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Ocular retiform haemangioendothelioma in a Hallikar bullock and its surgical treatment

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Abstract

A hallikar bullock was presented to the Veterinary Clinical Complex, RIVER with the complaint of an abnormal ocular mass in the left eye, progressing in size with profuse lacrimation for the past ten days. Physical and ocular examinations suggested that the abnormal tissue proliferation could be neoplastic which was present on the medial aspect of the left eye extending from the upper and lower eyelid, conjunctiva and nictitating membrane. Under sedation and local infiltration, a local tumour extirpation was performed. Histopathology of the extirpated mass revealed a well-differentiated neoplasm with long retiform vascular channels, and endothelial cells protruding into the lumen in a hobnail configuration, forming intraluminal papillae. Post-operative care along with routine wound dressing was undertaken. This article reports a case of retiform haemangioendothelioma of the eye in a hallikar bullock.

Keywords: *Bullock, eye, retiform haemangioendothelioma*

Ocular and periocular neoplasms, which cause major economic losses are frequently encountered in the veterinary profession. It may involve the orbit, eyelids, conjunctiva, cornea and intraocular tissues (Ceylan *et al*., 2012; Yakan *et al*., 2017). They have been reported in several farm animals. Bovine ocular and periocular neoplasms include lymphosarcoma, haemangioendothelioma, adenoma of the Meibomian and Moll's gland, fibrosarcoma, papilloma, melanoma, ocular squamous cell carcinoma have been reported (Ceylan *et al.*, 2012; Nabil and Tarik, 2014). Ocular squamous cell carcinoma is the most common (Ceylan *et al*., 2012; Yakan *et al*., 2017). Retiform haemangioendothelioma is a locally aggressive, very rarely metastasizing vascular lesion (Alexandre *et al*., 2009). It occurs in superficial or deep soft tissues of extremities, liver,

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lung, bone, and lymph nodes. It is an infiltrative neoplasm composed of elongated arborizing vessels, arranged in an anastomosing pattern that resembles that of the rete testis and lined by a single layer of hobnail-like endothelial cells that protrude within the narrow lumina. They are caused by abnormal growth of blood vessel cells, although the exact underlying cause for the abnormal growth is unknown (Luis and Heinz, 2013).

A 7-year old hallikar bullock was presented to the veterinary clinical complex, RIVER, with a history of an abnormal ocular mass on the left eye which is progressively increased in size with profuse lacrimation for the past ten days (Fig. 1). On clinical examination, the vital parameters like rectal temperature, respiration, pulse, prescapular lymph nodes were normal. Ocular examination revealed the mass extending from the upper and lower eyelid, conjunctiva and nictitating membrane and also partially obstructing the vision of the animal. No abnormality was detected on examination of other body systems. Haematological values were within the normal range. Based on all these examinations, surgical treatment was resorted to.

Fig. 1. Growth noticed on the nictitating membrane (left eye).

Fig. 2. Resection of mass by thermocautry at 90°C.

The animal was restrained in the standing position by administering 0.2ml of Inj. xylazine intravenously (Aruljothi *et al*., 2012) for mild sedation followed by auriculopalpebral nerve block with 2% lignocaine hydrochloride using a 22 gauge needle (11 cm) and local infiltration on the eyelid margins (Nita, 2016). Under aseptic conditions using electrocautery (cutting 90°C and coagulation 90°C) (Fig. 2) the abnormal mass from the upper and lower eyelid, the conjunctiva was removed and the nictitating membrane was resected (Fig. 3). It was difficult to remove the growth completely due to extreme involvement of the conjunctiva. Temporary tarsorraphy was performed using black braided silk size 1. Postoperatively, Inj. streptopenicillin @ 10 mg/kg B.wt (Body weight) I/M for 5 days, Inj. meloxicam @ 0.2 mg/kg B.wt (Body weight) I/M for 3 days, chloromycetin eye aplicaps administration along with wound dressing for five days were advised. The extirpated mass was subjected to histopathological examination after fixing in 10% buffered formaldehyde solution and processed tissue sections were stained with

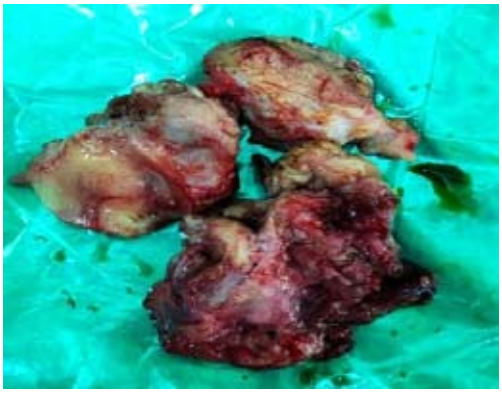

Fig. 3. Excised tumour mass from conjunctiva and nictitating membrane.

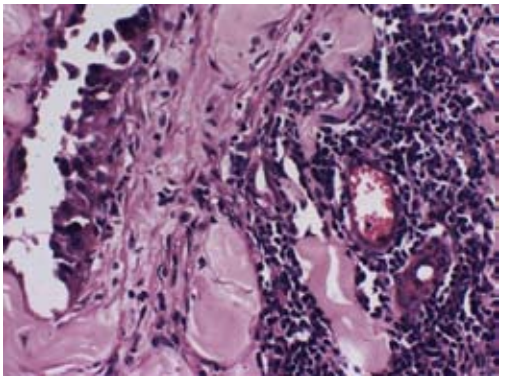

Fig. 5. Hobnail endothelial cells protruding into the lumen, lymphocytic infiltration/ hyperchromatic cells (H&E 40X).

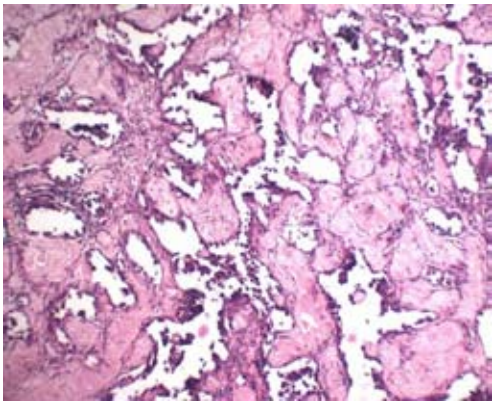

Fig. 4. Reticular pattern of blood vessels, collagen fibres (H&E 10X).

haematoxylin-eosin (H&E) and examined under a light microscope which revealed the case as retiform haemangioendothelioma.

In this case, histopathology of the extirpated mass revealed a well-differentiated neoplasm, with long, well-formed, retiform vascular channels lined by uniform ovoid cells with predominantly small nuclei that protrude into the lumen of the channels in a hobnail configuration and forming intraluminal papillae. The vascular channels were surrounded by hyalinized collagen and intense lymphocytic infiltrate/hyperchromatic cells, which dissect the collagen bundles (Fig. 4 and 5). Retiform haemangioendothelioma is a low-grade neoplasm with a higher rate of local recurrence very low metastatic rate and less percentage of developed metastases in regional lymph nodes or lungs, liver, and bone. In human medical literature, retiform haemangioendothelioma is an established and well-recognised histopathological variant of endothelial tumours. Vascular tumours can arise from the endothelial cells of either the blood-vascular or lymphatic system (Gearhart *et al.,* 2007). Ocular and periocular neoplasms could be treated by surgical extirpation, cryotherapy, hyperthermia, photodynamic therapy, immunotherapy, chemotherapy and radiotherapy or by a combination of these methods (Michelle and David, 2001). In the present case, small, localized neoplasms causing partial loss of vision but with no effect on bulbus oculi were treated by local surgical extirpation. Recurrence of neoplasia was not observed in surgical excision of haemangioendothelioma after 20 months of surgery (Laus *et al.,* 2008). But in the present study recurrence of the mass was reported 6 months post-surgery.

Summary

A case of retiform haemangioendothelioma of the nictitating membrane is presented with the details of histopathological observations to confirm the pathology and surgical treatment. In the present case the attachment was extending to the inner canthi of the eye and complete removal was impossible. Recurrence was reported after 6 months post-surgery. Complete excision is recommended to prevent the recurrence.

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Conflict of interest

The authors declare that they have no conflict of interest.

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