Ophthalmic Examination Pearls – tips and tricks to make your life easier

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Suggestions for room lighting and layout:
1. Best if room has no windows
2. If room with a rheostat very helpful so can control light intensity – helpful for both vision testing and your examination. If you can see the dog in the room, the dog should be able to get around the room.
3. Adjustable height table is great so that you can sit and dog’s head can come to you whether standing, sitting, etc.
4. Best if you can perform the exam off the short end of the table so that you can get a head on view of the animal. Need to be able to get an arm’s length away from the animal’s head
5. Typically exam easier if the dog is on the table. You can line up better with their eyes. Exams on the floor can be much more challenging.
6. Kitties are easier to test vision by shining light from transilluminator on the floor and wiggling back and forth.

Restraint for the exam:
1. Best if a technician holds. Owners have a way of pushing more skin into the way or hiding the head.
2. Hold with one hand behind the head and the other under the chin
3. Often less is more
4. Be particularly careful with hand position and pulling of skin when trying to evaluate entropion as can distort tissue position. Do a “hands off” exam
5. Topical anesthetic (proparacaine) is your friend. Apply liberally. Will often facilitate exam and prevent the need for sedation to get initial glimpse of the globe
6. Rattling of door handles and knocking on tables or whistling will often encourage animals to drop their 3rd eyelids, but only briefly so be ready. Also try not to touch their heads as that often creates more squinting
7. If cats are pushed forward on the exam table so they think they’ll go onto the floor they’ll often open eyes wider and put 3rd eyelids down
8. Aiming the animal’s nose straight at the floor with marked flexion at the poll can also help to drop 3rd eyelid
9. Having the owner stand straight behind you can also be helpful if the animal is fidgeting and wanting to keep turning around to look at Mom and Dad.
10. If animal is particularly fractious, looking before performing any diagnostic tests can help to keep them in a better mood while you look at the eyes.
11. Sedation can be your friend. Just remember that the eye position will change.

Why do ophthalmologists sit to perform their exams?
1. Stabilizes your arms and equipment
2. Motion now limited to patient
3. More control so a better examination

What sort of magnification is recommended?
1. A basic head loupe can be a great start
2. Can get through veterinary suppliers or crafting stores
3. Often select 2.5 to 5x magnification
4. Can also be helpful for small foreign bodies or dental procedures

Benefits of a slit-lamp biomicroscope:
1. Small, very focused beam of light
2. Magnification
3. Can vary the light intensity
4. Particularly helpful for visualizing aqueous flare and small details
5. Can mimic with your direct ophthalmoscope and a head loupe

Tear film break-up time:
1. Evaluates the quality of the tear film
2. Helpful when the Schirmer tear test is normal, but corneal surface seems irregular or the animal is uncomfortable and you can’t find any good reasons why
3. Place liberal amounts of fluorescein on the cornea
4. Blink the eyelids together
5. Open the eyelids and visualize the tear film dorsotemporally. Should be an even sheet of fluorescein. Use the cobalt blue filter on your direct ophthalmoscope and magnification. Start a timer. Watch until you start to see dark spots appear in the sheet of fluorescein stain as the tear film starts to break up. Stop the timer
6. Normal is more than 10 seconds. Often very short when abnormal.
7. Check eyelid conformation to ensure not a reason for the tear film to fail to spread normally.
8. Use artificial tears that are hyaluronic acid based to help mimic the mucinous portion of tears and stick tears to the cornea

How can you tell how long a corneal ulcer has been present?
1. Corneal vessels
2. Take at least 3-5 days for the vessels to start to grow
3. Grown about 1mm/day

How fast can a corneal ulcer heal?
1. Entire cornea can re-epithelialize in 7-10 days
2. So look at size of a superficial ulcer and estimate from there. For example a 2 mm ulcer should easily heal in 2-3 days

How can you make mistakes measuring intraocular pressures?
1. Typically cannot falsely decrease values
2. More often can falsely increase values, so if several readings, the lowest one at 5% error is likely most correct
3. Be sure animal not being held tightly around neck or collar not too tight
4. Be sure not pressing on eyeball as you’re opening the eyelids
5. Calibrate the instrument daily or as used
6. For the TonoPen be sure to use the covers

Why do ophthalmologists seem to prefer indirect ophthalmoscopy?:
1. Superior field of view
2. Can see the whole retina in about 6 views
3. Less hindered by opacities in the anterior segment as less magnification
4. Prefer a 20D or 2.2 PanRetinal lens for small animals
5. The more expensive lenses are more precisely ground so a better image all the way to the periphery
6. Use your transilluminator as your light source. Hold by your cheek on the side of your dominant eye. Place the lens in your opposite hand. You will need someone to hold the animal and hold the eyelids open.
7. Stand an arm’s length away. Get a tapetal reflection. Place the lens in front of the eye. The white or silver ring goes towards the animal’s eye. Slowly pull the lens back until you see nothing but retina.
8. If you see something in the periphery of your lens and want to move it to the center, move your body in the direction of the object you want to see
9. The image will be upside down and backwards in your lens
10. Direct your light side to side and up and down within the eye to visualize the entire retina.
11. A PanOptic ophthalmoscope can be a nice balance between the ease of using the direct ophthalmoscope and the field of view of the indirect ophthalmoscope

References available upon request