VOTS Meeting
Nov. 2013
Puerto Rico

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School of Veterinary Medicine
What is COPLOW?

• Founded in 1983 by Dr. Richard R. Dubielzig
• Mail-in ocular pathology service for veterinary ophthalmologists
• Approximately 3000 cases annually
• Mission
• Research
• Great images uploaded daily
• Community of people that share similar passion
• Search for “COPLOW”
Whose eye is this?
Why do we submit globes?

• Margins
• Co-pathology
• Ocular surprise
Recommended Procedures: ‘Why Should I Care?’

- Maximize the quality of the specimen
- Maximize the accuracy and value of the interpretation
- Make it as easy as possible for us to help you and your patients
Safety Comes First

• Ensure the safety of staff
  – Formalin is bad! And smelly!
  – Known human carcinogen
  – Immediate exposure may cause severe irritation
Getting Samples

• That’s up to you!
Sample Preparation: Enucleated Globes

- Remove from orbit
- Trim EXCESS tissue
  - Eyelids
  - Nictitating membrane
  - Retrobulbar fat, extraocular muscles, etc.
- Improves penetration of formalin to IO structures
- Prevents globe distortion due to muscle contraction
- Do not remove the ON or incise the globe!
Those globes are CLEAN!
Untrimmed globes...
Exception
Sample Preparation:
Enucleated Globes

- Label or draw lesions of interest
  - Allows planning of cut into globe
Suture near lesion

Oblique section
Provide a Simple Drawing

- Helpful drawings:
Provide a Simple Drawing

• Not so helpful drawings:
Provide a Simple Drawing

• We love drawings:

- corneal ulcer can't manage pupil, somnolent OD (with a drawing)
- Descemetization & fibrosis, low anterior chamber (or with a drawing)
- Fibrosis
Our new forms make it easy
Sample Preparation:
Enucleated globes

• Clinical photos are highly appreciated
• We do not encourage injection of fixative into the globe
• If desired, inject small amount formalin INTO globe
  – 0.1-0.3 mL with 25 or 27 g needle
  – Inject into vitreous (no need to aspirate)
• AWAY FROM LESIONS!
  – Avoid subretinal injection
  – Useful?
  – Tell us!!!!
Artifacts

- Some problems during enucleation can affect the quality of the specimen
Ruptured globes
Hemostatic forceps
“Twisting technique”
Sample Preparation:
Eviscerations

- Place contents directly into formalin
- Be careful to include the lens
- Do not place sample on absorbant paper or wood!
- If sample contains small pieces use a cassette
Sample Preparation: Conjunctiva and Cornea

• Try to fix flat
  – Allows for full thickness evaluation
• Lay flat onto non-absorbent surface
  – Suture wrapper foil
  – Plastic
  – Cucumber
• Allow to dry ‘a bit’
• Plop into formalin (with foil)
• Arrives fixed, flat and ready to cut!
Sample Preparation:

Eyelids and Orbital Tissue

• Place directly into formalin
• Avoid crush artifact with forceps
• Ink or suture the margins of concern
Tiny Pieces

- Meshed cassette
  - Best option
  - Not for larger pieces

- Small tube
  - Please avoid
Avoid
The Container

- All containers leak, some more than others
Uh ohhh!
Please Avoid
Container: wrong size!
Formalin Fixation

• Fix in 10% neutral buffered formalin
  – ≥ 10:1 ratio
  – At **LEAST** enough to cover the top of the sample!
  – Ideally 48h before sectioning

• Once fixed…
  – Wrap in thoroughly **SOAKED** gauze once fixed
  – Cotton can be TOO absorbent…
Not enough formalin!
Other Fixatives: used mostly by zoos

- Davidson’s solution
  - Should be fixed for no longer than 48 hours
  - Rinse and place in formalin for shipping
  - Excellent tissue rigidity maintains shape of globe
  - Good tissue penetration

- Bouin’s:
  - Flammable when dried!
Pop Quiz: Whose eye is it?
The New Form

- On-line form:
  - Fillable and printable forms
- Regular and oversized (horse) globes
- Printable labels for mailing
- Soon to be electronic submissions
**COLOW Submissions**

*For COLOW Lab Use Only*


**Submitters**

<table>
<thead>
<tr>
<th>Return results</th>
<th>Specimen</th>
</tr>
</thead>
<tbody>
<tr>
<td>Common</td>
<td>O dog</td>
</tr>
</tbody>
</table>
| O cat | O other spe-

**Veterinarian**

Name:

**Contact Person**

*If not the vet*

**Clinic, Zoo, Hospital, Etc.**

**Address**

**E-Mail**

**Phone**

**Owner's Name**

**Animal's Name**

**Medical Observations and Findings (where relevant)**

**Ophthalmic Findings**

**Glaucoma**

**Duration of Problem**

**Date of Surgery**

**General Medical Conditions**

**Reason for Euthanasia**

**Time from Death to Fixation**

**Calculation of Service Fee**

*Note: COLOW is motivated to add to our collection of exotics with substantial reduced fees for valuable specimens. If you have negotiated such a discount, indicate it below.*

<table>
<thead>
<tr>
<th>Item</th>
<th>Fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small animal globe analysis</td>
<td>$100</td>
</tr>
<tr>
<td>Large animal globe analysis</td>
<td>$120</td>
</tr>
<tr>
<td>2nd globe, same animal</td>
<td>$20</td>
</tr>
<tr>
<td>Organized discount</td>
<td>$200</td>
</tr>
</tbody>
</table>

**Total Due (add all above)**: $
The Form

• Please fill out the whole form
  – Veterinarian & Clinic Name
  – Species, breed, age, sex of animal
  – Your phone number, fax number, or email
  – HISTORY! HISTORY! HISTORY!
    • Trauma? What kind?
    • Blue Eye?
    • Prior Surgery or Biopsy?
    • Duration of problem?
    • Systemic signs?
    • Focal lesions?
Old and incomplete form

C. O. P. L. O. W.

OCULAR PATHOLOGY FORM

Client:

Address:

Phone Number:

Fax Number:

Species: Feline

Age: 10yrs

Sample submitted (circle one): Globe Viscera Lid Other (specify):

(circle one or both): OS OD

Glaucoma (circle one):

Yes

No

Duration of problem:

Date of surgery:

11/8/04

Ophthalmic findings:

Focal lesion in the globe (indicate on tissue if possible, or with a drawing)

Physical findings:

Please submit the sample in 10% formalin and send the report with a check made payable to the University of Wisconsin to the following address:

Dr. Richard Dolinsky
Department of Pathobiological Sciences
School of Veterinary Medicine
University of Wisconsin-Madison
2015 Landen Drive West
Madison, WI 53706-1102

[Signature]
Shipping

- Regular mail, FedEx, UPS
- Secure lid
- Tape = BAD, Parafilm = GOOD
- Place paperwork in SEPARATE BAG
  - Or in paperwork pouch of ‘fancy’ bags
- Keep from freezing
  - Can cause severe artifact in sections
  - Add 1:10 alcohol

Madison, WI
Surgical findings:

buphthalmia, lens subluxed, etc.

Physical exam findings:

Please submit the sample in 10% formalin and send the Wisconsin to the following address:

Dr. Richard Dubielzig
Department of Pathobiological Sciences
School of Veterinary Medicine
University of Wisconsin-Madison
203 Linden Drive West
Madison, WI 53706-1102

[Address information]

[Address information]
Freeze Artifact
Send sample to the right place!
We’ll take care of the rest!
Special Thanks

• Dr. Dubielzig
• Dr. Leandro Teixera
• Dr. Chuck Schobert
• Kate Lieber
• All of you!
Questions?