A case of primary intraocular malignant iris melanoma in an Akkaraman sheep

I. CANPOLAT1*, I. YAMAN2 and C. GUNAY1

1 Department of Surgery, Veterinary Faculty, Firat University, Elazig, Turkey
2 Department of Pathology, Veterinary Faculty, Firat University, Elazig, Turkey
*Corresponding author: E-mail: icanpolat@firat.edu.tr

SUMMARY

A tumoral mass was observed protruding of the left eye of a three years old Akkaraman Sheep. At clinical examination the mass was found to be infected and to cover the entire ocular surface. The eye was enucleated, submitted to histopathological examination, and diagnosed as a primary intraocular malignant iris melanoma. The case responded the treatment well with no sign of reoccurrence or metastasis during 6 months of follow-up period. The success of the treatment is believed to be due to total removal of the tumor prior to the development of metastasis.

Keywords: Intraocular, tumor, malignant, iris, melanoma, sheep

Introduction

Melanomas are common in dogs [11], cats [1], horses [15], and some lines of miniature swine [6]. They are seen occasionally as congenital lesions in pigs, goats and calves [14,18]. Melanomas usually are cutaneous neoplasms but can occur wherever melanocyte clusters are found. Eye and mouth are common sites, but meninges, bone, aorta, etc. are all reported sites [8]. Although tumors of the eye and its supporting tissues in domestic animals are relatively rare, they assume an enhanced importance because of the visibility and effect on function of even small tumors within, or adjacent to, the eyes. Although tumors within the globe may or may not be readily visible, their effect on ocular function can be dramatic, leading to visual defects, discoloration, discomfort, or a change in shape of the globe. These are the consequences of ocular neoplasia that cause an animal owner to seek veterinary attention. The globe tumors may be small and are often not apparent from the external surface of the extracted globe [4,10].

This paper describes the clinical and histopathological features of an outbreak of ocular melanoma in an Akkaraman sheep in east anatolia in Turkey. To our knowledge, intraocular iris melanoma has not been previously reported in an Akkaraman sheep.

Case report

A three years old Akkaraman sheep had an history of tumoral growth in its left with resulting exophthalmia. The tumours grew fast over a period of one month, with complications by bacterial infections. In clinical examination, the tumoral mass was found to be enfeated and covered all over the left eye (Figure 1). Because of development of the keratoconjunctivitis sicca and pannus which it was impossible to conduct intraocular examinations. Thoracic radiographs revealed a mild interstitial pattern, the regional lymphs, the abdominal organs and the cutaneous tissue was found normal. The blood profile evaluation revealed no abnormalities in the lymph nodes suggestive of metastasis. The eye was enucleated (Figure 2, 3) and submitted to histopathological examination. The tissue was fixed in 10% neutral buffered formalin, embedded in paraffin, sectioned at 5 µm in thickness, and stained with hematoxylin and eosin (HE), Periodic acid of Schiff (PAS), PAS alcian blue, Masson’s trichrom or Masson’s Fontana methods [2].

Histopathologically, the tumor occurred in spindle shaped cells which has illustrated commonly as pleomorphism. But sometimes cells which has been seen in epithelial typed were found. These two types of the cells forming the tumor, caused epithelial pealing in some area by invasion to superficial epithelial and also caused ulceration. In some melanin staining used melanin pigment were found in high dense in these cell types (Figure 4). Histopathological examination of the tumors revealed primary intraocular malignant iris melanoma, surrounded by a moderate to abundant infiltrate of lymphocytes, plasma cells and macrophages.
Discussion

Ocular melanocytic proliferation include melanomas of eyelid, conjunctiva, benign epibulbar or iris naevi, and malignant uveal melanomas. They are common in dogs [5, 9] and cats [1], and are rare in other domestic species [5, 7, 10]. The histologic diagnosis is likely to be made on surgically excised tumors, although entire eyes enucleated with a diagnosis of extra scleral extension of anterior uveal melanoma are also to be anticipated. Since transcleral extension of uveal melanoma may give a clinically similar lesion that even gonioscopy may not distinguish, the pathologist must retrospectively determine whether tumor originated in sclera or in ciliary body. Uveal melanomas fall into three broad categories: benign iris naevi, anterior uveal malignant melanomas, and choroidal melanomas. The uveal melanoma is limited largely to animals. Most arise within the stroma of the ciliary body and later spread to involve iris, posterior chamber, filtration angle, and sclera. This origin differs sharply from that seen in humans [12, 15, 16, 18], where most primary ocular melanomas are choroidal. In dogs and cats, primary choroidal melanomas are so unusual that choroidal melanoma should be considered metastatic until proven otherwise [8].

The clinical presentation of uveal melanoma may be of a black mass protruding from the posterior chamber into the pupil, but most cases are presented with anterior uveitis, and about half have glaucoma. The uveitis may result from necrosis of the tumor or from glaucoma [13]. The glaucoma is seen in most advanced cases and results from compression of the angle by ciliary or iris tumor growth, or by plugging of the angle by exfoliated tumor cells. Although the clinical diagnosis may be masked by the uveitis, hyphema, or glaucoma-induced corneal edema, the histologic diagnosis is readily made [7, 14].

Ruminant reports are limited to a intraocular malignant melanoma in a sheep, goat, cattle [9,10,12,17] and others [6, 8]. There is paucity of clinical reports describing ocular melanocytic tumors in this species. The diagnosis of intraocular malignant iris melanoma in this sheep was based on the history and clinical sign and was confirmed on histopathology of globe after enucleation. In clinical examination, the tumoral mass was found to be enfected and covered all over the left eye. Because of development of the exophthalmia, keratoconjunctivitis sicca and pannus, it was impossible to conduct intraocular examinations. The malignant melanomas should be considered metastatic until carefully made clinically examinations [9]. In a experimentally study in rabbit, the malignant
INTRAOCULAR MALIGNANT TUMOR IN SHEEP

melanoma had metastasis to lungs, liver and periferal tissue [3]. Clinical and hematological examinations showed no abnormality in the lymph nodes, thoracal and abdominal organs and any alteration in blood profile, suggesting that tumor was still it at early stage and had not yet involved in blood and lymph systems, known as the main ways of metastasis. The other cause of the successful surgical therapy might be due to the site of the tumor since it made it possible to remove the mass fully. No sign of complication and local or general metastasis was found clinically examinations during 6 months of follow up period.

References