

TITLE

Gonioscopic, Ultra Biomicroscopic, Light and Scanning Electron Microscopic imaging of a diffuse iris melanoma in a cat.

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Purpose: This study aims to provide original imaging of a diffuse iris melanoma in a cat through gonioscopy, ultra biomicroscopy (UBM), light microscopy (LM) and scanning electron microscopy (SEM).

Methods: An 11 year old female cross-breed cat was presented with a progressive browning of the left eye over several weeks. The cat had not received any treatment prior to presentation. Complete ophthalmic examination, gonioscopy and UBM were performed.

Results: On clinical examination there were no obvious signs of ocular pain. Vision testing was normal. The right eye had a slightly D-shaped pupil but appeared otherwise normal. The left iris showed a reverse D-shaped pupil and a severe “cocoa-like” hyperpigmentation. On that side, fundus examination and intraocular pressure were normal, but gonioscopy showed dramatic hyperpigmentation of the ICA, and UBM revealed an important thickening of the iris root and filing of the ciliary cleft. The origin of the dyscoria of both eyes was unidentified. Although differential diagnosis included iris naevi and senile pigmentation, the most likely diagnosis was diffuse iris melanoma (DIM). Due to the potential risk of metastasis and despite the eye was visual, a transconjunctival enucleation was performed. The globe was fixed in formalin and cut in half along the sagittal axis. One half was routinely processed for histopathologic examination and the other half was prepared for a scanning electron microscopic evaluation.

The diagnosis of DIM was histologically confirmed with massive infiltration of the iris, ciliary body, pectinate ligament, uveal and corneo-scleral trabecular meshworks. Emboli were not visible. SEM examination showed many melanocytes invading the iris surface, pectinate ligament, trabecular meshworks, corneo-scleral portion of the ciliary cleft, ciliary processes. Emboli were visible in the scleral venous plexus. Unfortunately, the cat was unavailable for follow up examinations 18 months after surgery; therefore, the existence of organ metastasis was not investigated.

Conclusion: This case-report provides an original iconography of a diffuse iris melanoma in cats. To the authors' knowledge, this is the first SEM illustration of this neoplastic entity, in which the precise systemic behaviour is unknown.

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