Diagnostic Examination of the Eye

David A. Wilkie DVM, MS, Diplomate ACVO
Professor
The Ohio State University
Wilkie.1@osu.edu

Ophthalmic Examination

“When is missed by not looking than by not knowing” [Thomas McCrae, 1870–1935]

Ophthalmic Examination

85% of MD Radiologists missed the …… Can you see it?
Ophthalmic Examination

- External exam

Know Equipment & Anatomy!
Know Equipment & Anatomy!

I can’t see a thing?

Basic Ophthalmic Exam

Advanced Ophthalmic Examination
Turn out the lights

Pupillary Light Reflex

Dazzle Reflex

Hey! That’s Bright
Cotton Ball

Menace Response

Neuro-ophthalmic Exam
CN 2, 3, 4, 5, 6, 7
Schirmer Tear Test

- Indications:
  - Assessment of normal tear production

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KCS

STT
21 mm/min  2 mm/min
Schirmer Tear Test

- Strip allowed to remain in place for exactly 1 minute.

≤ 15mm/min consider Rx

This is the most underused, but indicated ophthalmic test in practice.....YOU ARE MISSING THESE CASES.

Do you see these breeds???

When do I treat???
Fluorescein sodium

Indications:
- Detection of epithelial defects
- Evaluation of nasolacrimal system
- Determination of tear breakup time (TBUT)
- Seidel’s test
- Fluorescein angiography
- Fluorophotometry
Corneal Ulceration - horse

Corneal Ulceration - feline

Tear Break-up Time (TBUT)

Precorneal Tear Film
Lipid Layer
Aqueous Layer
Mucus Layer
Corneal Epithelium
LOOKS LIKE KCS, BUT STT IS >15MM

Tear Break-up
20 seconds
Seidel Test

Positive Seidel Test - Human
Positive Seidel Test - Canine

Indications:
- Detection of dry, stressed, devitalized epithelial cells
- KCS?
- Viral, fungal keratitis?

Rose Bengal

Topical Anesthetics

- Proparacaine 0.5%
- Rapid onset of action, 15-20 seconds with 15-20 minute duration.
Topical Anesthetics

- Prolonged use will:
  - diminish duration of anesthesia
  - retard wound healing
  - result in keratitis and corneal epithelial erosions

Nasolacrimal irrigation
Dacryocystorhinography

CT Scan replacing skull radiographs
Eosinophilic keratitis
Intraocular Pressure Determination

- Indications:
  - Any red or painful eye
  - Breeds that are predisposed to glaucoma
  - Predisposed breeds with a history of glaucoma in the opposite eye
  - Follow up in animals with medically controlled glaucoma

Intraocular Pressure Determination

- Determination of intraocular pressure (IOP) is indicated in all eyes with:
  - Diffuse corneal edema
  - Anisocoria
  - Fixed and dilated pupils
  - Episcleral congestion
  - Blindness
  - Buphthalmos
  - Anterior uveitis

Intraocular Pressure Determination

- There are 3 specific ways to determine intraocular pressure:
  - Indentation tonometry
  - Applanation tonometry
  - Rebound tonometry
Schiotz Tonometry

Should read zero

Do your patients behave for this?
Trust your result?
**Tonopen-Avia**

Takes 6 readings with 3 touches

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**Tonovet - Rebound Tonometry**

No topical anesthesia

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**IOP - What is significant?**
Intraocular Exam

Biomicroscopy

• Indications
  • Examination of the anterior segment of the eye:
    • Adnexa
    • Conjunctiva
    • Cornea
    • Aqueous
    • Iris
    • Lens
    • Anterior Vitreous
Indirect Ophthalmoscopy

Direct ophthalmoscopy
Direct ophthalmoscopy

Indirect vs Direct

PanOptic
Ultrasound Biomicroscopy
- 50-100 mHz

Cataract Surgery
- Electroretinogram
- Under anesthesia vs awake
Electroretinogram
Photopic
Scotopic

Questions?