Epibulbar melanocytoma in a goat

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1. Introduction
Epibulbar (limbal) melanocytomas originate from a neoplastic transformation of melanocytes, which are located near Descemet's membrane, close to the junction of the cornea and sclera, and are benign (1). Melanocytoma is probably the second most common tumor of the eyelid in dogs. It will also occasionally occur in cats and in gray horses (2,3) and it is rare in sheep and goats (4). Although malignant melanoma has been reported in goats in different studies (5–8), there is no report of epibulbar melanocytoma in a goat and the authors think that the present case is the first recorded case of epibulbar melanocytoma in a goat.

2. Case history
A 2-year-old female crossbreed goat that was suffering from respiratory insufficiency, emaciation, depression diffuse corneal opacity, and anemia was euthanized. There was a mass on the dorsal interface of the cornea and sclera of the left eye. It was raised, dark, and 2 mm in diameter. The histopathologic evaluation revealed melanocytoma and immunolabeling for Melan-A was positive. According to gross and microscopic evaluations, epibulbar melanocytoma was diagnosed and the authors think that the present case is the first recorded case of epibulbar melanocytoma in a goat.

Abstract: Melanocytoma is a benign tumor arising from the melanocytes. A 2-year-old female crossbreed goat that was suffering from respiratory insufficiency, emaciation, depression diffuse corneal opacity, and anemia was euthanized. There was a mass on the dorsal interface of the cornea and sclera of the left eye. It was raised, dark, and 2 mm in diameter. The histopathologic evaluation revealed melanocytoma and immunolabeling for Melan-A was positive. According to gross and microscopic evaluations, epibulbar melanocytoma was diagnosed and the authors think that the present case is the first recorded case of epibulbar melanocytoma in a goat.

Key words: Epibulbar melanocytoma, goat, eye

3. Results
Histopathologic evaluation of the eye sections revealed a ball-shaped mass that was composed of mixture polygonal (epithelioid) and spindloid melanocytes (Figures 1 and 2). Heavily pigmented neoplastic cells were arranged in clusters and there were nests of polygonal cells and solitary spindloid cells within the fibrovascular stroma. The nuclei of melanocytes were obvious in bleached sections and they were spherical in polygonal and fusiform in spindloid cells (Figure 3). There was diffuse collagenous stroma between the neoplastic cells. No mitoses were seen. Immunohistochemical results of Melan-A staining illustrated intense brown coloration in the cytoplasm of melanocytes (Figure 4).
Macroscopic and microscopic inspections of other organs revealed chronic pleuropneumonia, hemonchosis of the abomasum, and diffuse cysticercosis of the liver, which were the main reason for the clinical disorders. Respiratory insufficiency was due to chronic pleuropneumonia. Moreover, emaciation and anemia resulted from parasitic infestation of the liver and abomasum, and diffuse corneal opacity was due to the existence of epibulbar melanocytoma.

4. Discussion
Melanocytoma of the globe can occur in several locations, but the most common is the anterior uveal tract, either in the iris or the ciliary body stroma. There is only one report of melanocytoma in goats, which is related to dermal melanocytoma in the hooves (9). The tumors originating from melanocytes are most often seen in female goats (7,8). In the present case also, the animal was female.

Differential diagnoses must be considered during the examination and according to macroscopic position. The differential diagnoses include palpebral conjunctival melanoma, uveal melanoma with episcleral extension, and staphyloma (10). The tumor had grown outwardly as a protruding spherical nodule with expansion into the peripheral cornea and no projection into the uvea and so epibulbar melanocytoma was suspected first.

Tumors originating from melanocytes in the limbal sclera (epibulbar melanoma and melanocytoma) are always benign. Epibulbar melanocytomas are always composed of heavily pigmented large round cells either alone or mixed with small numbers of heavily pigmented spindle
cells (4). In this case, there were both cell types within the fibrovascular stroma with low cellular polymorphism and rare mitoses, which indicate a benign entity. The MART-1/melan-A antigen is specific for the melanocyte lineage and is found in normal skin, the retina, and melanocytes, but not in other normal tissues. It is used as a marker for melanocytic tumors. MART-1/Melan-A is a putative 18 kD transmembrane protein consisting of 118 amino acids. It has a single transmembrane domain (11,12). Although Melan-A was considered a good marker for canine melanomas (13), it has not been used in melanocytic neoplasia in goats. In the present study, we used this antibody and positive immunolabeling was observed.

According to histopathologic and immunohistochemical testing, epibulbar melanocytoma was diagnosed and the authors think that the present case is the first recorded case of epibulbar melanocytoma in a goat.

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References