

Case Report: Ocular remnants leading to orbital cyst formation seven years post enucleation in a dog

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Purpose

To describe an unusual case of late-onset complications post enucleation in a dog.

Methods

The case of an 8-year-old male Leonberger referred for evaluation of a progressive non-painful orbital swelling 7 years after enucleation of the right eye is described.

Results

One year prior to referral to our clinic, the dog was diagnosed with an infected orbital abscess at the enucleation site. It healed successfully after treatment with orbital drainage and systemic antibiotics. The dog developed a non-painful orbital swelling starting six weeks prior to referral to our clinic (Fig. 1). The referring veterinarian performed cytology and antimicrobial testing of the aspirated fluid with the diagnosis of a sterile serous fluid accumulation. Ultrasonography and a Computed Tomography scan (Fig. 2) showed a cystic well-circumscribed structure within the right orbit. During *in toto* surgical excision of the cystic lesion, areas of presumed extraocular muscle insertions as well as pigmented soft tissue similar to the choroid were observed (Fig. 3). Histopathology (Figs. 4A-D) revealed remnants of tear glands, scleral and choroidal tissue with mildly hypertrophic RPE cells and melanosis oculi without neoplastic or inflammatory components. Only scleral and choroidal tissue could be clearly assigned. Due to the long-standing persistence and increased intralesional pressure, identification and assignment of the remaining intraocular tissues were restricted. Iris or ciliary body tissue could not be identified. One week post-surgery, the dog was presented for a severe seroma formation and a progressive skin necrosis at the surgery side. The seroma and skin necrosis healed by secondary intention without the need of surgical intervention four weeks post-surgery. There was no recurrence over an 8-month follow-up period.



Fig. 1

Clinical picture of the dog showing the non-painful swelling of the right orbit.

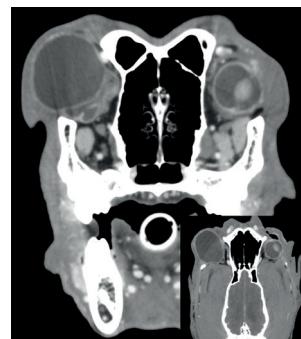


Fig. 2

Transverse and reformatted small dorsal CT image at the level of the orbit in soft tissue algorithm, contrast series. (right is to the left) Well delineated, space occupying lesion in the right orbit showing thin rim enhancement and homogeneous central fluid attenuation, creating a globe-like appearance.

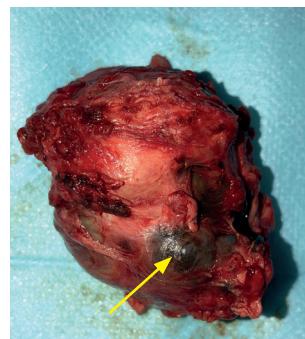


Fig. 3

The cystic lesion after *in toto* surgical excision with the choroid-like tissue (arrow) is shown.

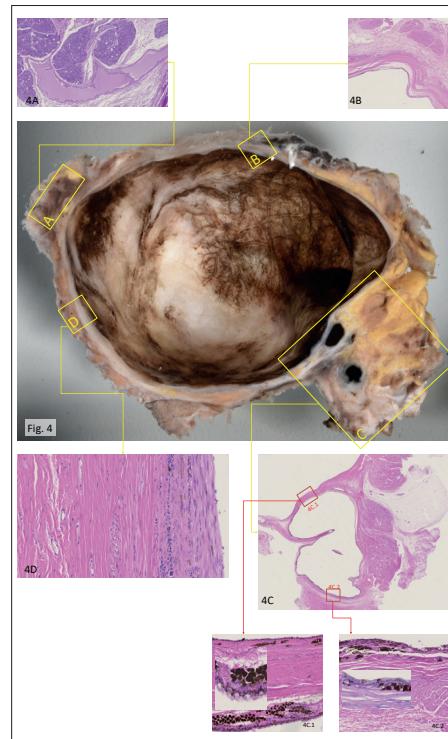


Fig. 4

Macroscopic aspect of sagittal bisected sample material (8 x 4 cm). Inside reveals a marked pigmentation. The lateral parts are composed of orbital connective, muscle and adipose tissue.

Fig. 4A

Section of regular tear glands with mild secretion and filled dilated excretory duct (PAS-reaction).

Fig. 4B

Lamellar arranged dense connective tissue, covered internally by isoprismatic to cuboidal pigmented cells (HE stain).

Fig. 4C

Unilateral partially septated excavation in the deeper histological section.

Fig. 4C.1

Sclera-like tissue protrusion, unilateral covered by isoprismatic pigmented cells. The contralateral side is composed of vascularized, cuboidal pigmented tissue, resembling the RPE. The adjacent stroma reveals choroid-comparable vascularization (HE stain). Inset: Higher magnification of RPE- / choroid-comparable tissue components.

Fig. 4C.2

Peripheral sclera and irregularly arranged muscular tissue is internally covered by cuboidal or round, partly pigmented, partly non-pigmented cells. These cells resemble pigmented / non-pigmented cells of the ciliary body with mild signs of atrophy (HE stain). Inset: Higher magnification (PAS reaction).

Fig. 4D

Dense, collagen-rich, poorly vascularized connective tissue (resembling scleral tissue) with mild lympho-plasmacytic infiltration, internally covered by weakly pigmented, partly fibroblast-like cells (HE stain).

Conclusion

Even seven years after enucleation, ocular remnants can lead to orbital cyst formation and should be taken into account when evaluating patients with orbital swelling after the removal of an eye.