malignant melanoma, its pathology, surgical excision and post-operative observations in a bullock.

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INTRODUCTION

Tumors of melanocytic origin are considered to be common in gray horses and dogs (Sharma *et al.*, 2010). Though these conditions appear to develop infrequently in cattle (Moulton 1978; Crowel *et al.*, 1973; Pravettoni *et al.*, 2003; Babic *et al.*, 2009), few investigators have reported incidence of over 5 % with higher prevalence in Indian subcontinent (Reddy and Subba 1990; Pazhanivel *et al.*, 2003; Sharma *et al.*, 2010). There is no consensus in the use of terminologies to describe melanocytic neoplasms in both veterinary and human medicine (Smith *et al.*, 2002). While, benign forms of these tumors are referred to as “melanocytoma” in animals and nevus in humans, the malignant version is called malignant melanoma or simply “melanoma” (Smith *et al.*, 2002) in both the medical practices. The cancerous cells of melanoma arise from neuroectodermal melanoblasts which would have migrated initially through epidermal-dermal junctions of the skin, follicles and then to dermis during embryonic development. Melanotic tumors can be found in any location where melanocytes and blasts are present in the body such as skin, eyes, adrenal glands,

meninges, endocardium and tunica intima of blood vessels (Brito *et al.*, 2009). The commonest sites on skin are perineal region and base of the tail followed by head, udder, prepuce and limbs (Sharma *et al.*, 2010).

Draught animals play a major role in developing countries like India for agricultural practices such as ploughing and cart pulling. Hallikar is a farmer friendly champion draught breed native to south India with proven track record. The native cattle and buffalo breeds of India are considered to have natural immunity against many tropical disease conditions in comparison with the exotic breeds/cross breeds (Ramesha *et al.*, 2002). However, few researchers have reported disproportionate number of melanoma cases in the subcontinent (Reddy and Subba 1990; Pazhanivel *et al.*, 2003; Sharma *et al.*, 2010). The clinical, surgical and pathological presentation of a case of melanoma in a seven year old Hallikar bullock is put on record here to substantiate the higher prevalence of these neoplasms.

MATERIALS AND METHODS

A hallikar bullock aged about 7 years was presented to Veterinary hospital, Bankapur, Haveri district of

Karnataka state with a hard mass in the right maxillary area just posterior to oral commissure (Fig. 1). The animal owner informed that the mass appeared 6 months ago and increased in size with time.

On standing position, the animal was restrained with two wraps of ropes circling its head and horn in a trevis. Triflupromazine hydrochloride was administered intravenously at 0.1mg/Kg to achieve sedation. Local anesthesia was attained through ring block by infiltrating 10 mL of 2 % lignocaine hydrochloride in a circular fashion into subcutaneous tissue at the base of the mass. The growth was excised after elliptical incision and extirpated to near its completion. The ulcerated and necrosed areas of the skin flaps were debrided and surgical wound was closed by interrupted skin sutures (Fig. 2). Post-operatively Enrofloxacin was administered at 5mg/kg body weight intramuscularly once daily for 3 days. Surgical site was routinely dressed with povidone iodine ointment. The animal was monitored for 3 months post operation.

Representative samples of the mass were fixed in 10% neutral buffered formalin. The tissue sample was processed, embedded in paraffin and sectioned at 5 micron thickness and stained with routine hematoxyline and Eosin (H & E) stain employing standard procedures as per (Luna 1964).

RESULTS AND DISCUSSION

The growth was approximately 10 cm in diameter. On physical examination the mass in the right maxillary area just posterior to oral commissure was found to be roughly spherical in shape with ulceration and maggot infestation. Animal exhibited painful sensation upon touch. The melanomas have been reported to occur at various locations of the bovines such as flank (Sharma *et al.*, 2010), Achilles tendon (Babic *et al.*, 2009), outer thorax (Pravettoni *et al.*, 2003) brisket (Pazhanivel *et al.*, 2003), oral cavity (Brito *et al.*, 2009) and Skin (Miller *et al.*, 1995) in different age groups from 3 weeks (Miller *et al.*, 1995) to 6 years (Pazhanivel *et al.*, 2003; Pravettoni *et al.*, 2003; Babic *et al.*, 2009; Sharma *et al.*, 2010). The excised cancerous mass weighed 550 grams. Upon incision, it revealed multiple intensely dark black colored nodules (Fig. 3). Macroscopically, (Babic *et al.*, 2009) reported melanoma as thin, hairless, black and painless mass with elastic consistency and mobility on the surface. Laceration and ulcerations on tumor growth has been recorded (Pazhanivel *et al.*, 2003; Sharma *et al.*, 2010).

The microscopic pathology revealed dermis as the location of the neoplasm. The neoplastic cells showed heavy deposition of brownish black melanin granules in the cytoplasm (Baba *et al.*, 1983; Pazhanivel *et al.*, 2003; Pravettoni *et al.*, 2003; Babic *et al.*, 2009; Brito *et al.*, 2009; Sharma *et al.*, 2010) which masked the morphological features of nuclei (Fig. 4). The cells were pleomorphic, varying in shape from cuboidal to fusiform with occasional mitotic figures (Babic *et al.*, 2009; Brito *et al.*, 2009). In the past, in addition to these observations, nuclear pleomorphism and increased number of nucleoli has been reported (Baba *et al.*, 1983; Pazhanivel *et al.*, 2003; Babic *et al.*, 2009). Further, (Babic *et al.*, 2009) have also observed vacuolated non-pigmented cells. Babic



Fig 1: Location of the mass: Right maxillary area just posterior to oral commissure.



Fig 2: The wound edges were closed by simple interrupted sutures.



Fig 3: Tumorous mass upon incision revealing multiple intensely dark black colored nodules.

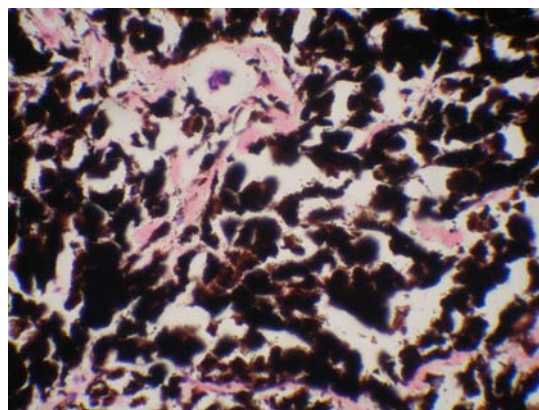


Fig 4: Heavy deposition of brownish black melanin granules in the cytoplasm (H & E, 40X)

et al., (2009) Stated that histopathological differentiation between benign and the malignant forms require clinicopathological evaluation considering the relative scarcity of the condition in bovines. The growth was diagnosed as malignant melanoma of low malignancy based on microscopic and clinicopathological features.

Recovery of the animal from excision surgery was uneventful. On post-operative day-10, skin sutures were removed. The bullock was observed up to 3 months at an interval of 15 days. It did not show visible sign indicative of recurrence of the growth and returned to its active work life.

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