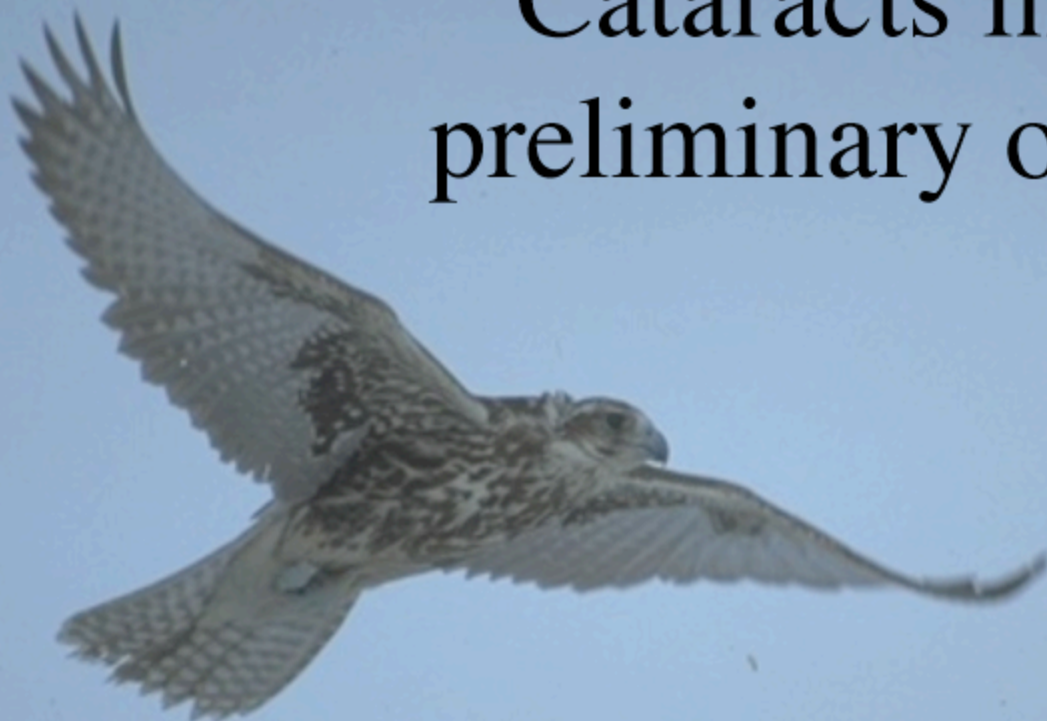


Cataracts in falcons - preliminary observations



I Allgoewer¹, M Lierz², HM Hafez², R Korbel³ & E Schäffer⁴

¹Animal Eye Practise, Berlin, Germany

²Institute for Poultry Diseases, FU, Berlin, Germany

³Avian Clinic, LMU, München, Germany

⁴GSF, Oberschleißheim, Germany





artificial insemination





incubator





material & methods 1

- 7 falcons (gyrfalcons -*Falco rusticolus*- and gyrfalcon hybrids)
- 2 male, 5 female
- age at presentation ranged between 30, 40, 70 and 90 days

material & methods 2

- falcons were bred by artificial insemination and incubation
- different parents - different lines
- experienced breeder
 - 595 falcons in 2005
- 35-45/595 blind falcons hatched

material & methods 3

history:

- obvious visual deficits: failed to pick food from mothers beak
- obvious ocular changes noted by the breeder
- change in the breeding conditions and the procedure (2005):
increase of incubator temperature
from 37,2 to 37,4°C

day 30





material & methods 4

ophthalmic examination: procedure

- slitlamp
- topical anesthesia
- tonometry (Tonopen®)
- induction of mydriasis
- slitlamp
- indirect ophthalmoscopy
- photographs
- sonography

ophthalmic examination



induced mydriasis

- inhalation of isoflurane
- limbal paracentesis with 30 G canula
- injection of 0.03 cc d-Tubocurarine-solution (3 mg/ml), conservative free



material & methods 5

- general examination
- radiography
- computer assisted tomography
- sonography
- endoscopy
 - biopsies of liver and kidney
- hematology, serum biochemistry, serology
- autopsy, histopathology (1/7 only > 6 months)

results: ophthalmologic examination

- bilateral microphthalmos, variable degree (7/7)



results

ophthalmologic examination

- corneal curvature “seemed” flattened



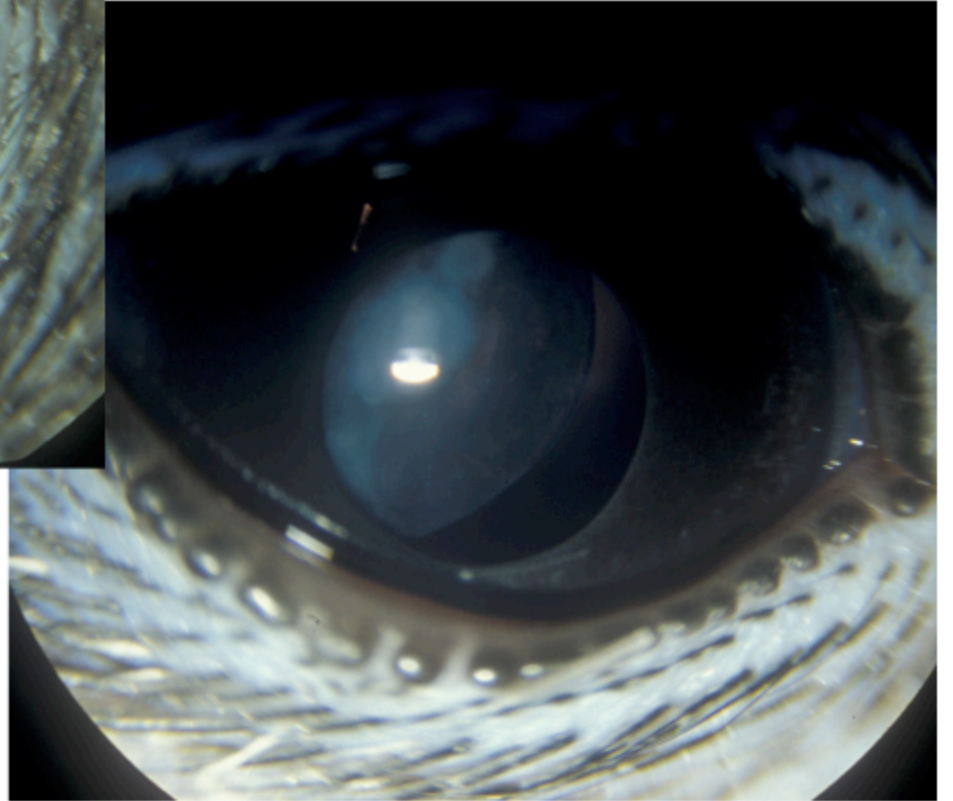
results

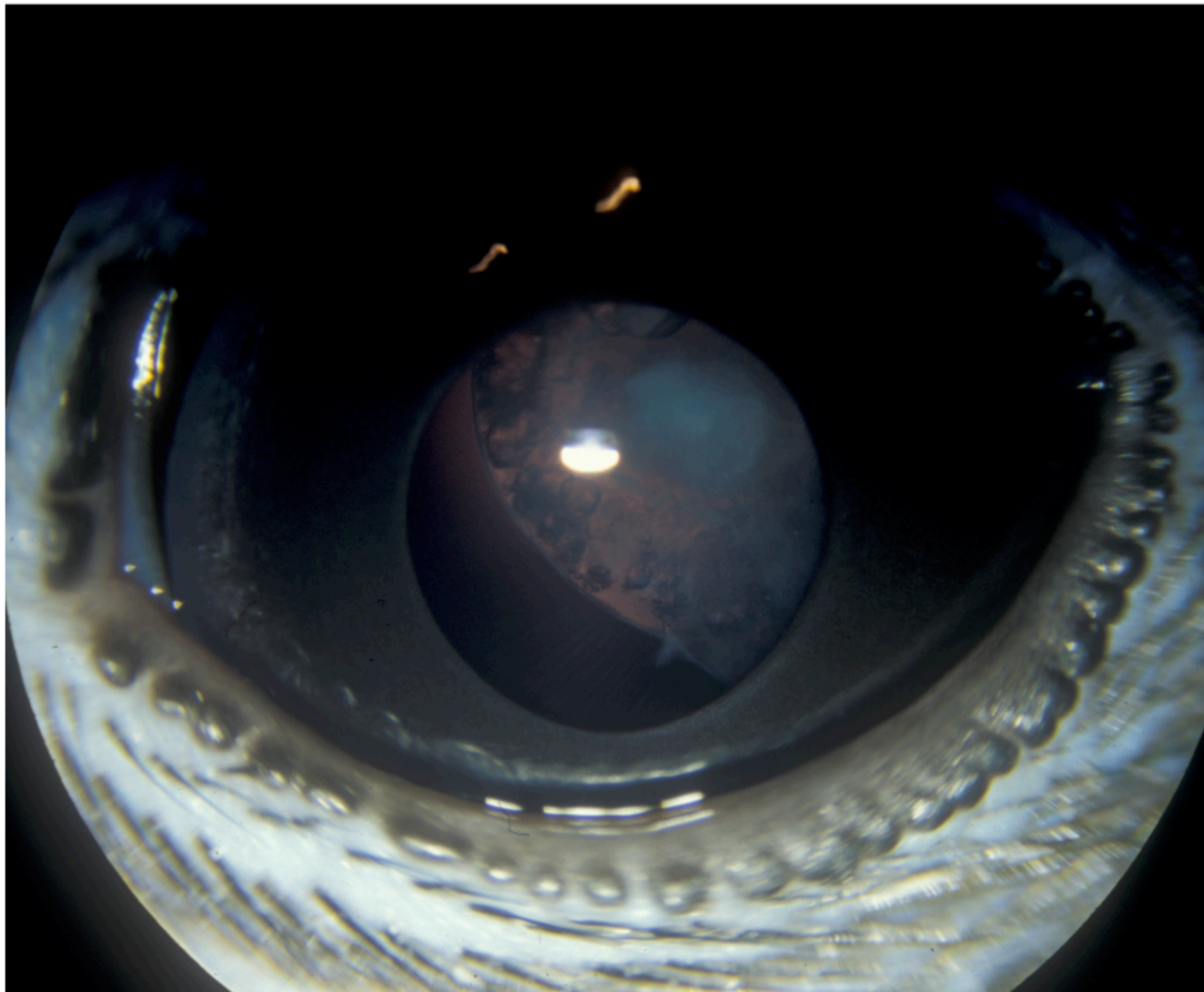
ophthalmologic examination

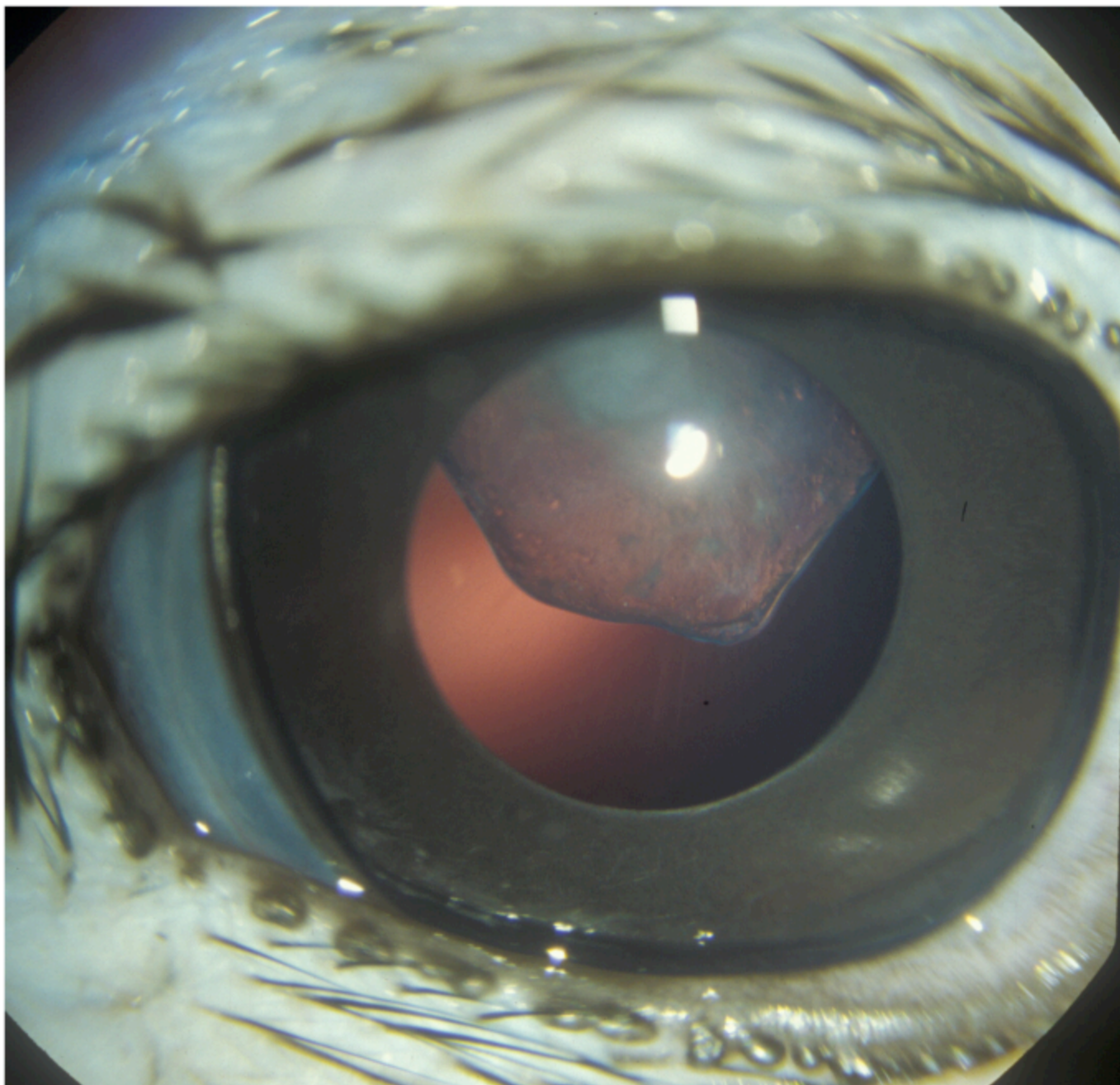
- intraocular pressure OS/OD (mmHg):
 - I: 10/9
 - II: 9/8
 - III: 4/7
 - IV: <4/6
 - V: <4/<4
 - VI: <4/12
 - VII: 10/9

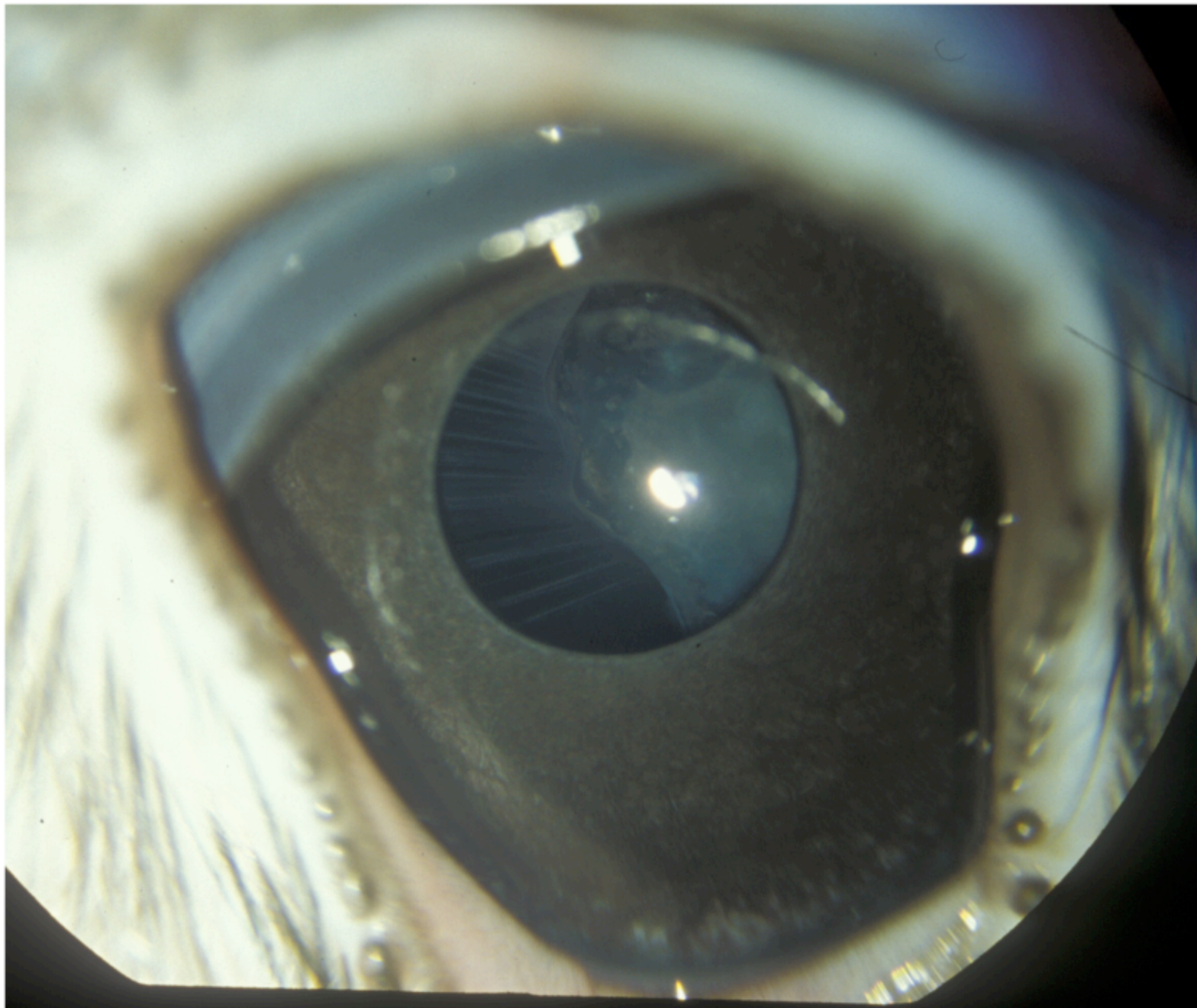
results: ophthalmologic examination

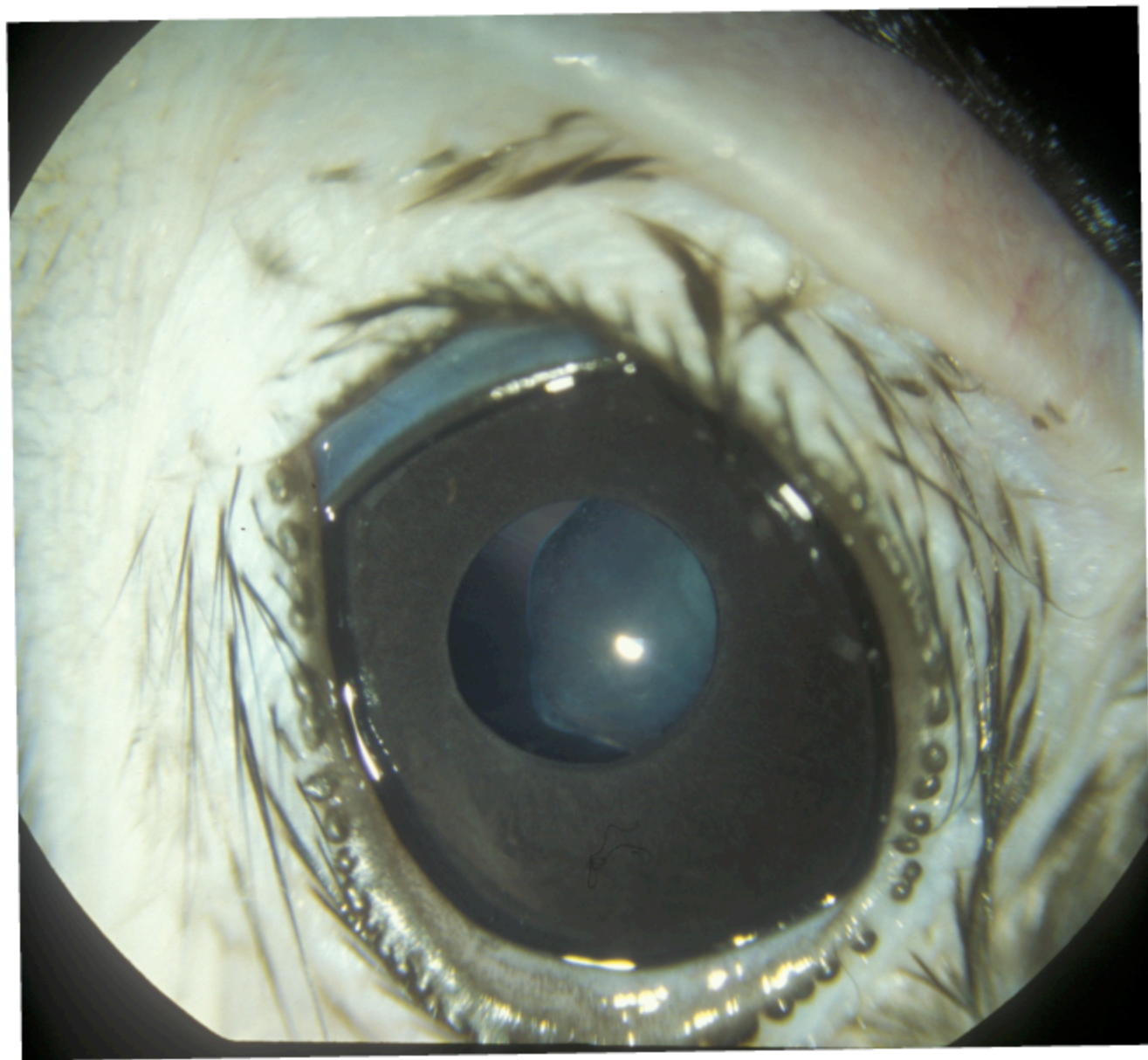
- bilateral cataracts (7/7)
 - predominantly nuclear, extending into cortex
- bilateral microphakia and misshaped lenses (7/7)
 - flattened
 - equatorial indentation
- zonular ligaments
 - elongated
 - thickened
- ophthalmoscopy: no obvious pathologic changes (7/7)

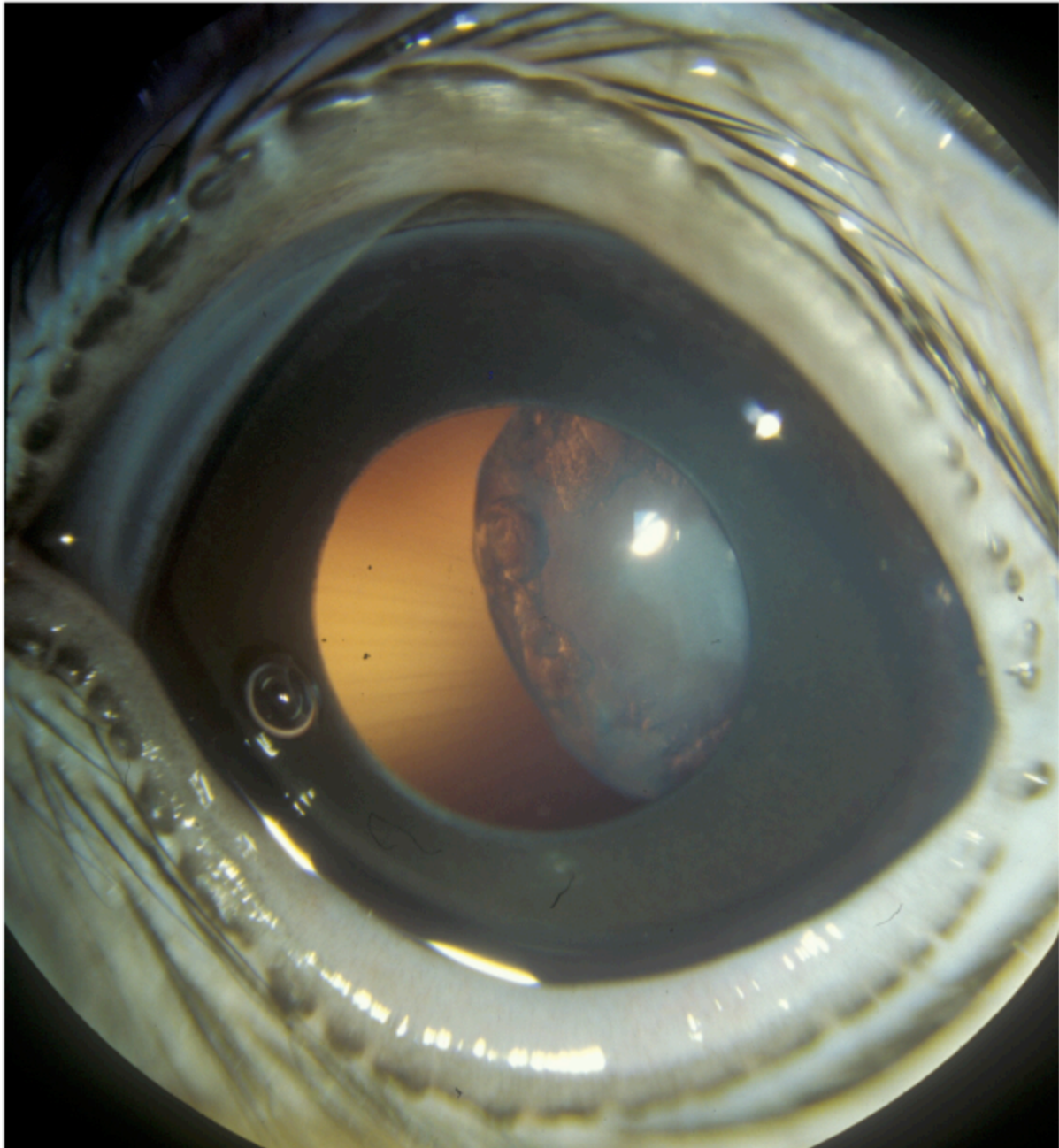


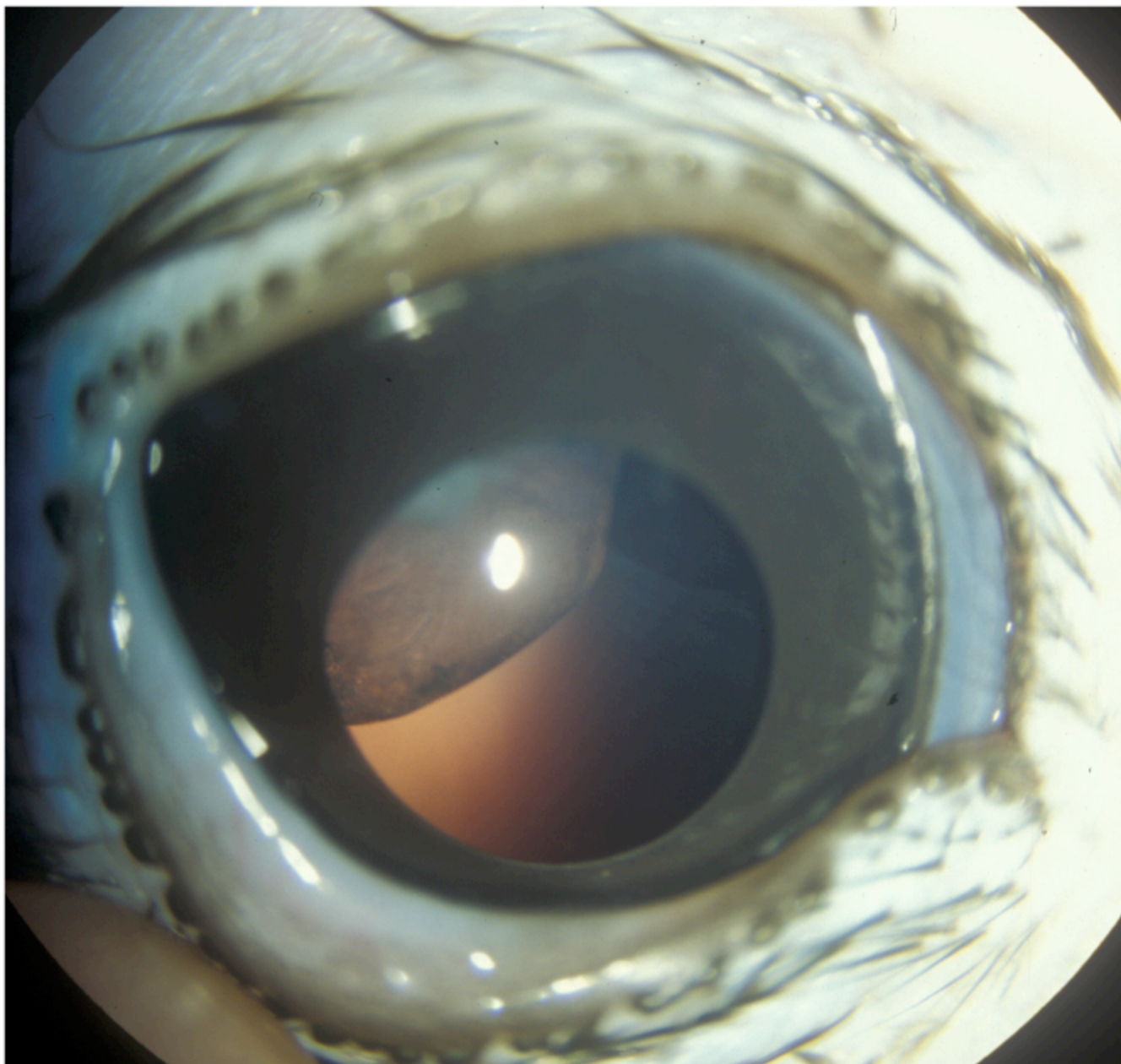


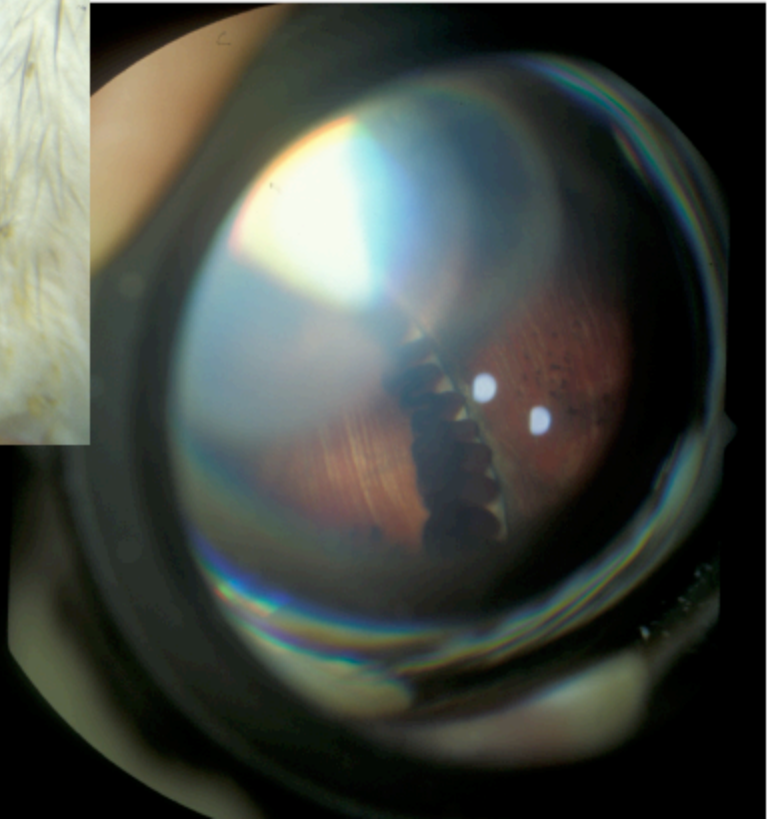
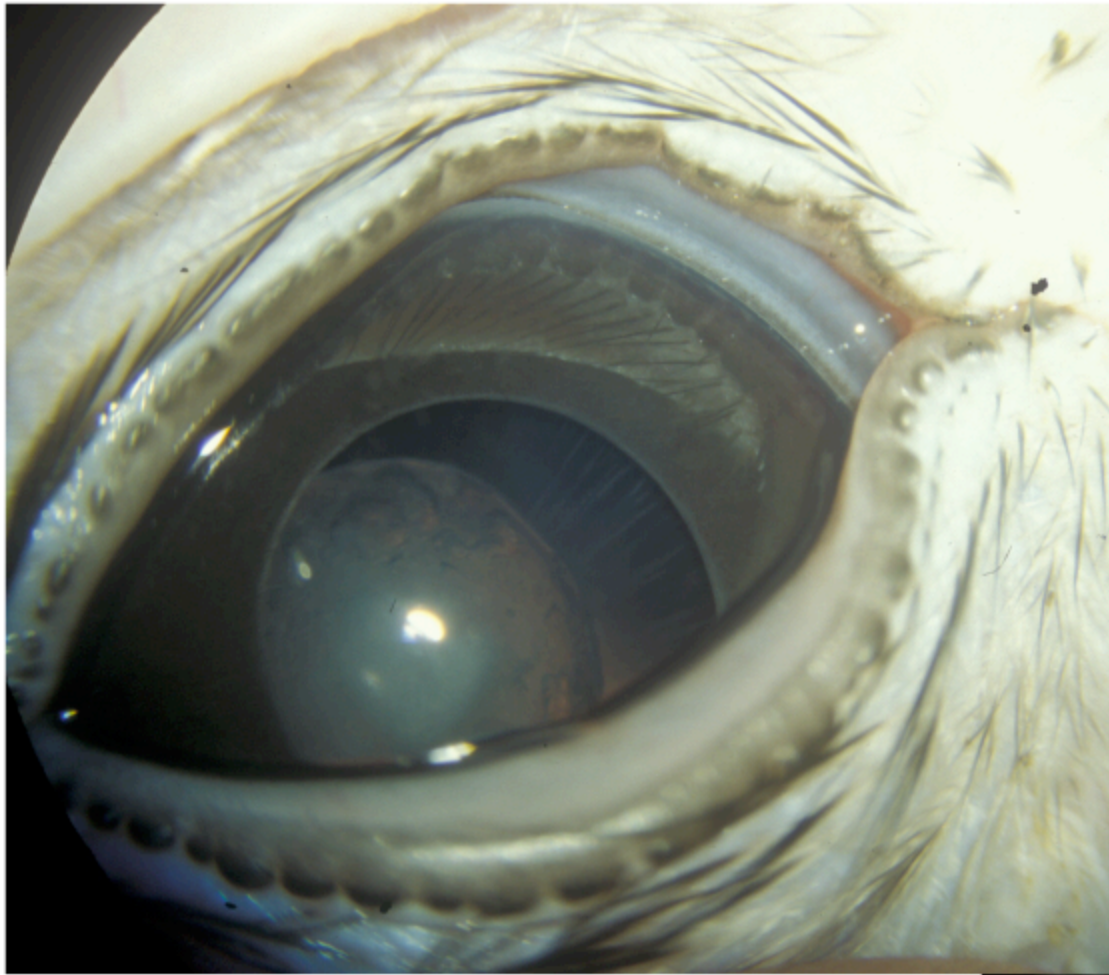


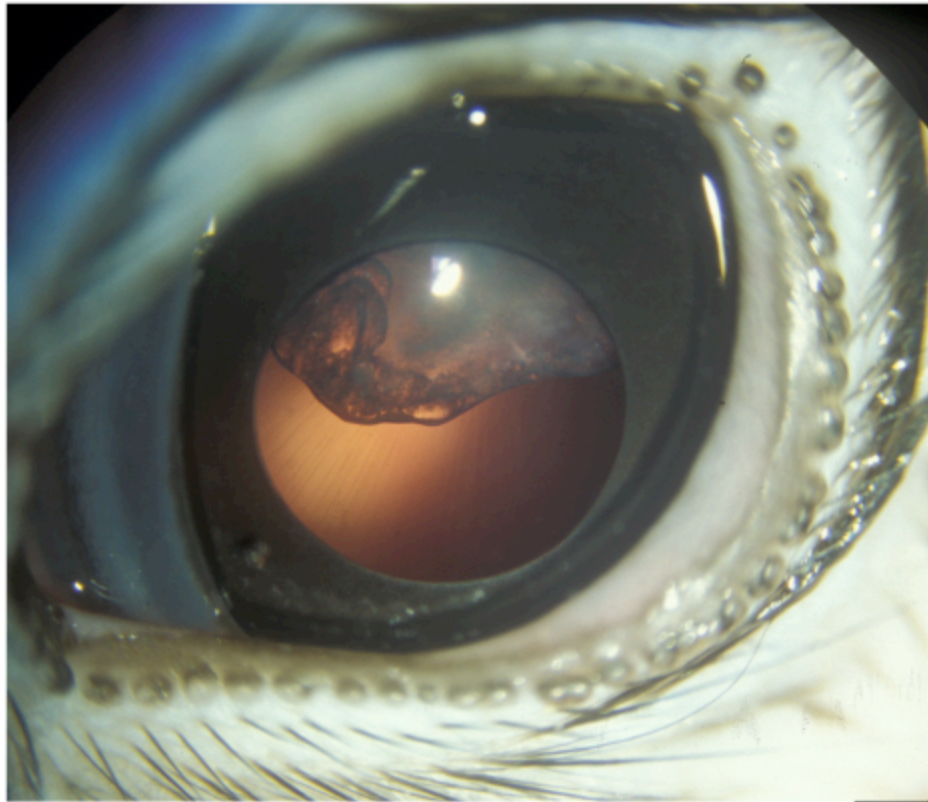












diagnosis: bilateral multiple congenital ocular anomalies (7/7)
(rather uniform appearance)

Hospital :
Patient :

Clinician :
ID :

15:05
17 Nov 2005



0



0

15

30

Distance



L10-22MHz
Frozen
Cine -11

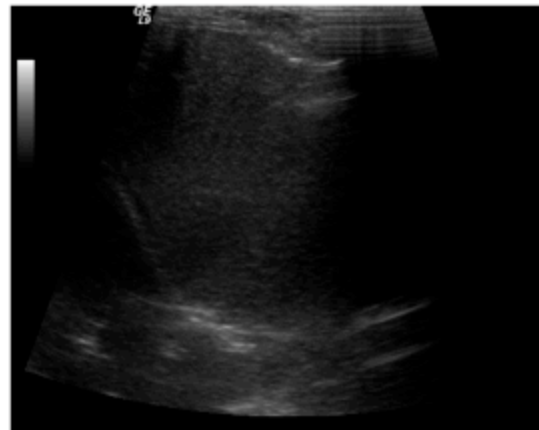
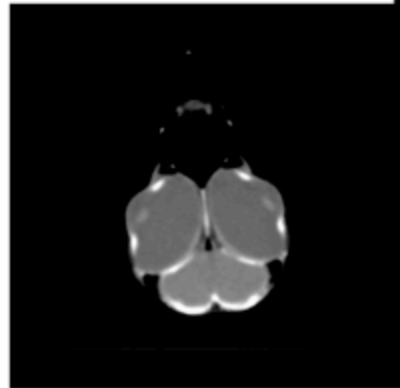
Post P : 1
Frame Av : 0.70

PX Gain : 80
Transmit : 35
MI : 0.28

DIASUS
Dynamic Imaging

results:

GE, radiographs,
CT & ultrasound



falcon 4
sonography liver

no abnormalities found

results: endoscopy & biopsies



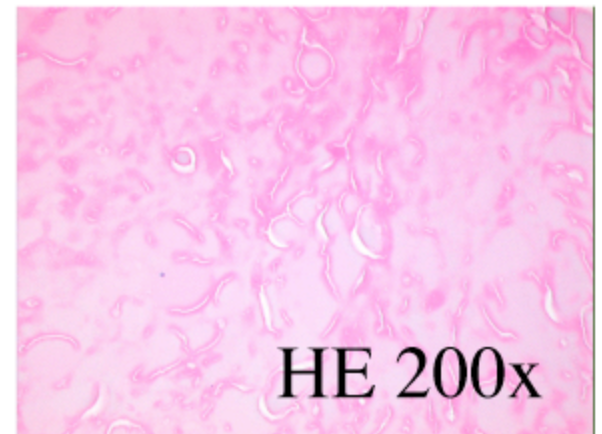
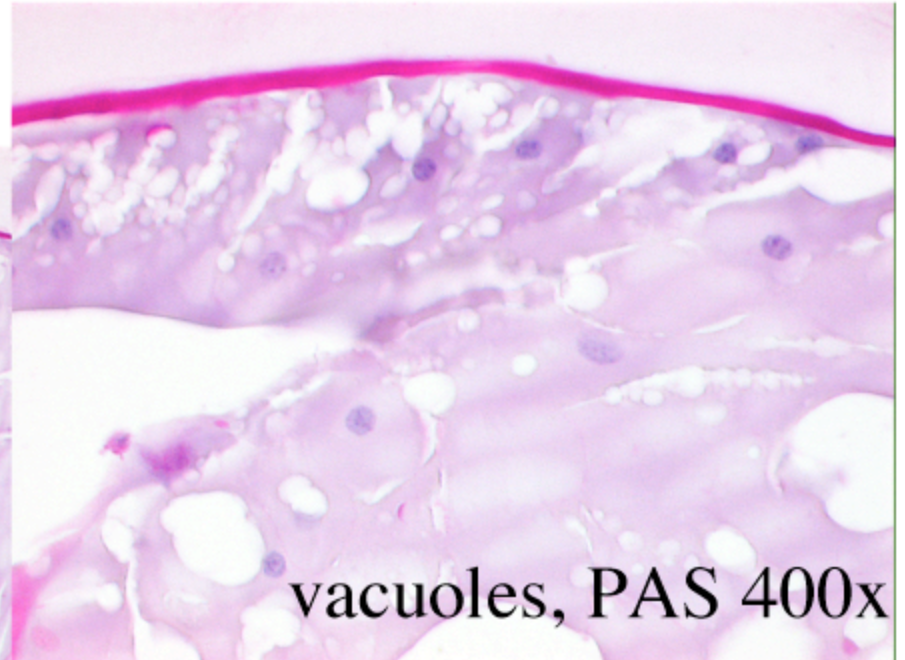
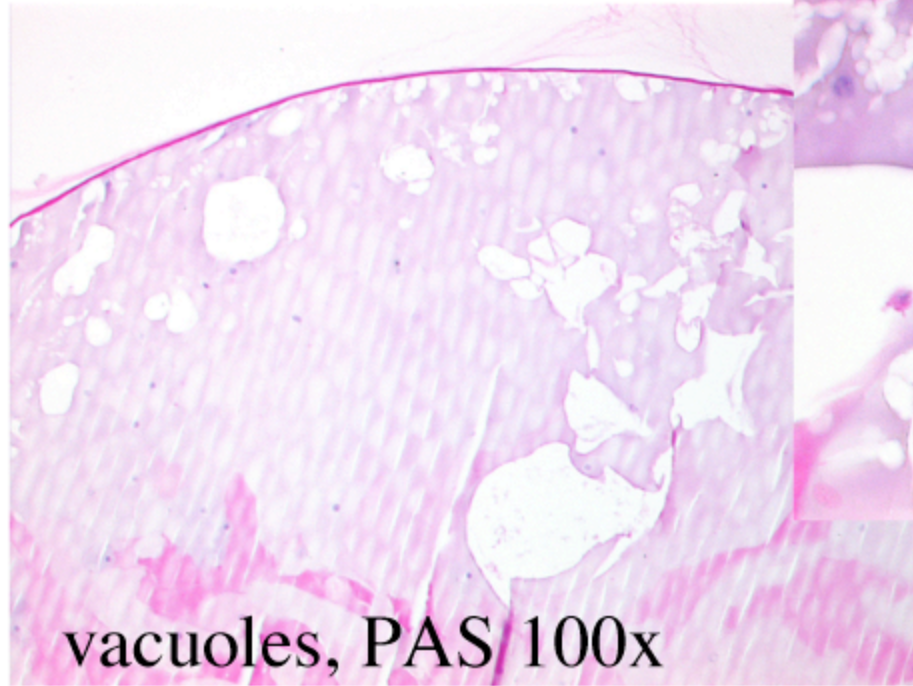
no abnormalities found

results

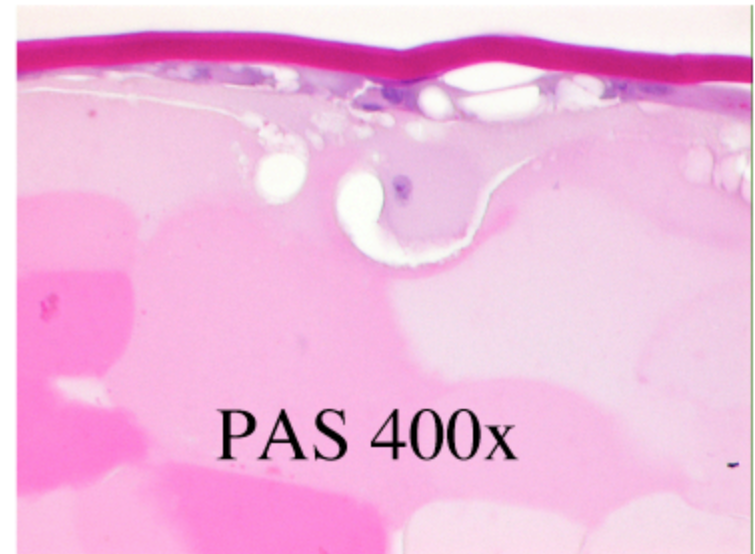
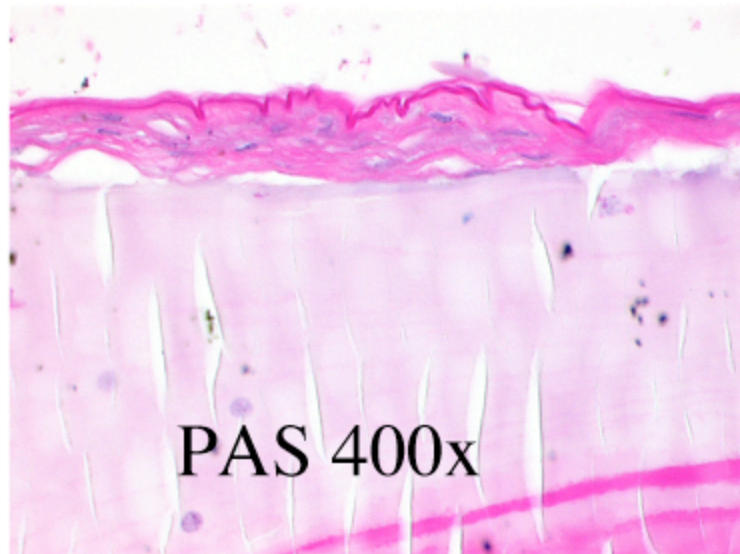
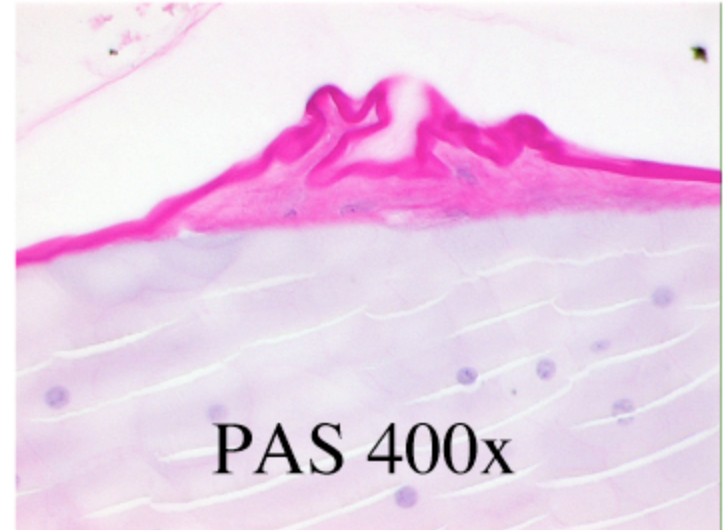
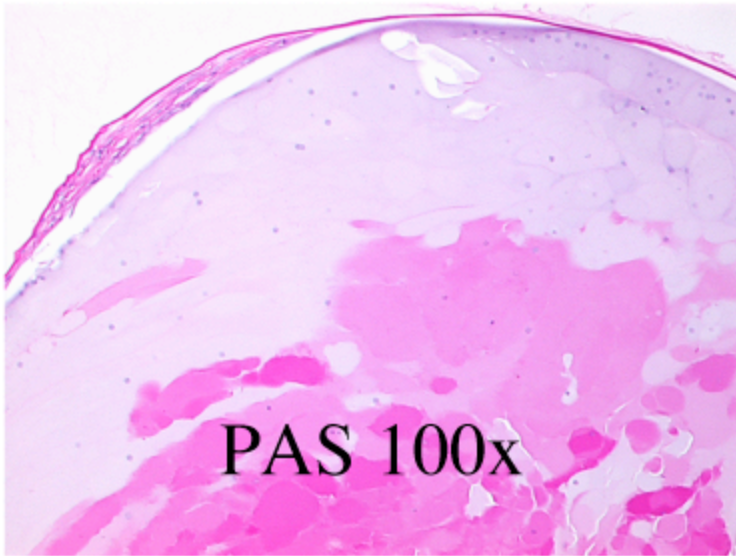
- hematology, serum biochemistry, serology
 - including vitamin E
- autopsy, general histopathology

no abnormalities found

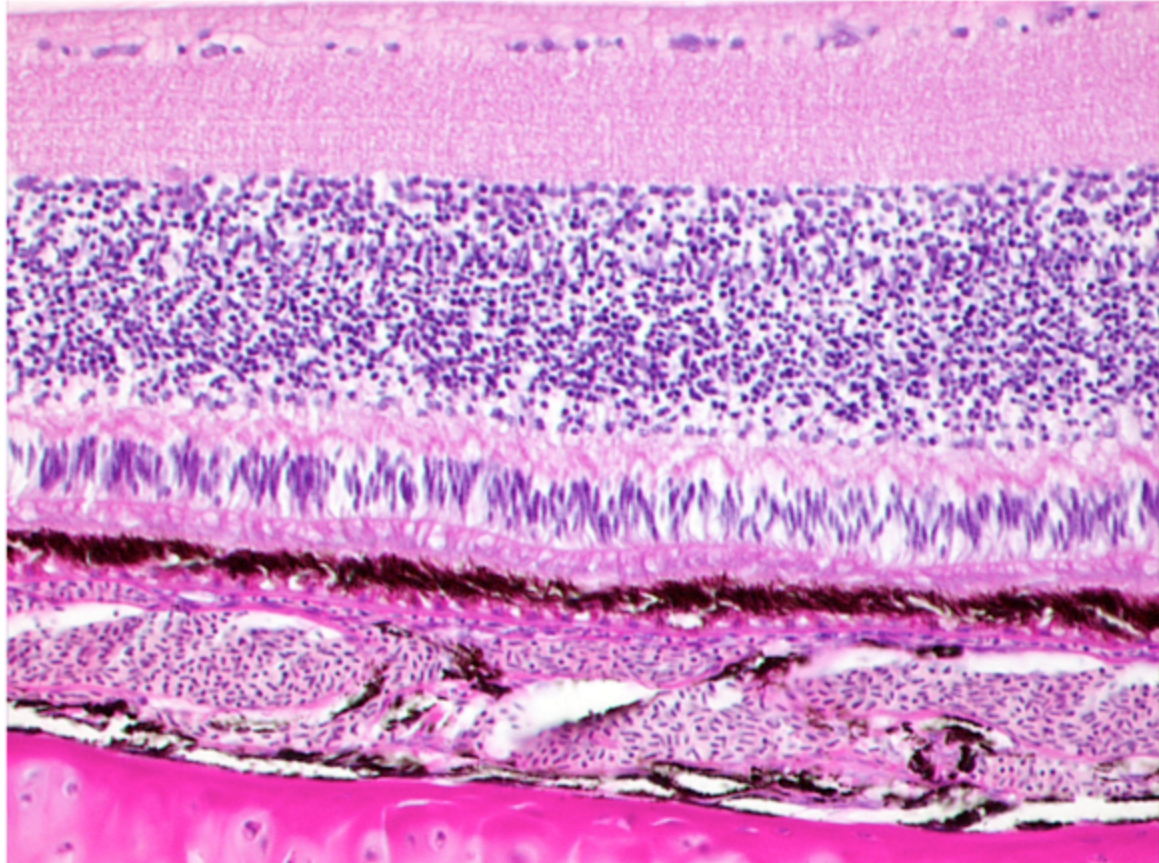
results: ocular histopathology: lens



lens vacuoles and fibre hyperplasia

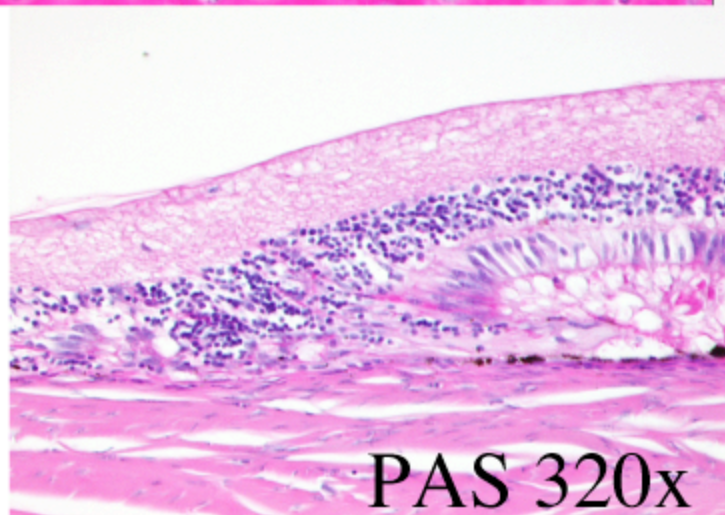
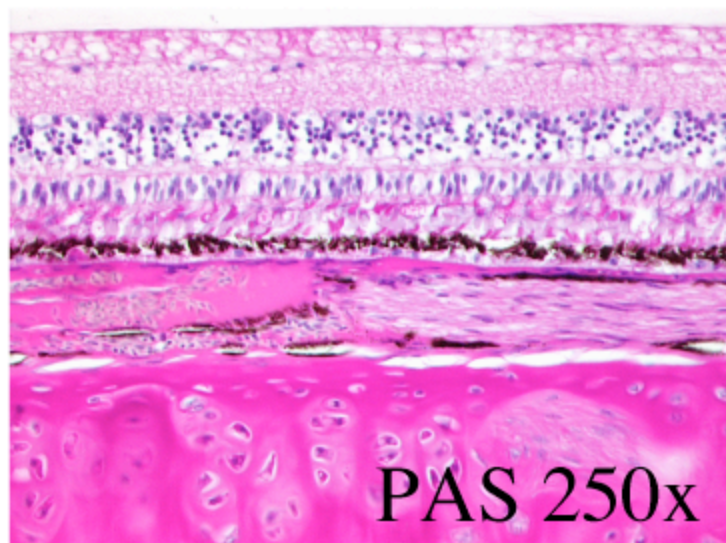


retina:
no abnormalities 6/7

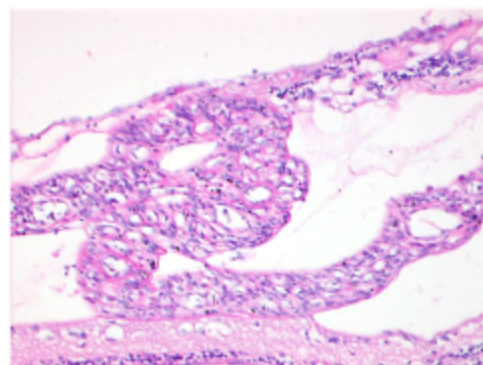


PAS 250x

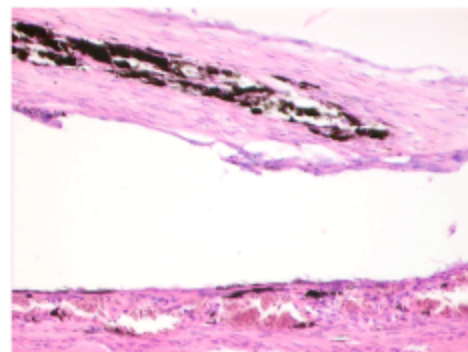
unilateral peripapillary
retinal atrophy 1/7



contralateral focal synechia of
atrophied retina and pecten,
retinal detachment PAS 200x



subretinal fibrous infiltration
and accumulation of
melanophages HE 200x



conclusion of the results

- bilateral multiple congenital ocular anomalies (7/7)
 - microphthalmus, cataract, microphakia, misshaped lens
- unilateral peripapillar retinal atrophy with contralateral subretinal fibrous infiltrate (1/7)
 - postinflammatory
- no other abnormalities found
 - general examination
 - radiographs, CT, sonography, endoscopy
 - blood work
 - autopsy

general considerations

possible etiopathogenetic factors

- genetic, colour related?
- nutritional?
 - vitamine E
- environmental?
 - incubator temperature:

French NA: Effects of incubation temperature on the gross pathology of turkey embryos. British Poultry Science 1994: 35; 363-371
 - mycotoxins
 - ...
- etc.



thank you!