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Clinical Report

Haemangiosarcoma of the Eyelid in a Four-Year Old Balami Ram

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Abstract

Case Description-A four-year old Balami ram weighing 120kg was presented to the University of Maiduguri Veterinary Teaching Hospital (UMVTH) with extensive swelling and ulceration of the nictating membrane of the left eye.
Clinical Findings-A dark red hard mass on the third eyelid was covering the entire eyeball. The visible mass measured 5cm vertically and 7cm horizontally. Pus exudate was expressed from the nictating membrane. Full blood count revealed normal blood values.
Treatment and Outcome-Treatment involved surgical removal of the hard mass by thermocautery under sedation and general anaesthesia. The ram was premedicated with Xylazine hydrochloride 0.1mg/kg IV. General anaesthesia was induced and maintained with Ketamine hydrochloride 5mg/kg IV. Histopathological examination of samples showed numerous vascular spaces lined by multilayered neoplastic endothelia. Complete surgical excision was not curative due to recurrence.
Clinical Relevance- Haemangiosarcoma are common tumors in dogs, cats, horses and swine and only few cases in ovine species were reported for the first time in the last decade. Eyelid tumours cause discomfort, interfere with eyelid function and may cause keratitis and Surgery remains the basic method of treatment in oncology.
Key Words- Haemangiosarcoma, Eyelid, Ram.

Case Description

A four-year old Balami ram weighing 120kg was presented to the Surgery Unit of the University of Maiduguri Veterinary Teaching Hospital (UMVTH) for evaluation of a mass on the left eyelid of an unknown duration. According to the case history, the client bought the animal with the eyelid mass.

Clinical Findings

The vital parameters of the ram on clinical evaluation revealed normal rectal temperature (38.7^{O}C), respiratory rate (31cpm), and heart rate (72bpm).

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On physical examination, a dark red hard mass was found on the nictating membrane covering the entire eyeball. There was extensive swelling (Fig. 1 thin arrows) and ulceration of the nictating membrane with foul smelling exudates. The right ocular structures were normal on the examination. All other findings on physical examination were normal. The differential diagnosis included: tumors such as squamous cell carcinoma, primary intraocular melanoma, intravascular papillary endothelial hyperplasia and non-neoplastic lesions such as inflammatory granulation tissue.

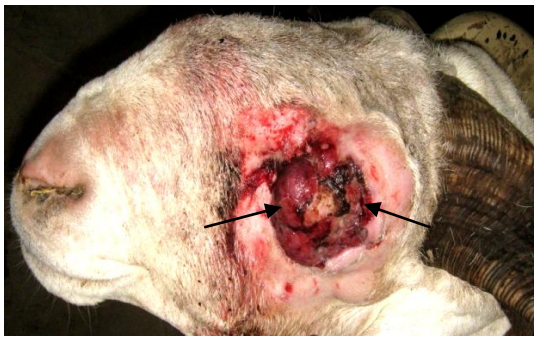

Figure 1. Tumour after shaving

Treatment and Outcome

The affected eye was shaved peripherally, washed and scrubbed with 4% Chlorhexidine gluconate (Savlon® pharmedica laboratories (pty) Ltd, Division of Johnson & Johnson, Rattray road, Dawn, East London, South Africa) applied to a sterile gauze. The ram was premedicated with Xylazine hydrochloride (0.1mg/kg IV; Sedazine® Fort Dodge Animal Health, Iowa, USA) followed by induction and maintenance of general anesthesia with Ketamine hydrochloride (5mg/kg IV;Rotex medicalthreat, Germany). A local ring infiltration around the orbit was done with Bupivacaine (3ml of 2% Bupivacaine) Marcaine®HCl. The animal was placed on a sternal recumbency throughout the procedure. Thermocautery was employed to remove the mass. The entire growth was excised and removed in fragments leaving a fresh wound and a cloudy eyeball was revealed (Fig. 2: Curved down arrow). The excised tissue was placed in a sample bottle containing 10% buffered formalin and prepared for histopathology according to standard procedure. [2] Recovery from anesthesia was uneventful.

Figure 2. post-operative site

The wound was dressed daily with Penicillin ointment after cleaning with chlorhexidine gluconate. Chloromphenical eye ointment 1% w/w (Varmycin®, Alpha Laboratories, India) was applied into the eye daily for seven days. Intramuscular injection of procaine penicillin (8mg/kg) and dihydrostreptomycin sulphate (10mg/kg), (Penstrep® Anglican Nutrition Products Company Crockatt road, Lady Lane Industrial EstateHadleigh, Suffolk, IP76RD,UK), this was achieved by administering 1ml per 25kg of the pen strep IM, once daily for a week. Dexamethasone Sodium phosphate (Pemadex®Hubei Tianyao pharmaceutical co., Ltd, Xiangfan, Hubei, China) was administered 2mg I.M for 3 days to reduce inflammation. There was improvement on the general condition of the animal for the first two weeks of treatment, but recurrence was noted at three weeks during four weeks follow up period.

The fixed tissue was processed, according to standard techniques and microscopically examined.[2] Histopathology of the tumor mass revealed numerous vascular spaces lined by multi-layered endothelial cells (Fig. 3 thin arrows) with mitotic figures (m) (Fig. 4 thick arrows). These findings were suggestive of haemangiosarcoma (HSA). A vascular structure with anastomoses lined by immature endothelial cells, arranged on the basal membrane were eminent and the endothelial cells are pleomorphic. Nuclei are ovoid or round and hyperchromatic, with multiple mitotic figures.

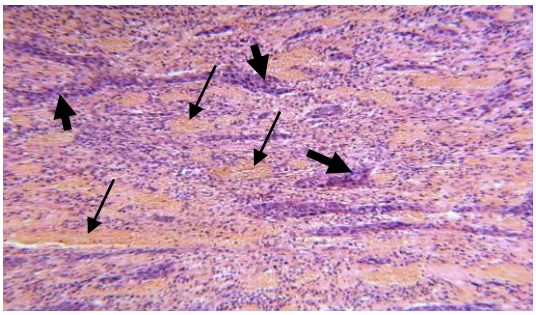

Figure 3. Photomicrograph of tumour mass showing numerous vascular spaces (thin arrows) lined by multi-layered endothelial cells (thick arrows). H&E x 400

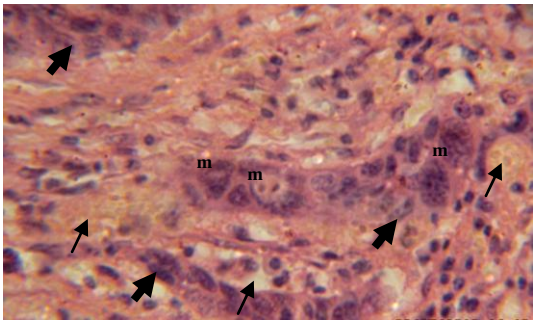

Figure 4. Photomicrograph of tumour mass showing numerous vascular spaces (thin arrows) lined by multi-layered endothelial cells (thick arrows) with mitotic figures (m). H&E x 1400

Clinical Relevance

Haemangiosarcoma (HSA) is a tumor of endothelial cells. Since blood vessels are in nearly all tissues in the body, this cancer can arise in nearly all tissues[11, 10], the diagnosis of this eyelid HSA confirms this report.

Previously HSA have not been reported in sheep until recently in the last decade.[8] This is the first reported case of eyelid haemangiosarcoma in ovine species in Nigeria. Eyelid masses may be inflammatory or neoplastic, as it is neoplastic in this reported case; it causes discomfort, interfere with eyelid function and may cause keratitis.[3] The affected eye of the ram was cloudy and signs of discomfort were eminent.

HSA is as threatening as it attempts to build its own network of blood vessels, which disrupts normal organ

function.[1] Haemangioma (HMA) and HSA have been reported in sheep, cattle, horses, swine, dogs and fowls but the frequency of occurrence was only estimated in dogs and cats.[12] The tumour has been reported mostly in the Middle East in sheep and few in Europe, for example the gingival hemangioma in a sheep in Iran [6] and subcutaneous HSA in sheep in Basrah Iraq. [5] Also reported was in Italy of morphological, histopathological and immunohistochemical diagnosis of cutaneous haemangiosarcoma in sheep.[8] The sites of predilection and the increased risk of disease in outdoor animals in sunny climates and high altitudes suggest that this disease is probably triggered by chronic actinic radiation injury. The tumours that are well circumscribed and consist of bland of endothelium are classified as haemangiomas, and those formed by hyperchromatic endothelium with atleast moderate anisokaryosis and peripheral invasion are classified as haemangiosarcomas[13]. The extremely rapid growth, metastasis in organs and tissues, as well as postoperative recurrences of HSA gave it a grave prognosis and these made clinicians to show much concern for the disease.

The cause of most HMA and HSA is unknown but as earlier suggested, chronic solar radiation on lightly pigmented, sparsely haired body parts may also contribute to the development of cutaneous HMA and HAS [4, 7], this may be the risk factor in other animals like sheep in this case. Ocular hemangiomas and hemangiosarcomas can affect the conjunctivae, the nictitans membrane and may spread further into the globe, the orbit, the local lymph node and the eyelids including the facial muscles. Three conventional locations are known in most cases: dermal form (skin), hypodermal form (subcutis), and visceral form (on the spleen, lungs, heart, liver).

Dermal HSA often appear as a dark to purple skin lesion which may be raised and appear on hairless areas like the orbit and abdomen.[1] This ovine eyelid HSA is a dermal form.

HSA was reported in the omentum and eyelid of a horse and the horse was euthanatized because the entire tumor could not be excised.[9] Similarly, the ram in this case was culled due to evidence and magnitude of recurrence after complete ophthalmic examination a month after surgery.

In conclusion, sheep can develop ocular HSA in this environment possibly predisposed by chronic exposure to sunlight on unpigmented and hairless parts of the body. It is therefore recommended that animals in this area should be provided with sheds to protect them from excessive sunlight.

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چکیده

همانژیوسارکوم پلک در یک راس قوچ ۴ ساله نژاد بالامی

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توصیف بیمار- یک راس قوچ ۴ ساله نژاد بالامی با وزن ۱۲۰ کیلوگرم با تورم شدید و زخم پلک سوم چشم چپ به بیمارستان آموزشی دامپزشکی دانشگاه میدوگوری ارجاع داده شد.

یافته‌های بیماری- یک توده سخت به رنگ قرمز تیره روی پلک سوم کل کره چشم را پوشانده بود. ابعاد توده قابل مشاهده ۵×۷ سانتی-متر بود. ترشحات چرکی از پلک سوم وجود داشت. شمارش کل سلول‌های خونی بیانگر مقادیر نرمال بود.

درمان و نتیجه- تحت آرام بخشی و بی‌هوشی عمومی توده سخت با ترموکوتر برداشته شد. قوچ با زایلازین هیدروکلرید (۰/۱ میلی‌گرم به ازای کیلوگرم، وریدی) پیش‌بیهوشی داده شد. بیهوشی عمومی القا شد و با کتامین هیدروکلرید (۵ میلی‌گرم به‌ازای کیلوگرم، وریدی) حفظ گردید. در هیستوپاتولوژی فضاهای عروقی متعدد که با اندوتلیوم نئوپلاستیک چند لایه، جدا شده بودند قابل مشاهده بود. برداشت کامل با استفاده از جراحی بدلیل برگشت مجدد بهبود دهنده نبود.

کاربرد بالینی- همانژیوسارکوم یک تومور معمول در سگ، گربه، اسب و خوک می‌باشد و تنها موارد اندکی برای اولین بار در گوسفند در دهه گذشته گزارش شده است. تومورهای پلک باعث عدم راحتی، تداخل با عملکرد چشم و کراتیت احتمالی می‌شوند و جراحی روش اصلی برای درمان می‌باشد.

کلمات کلیدی- همانژیوسارکوم، پلک، قوچ.