Feline ocular post-traumatic sarcoma in ten cats that had intraocular lens surgery

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Feline Ocular Post-traumatic Sarcoma

- Occurs months to years after traumatic event damages lens with an average of 7 years
- Other risk factors include chronic uveitis, intraocular surgery, gentamicin injections
- 3 variants: spindle cell(70%), round cell(24%), osteo/chondrosarcoma(6%)
Feline Lens Disease

- Cataracts less common than in dogs
- Causes of cataracts can be inherited, congenital, or secondary to trauma, anterior uveitis, glaucoma, lens luxation
- Lens luxation can occur with buphthalmos, hypermature cataract, uveitis, senile degeneration of zonular ligaments, or trauma
COPLOW Database Findings

- 35 lens surgery cases in cats
- 12 with tumors (10 PTS, 2 lymphoma)
- 281 canine enucleations following lens surgery
- 3 with tumors (2 uveal melanocytomas, 1 metastatic hemangiosarcoma)
- 292 cases of feline post-traumatic sarcoma
Case Signalment and History

- Age range of 4 to 18 years old with an average of 12.7 years
- Nine were domestic shorthair and one domestic long hair breed
- 7 were castrated males and 3 were spayed females
- 5 had history of lens luxation and 5 had history of cataracts
- 5 had history of chronic uveitis
- 3 had intraocular lens prostheses present at time of enucleation
- When available the average time between lens surgery and enucleation was 4.8 years
Case Diagnoses

- 4 cases of spindle cell variant (2 cases only had early changes)
- 4 cases of round cell variant
- 2 cases of osteo/chondrosarcoma
Staining and Immunohistochemistry

- Spindle cell variants and osteosarcomas were stained with Alcian blue PAS and IHC for cytokeratin and smooth muscle actin was done.
- PAS stains for basement membranes secreted by neoplastic cells: 4/6 tumors positive.
- Cytokeratin shows embryonic lens epithelium and neoplastic cells of mesenchymal differentiation: 3/6 tumors positive.
- Smooth muscle actin shows proliferating lens epithelial cells with mesenchymal metaplasia in a subcapsular cataract: 3/6 tumors positive.
Conclusions

- Post-traumatic sarcoma and lens disease have some same inciting factors (chronic uveitis, trauma)
- All spindle cell variants occurred following phacoemulsification
- All round cell variants occurred following intracapsular lens extraction
- Relationship of type of surgery to formation of type of variant is consistent with the hypothesis that the surgery may be the inciting factor for the tumor
Prognosis

- 3/10 cases had extrascleral extension (through limbus or optic nerve)
- Average survival time after enucleation is 5.4 months with a range of 1 month to 1 year (5 cases with follow up)
- Average survival time after lens surgery was 4.3 years
- One cat was euthanized due to recurrence in the orbit
Summary

- Case selection is very important to avoid doing surgery in cats with active uveitis
- Clients should be informed of risk of neoplasia following lens surgery in cats
- Lifelong follow up is necessary following the intraocular surgery to monitor for signs of tumor development
- Enucleation may be a better option than intraocular surgery for cats with lens luxation or cataracts
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Questions