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TUMORS OF THE CANINE CONJUNCTIVA, EYELIDS, AND ORBIT

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Primary Tumors of the Conjunctiva

Limbal and Conjunctival melanocytic tumors
Limbal (episcleral) melanocytic tumors are rarely malignant such that the vast majority is melanocytoma, which occur as a pigmented mass in the limbal sclera. Limbal melanocytic tumors occur in German shepherd dogs more frequently than other canine breeds.

In contrast, conjunctival melanocytic tumors in dogs are generally malignant melanoma. They are frequently less pigmented and may be multifocal. Microscopically, there is cellular atypia, mitotic figures, and intraepithelial clusters of neoplastic cells that may occur several millimeters from the main mass. For this reason, complete surgical excision is difficult despite clear demarcation of the mass grossly. Recurrence and local infiltration are common although conjunctival melanocytic tumors infrequently metastasize.

Papillomas
Papillomas occur on the haired skin of eyelids, conjunctival epithelium, and rarely on the cornea. For the purpose of this study, we chose to categorize them all as conjunctival tumors. Based on morphologic features, we recognize three categories of ocular papillomas in dogs: viral, reactive, and squamous. All are benign and generally cured with surgical excision. Reactive papillomas are inflammatory lesions and frequently co-exist with meibomian gland hyperplasia or a meibomian gland tumor. Canine viral papillomas can occur at any age, but primarily affect young dogs. Squamous papillomas are unique to the canine conjunctiva and have an unknown etiology.

Hemangioma & Hemangiosarcoma
In the largest study to date of primary conjunctival hemangioma and hemangiosarcoma, both tumors were shown to recur after surgical excision although metastasis was not documented. The most common anatomic sites are the leading edge of the nictitans and the temporal bulbar conjunctiva.
Several breeds are over-represented in the COPLOW database with respect to conjunctival hemangiosarcoma. It has been proposed that development of conjunctival hemangiosarcoma may be associated with exposure to ultraviolet radiation, as may be expected in outdoor working and sporting breeds. 20, 21

Tumor of the gland of the third eyelid

Tumors of the gland of the third eyelid occur occasionally in dogs. Most are malignant adenocarcinoma and tend to be invasive such that large tumors require enucleation of the globe in order to achieve clean surgical margins. The neoplastic cells are frequently anaplastic and immunohistochemistry is helpful in differentiating this tumor from other neoplasms.3 There are morphologic variants of tumors of the gland of the third eyelid, including complex adenocarcinoma and myxoid adenocarcinoma, which have yet to be fully characterized.

Primary Tumors of the Eyelids

Tumors of the eyelids are a microcosm of tumors of the skin, with the exception of meibomian gland tumors which are sebaceous neoplasms unique to the eyelid margin. This survey is in agreement with previous reviews that identified sebaceous tumors, melanomas and papillomas as the most common canine eyelid tumors.

Meibomian gland tumors

Meibomian gland tumors are common in dogs, but occur rarely in cats, and the vast majority is benign. The shih tzu, standard poodle, and cocker spaniel are slightly more likely to be diagnosed with a meibomian gland tumor. Not surprisingly, these breeds are generally accepted to be predisposed to developing benign cutaneous sebaceous tumors.

Eyelid melanocytic tumors

Canine eyelid melanocytic tumors are generally benign and share features with cutaneous melanocytoma. Both the vizsla and Doberman pinscher breeds are predisposed to eyelid melanocytic tumors.

Mast Cell tumor

Mast cell tumors occur more frequently on the eyelid than the conjunctiva. There is currently no agreement on an appropriate grading system for canine conjunctival mast cell tumors. In our experience, they are generally morphologically low to intermediate grade and clinically benign. In a previous investigation of conjunctival mast cell tumor excisional biopsies from the COPLOW database, most dogs responded well to conservative surgical resection (approximately 80% had dirty surgical margins) and none were known to have died from tumor-related disease.

Various round cell tumors

If clearly associated with the haired skin of the eyelid, the grading system for cutaneous mast cell tumors may be applied to eyelid mast cell tumors in dogs. Eyelid histiocytoma does not differ substantially from canine cutaneous histiocytoma that occurs elsewhere on the body; accordingly it is most common in young dogs. Cutaneous plasmacytoma rarely occurs in the eyelid and has been previously reported in dogs.
Primary Tumors of the Orbit

Canine Orbital Meningioma

Meningioma is the most frequent orbital tumor in dogs. Canine orbital meningioma is distinct from intracranial meningioma in terms of clinical presentation, diagnostic imaging and histopathology. These tumors generally develop slowly and are locally invasive with a tendency to completely envelop the optic nerve. Although the globe is typically spared, the mass may displace and indent the posterior sclera. As such, dogs may present with exophthalmos and diagnostic imaging may reveal a retrobulbar mass. Ocular meningiomas are believed to arise from the arachnoid cap cells within the optic nerve sheath. These cap cells penetrate and reside outside the dura mater of the intraorbital optic nerve. In one study, no tumors metastasized, however local recurrence was common since complete surgical resection is rarely possible.

Lobular orbital adenoma

As the second most common canine orbital tumor, lobular orbital adenoma is unique to dogs. These tumors are presumed to arise from small, unnamed glands of the conjunctiva, most likely lacrimal or salivary. Lobular orbital adenomas are grossly nodular, translucent, and friable masses that expand the conjunctival and orbital soft tissues. These tumors are benign, but post-excisional recurrence is likely due to the difficulty in acquiring clean surgical margins.

A wide variety of mesenchymal tumors occur sporadically in the canine orbit.