



Gaza Ophthalmic Centre

1.1 The Eye Lids

(Part 1)

Ophthalmology

4TH YEAR MEDICAL STUDENTS

Maged A AbuRamadan

MD, FRCSEd, FICO, PPOS

Gaza Ophthalmic Centre

2021

Maged Awni Abu-Ramadan, MD, FRCSEd



.Good morning. This is the first part about ophthalmic clinical examination

How to examine an Ophthalmic Case

Demography

- Patient

1. Name
2. Age
3. Sex
4. Occupation
5. Residence
6. Contacts

As with any other patient, it's very important to know the demography of your patient .regarding his name, age, sex, occupation, residence and contracts

How to examine an Ophthalmic Case

History

1. Past Ophthalmic history
 1. Diseases
 2. Operations
 3. Medication
2. Past medical history
3. Drugs & Allergy
4. Family history

2021

MAGED A ABURAMADAN, MD FRCSEd



Now, the history is important regarding the eye in case of diseases or previous operation and medication as well as the past medical history of the patient and presence of any drugs or allergy. Family history is very important in ophthalmic diagnosis

How to examine an Ophthalmic Case

O/E

1. External examination
2. Internal examination
3. Functional examination

on examination can be divided into three stages external examination which can be seen with the use of a simple light and the low internal examination which needs a skill and a special instruments. And then the functional examination that we are going to talk about later



External Examination

1. Position of eye ball
2. Eye Lids
3. Lacrimal system
4. Conjunctiva
5. Sclera
6. Cornea
7. Anterior chamber
8. Iris and pupil



external examination is important to report on the position of the eyeball and the eyelids . from the outside about the lacrimal system. The anterior part of the eye that we can see externally the conjunctiva sclera and the cornea, the anterior chamber if there is any .abnormal content, and of course, the iris and the pupil reaction

Internal Examination

1. Lens
2. Retina
3. Intra ocular pressure



Internal examination is usually needed for commenting on the crystalline lens on the retina and measuring the intra ocular pressure, all of them need a special instrument

Functional Examination

1. Ocular movement
2. Visual acuity
3. Color vision
4. Visual fields
5. Orthoptics
6. Ophthalmic imaging

functional exams. Here, concentrate on the ocular movement, the visual acuity, the color vision, visual field orthoptics as squints and of course, they advanced ophthalmic imaging

External Examination

Position of eye ball

- Normal
 1. Exophthalmos
 2. Proptosis
 3. Enophthalmos
- 4. Ocular deviation (squint)
- 5. Ptosis

the position of the eyeball, normally, as we said in the previous chapter about the anatomy, however, it can be a change in the position in the anteroposterior diameter like exophthalmos, proptosis. or enophthalmos or it can move laterally or vertically like an irregular deviation in squint and of course, abnormal drooping of the upper eyelid is called ptosis

External Examination

- Position of eye ball
 - Exophthalmos
 - Proptosis



Here in this patient, you can readily see that both eyes are propped out that means anterior . and axial. And this is a case of thyroid hyperactivity Graves disease

External Examination

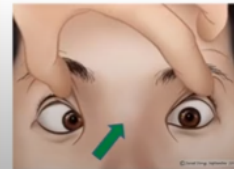
- Position of eye ball
 - Enophthalmos



This is on the contrary, you can see that the right eye is receding backward, this is an artificial eye and there is a loss of orbital content

External Examination

- Position of eye ball
 1. Ocular deviation (squint)
 1. Various directions
 2. Pseudo squint



the position of eyeballs normal ones both eyes should be looking straight forward if you are looking at the distance object. However, if one eye looks at the objects and the other eye looks anywhere else, this is called squint, which can be either going inside is a esotropia or outside exotropia or vertical ,one peculiar type of squint that happens in infants and young children is the pseudo squint which means like in the bottom right, the eye position is normal. However, the skin covering the bridge of the nose is so wide, which covers the white .in one side more than the other giving a simulation of squint we call it pseudo squint

Eye Lids

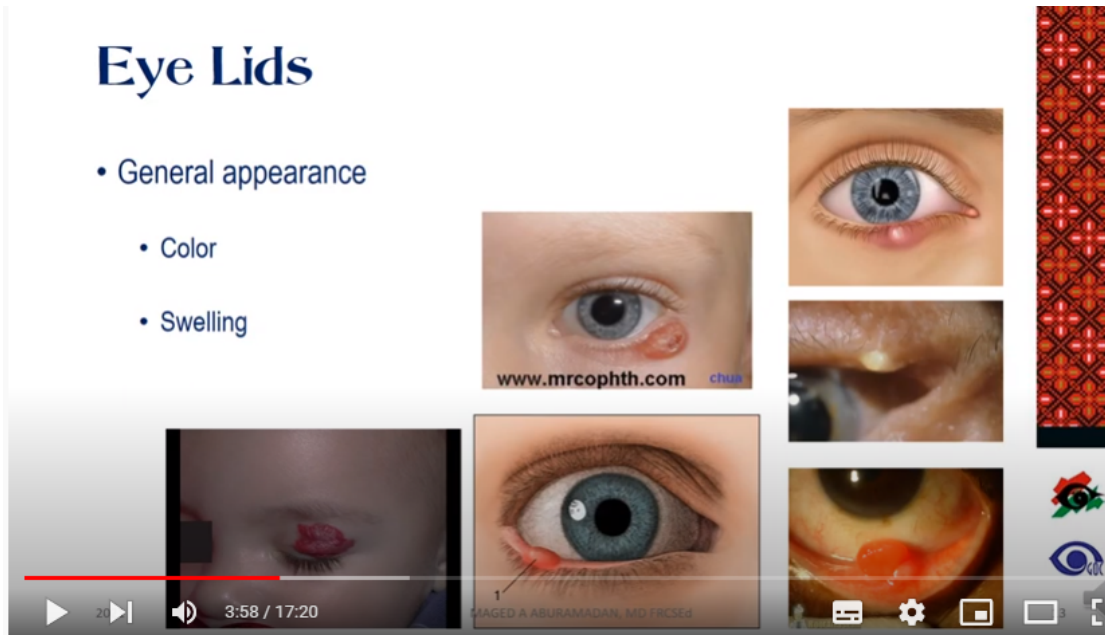
1. General appearance
 - Color
 - Swelling
2. Position
3. Deformities
4. Skin
5. Palpebral fissure
 - Size and position
6. Motility
7. Lid margin
 - Position
 - Lashes

For the eyelids, we need to comment on the general appearance regarding color and presence for any swelling, its position any the deformity and the skin. In addition, Special Tests regarding the palpebral fissure Size and Position motility of the eyelid and the margin, with special regard to position and lashes

Eye Lids

- General appearance

- Color
- Swelling



general appearance color is like the rest of the body. It shouldn't be hyper colored or under colored black in vitiligo and should be no swelling and swelling can be congenital like what you see on the bottom left. It can be the result of a tumor like the two cases and the middle .or it can be due to inflammatory process like right side three pictures

Eye Lids

- Position

- Normal
- 1. Entropion
- 2. Ectropion
- 3. Ptosis



The normal position of the eyelids like what we see on the upper right is that the upper eyelid covers one to two millimeters of the upper cornea while the lower limbus is just touching with the lower eyelid in the right middle we can see that the margin of the eyelid is rolled inward taking the eyelashes with it which wraps at against the anterior surface of the eye and cause severe irritation. On contrary the bottom right, the eyelid is everted outside which makes severe dryness and keratosis of the conjunctiva overlying the lower papilla. On .the left side, you can see that the upper eyelid is broken down and that's what we call ptosis

Eye Lids

- Position

1. Entropion
2. Ectropion

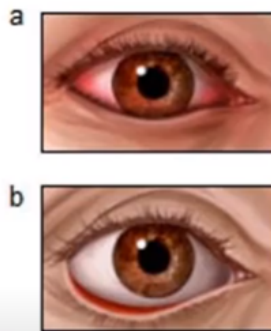


Figure 1

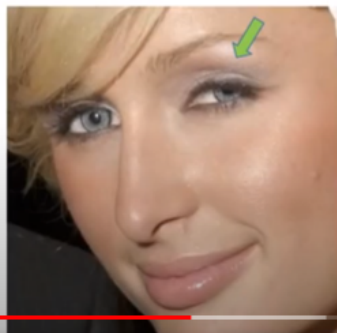
- a Entropion – eyelid turned in
b Ectropion – eyelid turned out

Here we can see entropion above and ectropion down and you can compare between the two of them

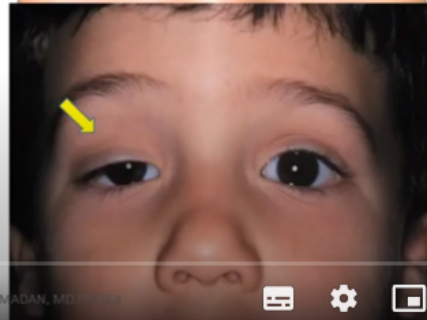
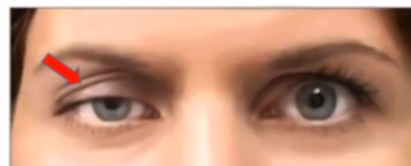
Eye Lids

- Position

- Ptosis



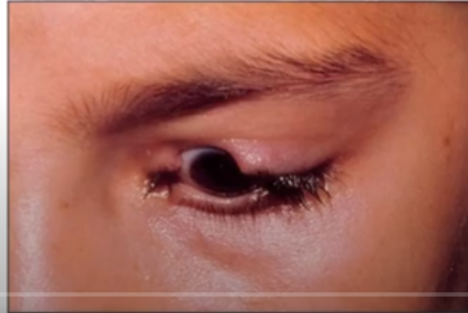
Ptosis (drooping of the eyelid)



ptosis can be severe, like what we see on the upper right, it's covering the pupil margin. Instead, we can see a crease in the lower right. It's also covering the pupil margin however, the crease is not visible. And ptosis can be just mild like what we see on the left side

Eye Lids

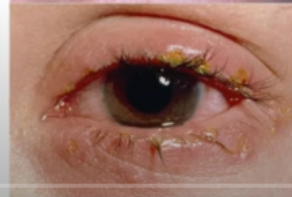
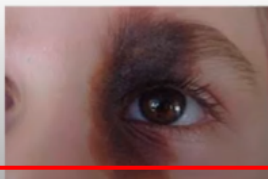
- Deformities
 - Coloboma
 - Injury



coloboma is a congenital absence of a part of the upper or lower eyelid due to malunion between the frontonasal process and maxillary process most in the lower eyelid. However it is congenital. And it can also result after improper repair of injury of the eyelid

Eye Lids

- Skin
 1. Color
 2. Polyps
 3. Inflammation



As we said earlier, the skin color like what we see here is nevus of ota on the far left, the skin may show tags or papilloma like in the middle. On the right side we have severe eczema like inflammatory process on the upper and lower eyelids and the lower right show crusting on the eyelashes and inflammation due to severe blepharitis

Eye Lids

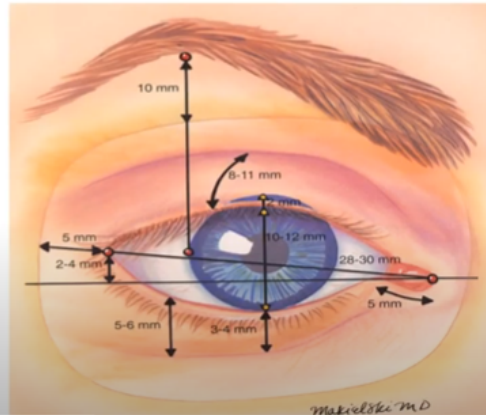
- Palpebral fissure

- Size

- 10-12 x 28-30 mm

- Position

- U-EL covers 1-2 mm
 - Of upper Cornea

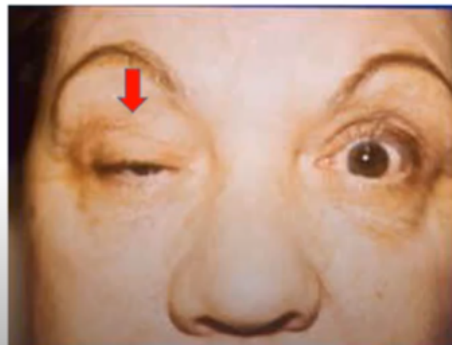


It's important to know the normal measurements of the palpebral fissure which is the opening between the upper and lower eyelids. The vertical dimension of the fissure is about 10 to 12 millimeters while the horizontal is 28 to 30 millimeters. As we said earlier, the upper eyelid might cover one to two millimeters from the upper cornea while the lower eyelid just touches the limbus

Eye Lids

- Motility

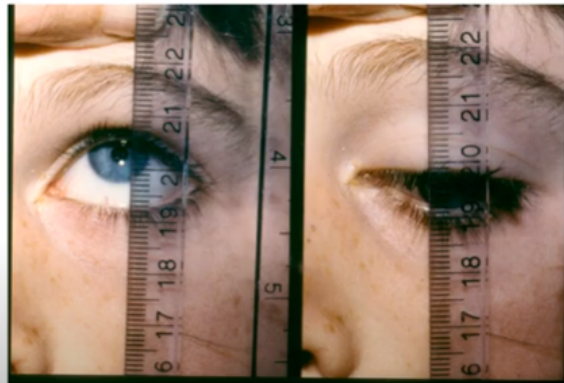
- Defective opening
 - Ptosis



the eyelids may have defective motility enabling to open the eyelids like in ptosis. Here it is ,severe case the right eye

Eye Lids

- Motility
 - Defective elevation



we can always determine the amount of magnitude of mortality available by asking the patient to look down and to look up with a ruler and then you can see how much the eyelid .can move

Eye Lids

- Motility
 - Defective closure

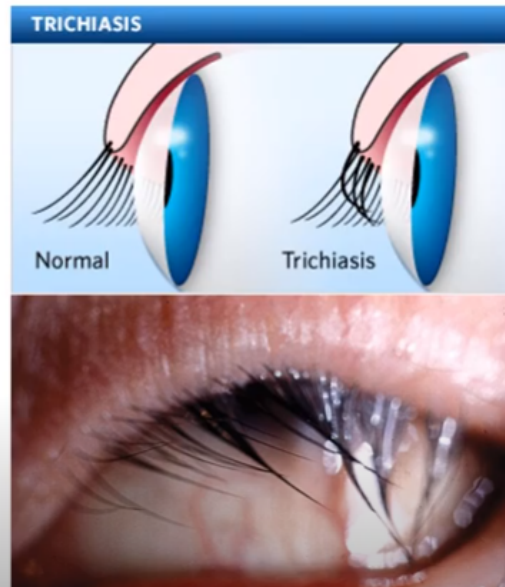


The opposite of ptosis is lagophthalmus which means the inability to close the eyes fully. Whether while sleeping or while awake trying to close the eye, you can always see a part of .the conjunctiva or the cornea through the open inter palpebral fissure

Eye Lids

- Lid margin

1. Position
2. Lashes



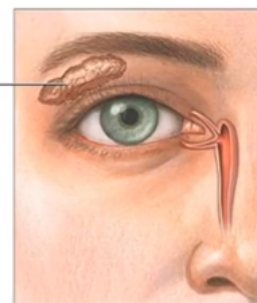
When commenting on the eyelid margin, it's important to know the position whether is entropion or ectropion but also it is important to comment on the lashes. On the top photo on the left we can see the normal eyelashes for the upper eyelid it goes down and forward and for the lower eyelid it goes up and forward however if any of the lashes is mal turn backward, we call that trichiasis And as we see in the lower photo it can rub against the anterior surface of the eye can cause severe irritation and can lead to severe loss of vision .later on

Lacrimal System

- Lacrimal gland:

- Not felt
- Except if
 1. Malignancy
 2. Chronic inflammation

Lacrimal gland



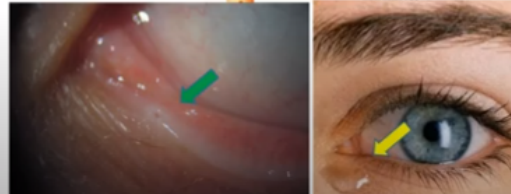
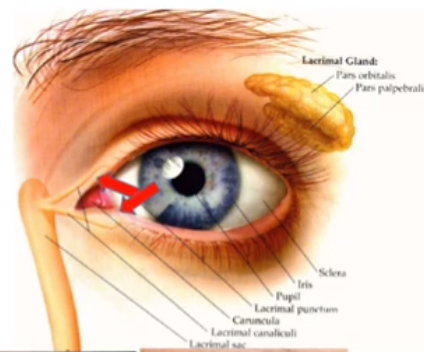
The lacrimal gland itself should not be palpable in normal subjects. If you can palpate it then it is swollen and that might be either due to chronic inflammation or even to malignancy. On the left side you can see it externally and on the right side you can see it only internally while everting the upper eyelid

Lacrimal System

- Punctum:

- Present

1. Absent
2. Blocked
3. Position

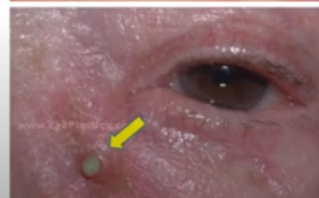


the drainage system of the lacrimal it starts with two puncta on the upper and lower eyelids the two puncta are very small opening which leads to lacrimal canaliculi, which opens into the lacrimal sac and then through the nasal lacrimal duct takes the eye tears into the nasal cavity, the puncta might absent or blocked like in the bottom right, and you can see the tears flowing over the eyelid which we call epiphora, on the bottom left, the punctum is open and normal however, the position is abnormal due to the presence of ectropion of lower eyelid and that's why the tears are not drained by the punctum causing again for a epiphora

Lacrimal System

- Lacrimal sac region:

1. Swelling
2. Inflammation
3. Fistula or scar



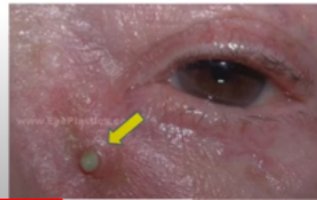
the lacrimal sac should not be palpable. However, if it gets inflamed or blocked, downside, it can swell it can get inflamed with resulting fistula or scar in long standing cases

Lacrimal System

- Lacrimal sac region:

- Palpation:

1. Tender
2. Cystic
3. Mucocoele of lacrimal sac
4. +Ve regurge
5. Hard swelling
 - Neoplasms

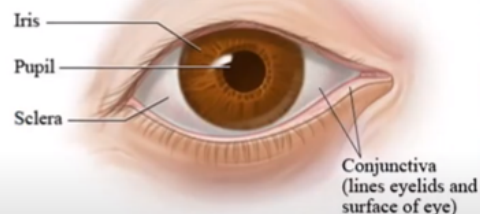


an inflamed lacrimal sac will be tender or painful. It should be cystic in consistency and it might contain mucus as a mucocoele or pus pyocoele. If you press on that swelling, you might get a pus or tears exuding out from the punctum and we call that positive regurge test. If you feel hard swelling, then you should suspect neoplasm in the lacrimal sac

Conjunctiva

- Normal

1. Injection
2. Chemosis
3. Sub conjunctival hemorrhage
4. Discharge
5. Degeneration
6. Discoloration
7. Tumors



© Healthwise, Incorporated

The conjunctiva is the cover of the anterior part of the sclera and the back of the eyelids. Normally it is white transparent with barely visible blood vessel. If it gets inflamed, it gets injected red due to dilatation of the blood vessels also it can get chemosis or edema or even subconjunctival hemorrhage. In case of severe inflammation it can get discharge and in chronic exposure to sun and environment it can get degenerated with some discoloration and as any part else of the body it can get tumors

Conjunctiva

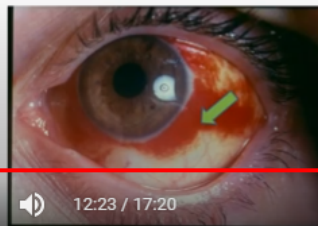
- Normal



This is the normal appearance of the conjunctiva thin transparent mucous membrane with some blood vessels showing

Conjunctiva

- Injection
- Chemosis
- Sub conjunctival hemorrhage



on the right side we can see severe congestion and injection of the upper and the lower fornix conjunctiva on the middle we can see milky white swelling of the conjunctiva of edema what we call chemosis. And on the left the severe case of Subconjunctival .Hemorrhage

Conjunctiva

- Discharge
- Degeneration
- Adhesion (Symblepharon)

The conjunctiva can have a discharge which can be watery in viral and allergic conditions it can be mucus in infection and mucopurulent eye conjunctivitis or purulent in severe inflammation like in gonorrhea. degeneration of the conjunctiva can lead to pinguecula as we see on the major photo, which also make progress to pterygium. And in severe chronic inflammatory process we can see like in the bottom left, severe adhesion between the palpebral conjunctiva and the Limbus called symblepharon usually with the connective .tissue disease

Conjunctiva

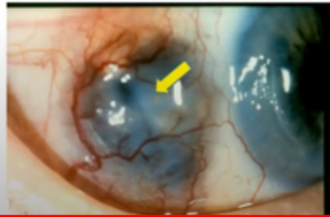
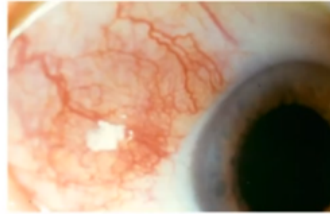
- Discoloration
- Tumours

Here we can see grayish discoloration on the upper right brownish one on the upper middle. This can be just normal or congenital or racial however it can also be associated with tumors

like leukoplakia and the bottom right. Melanoma lymphoma or even in the middle or even a cyst on the left side

Sclera

1. Tenderness
2. Nodules
3. Staphyloma



scleral inflammation can usually give tenderness and deep pain however severe cases can show a nodule like the lower right and in severe chronic cases like rheumatoid arthritis for example, we can see severe thinning and atrophy of the sclera which shows the choroid below it and we call staphyloma. The bluish colour

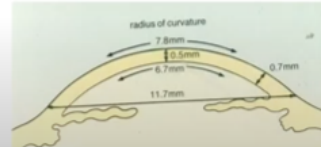
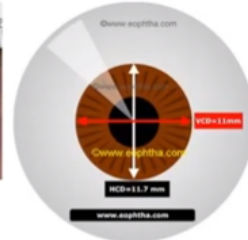
Cornea

1. Diameter
2. Shape
3. Ectasia
 - Keratoconus
4. Opacities
5. Ulceration
6. Vascularization
7. Sensitivity

cornea is important to know the diameter the shape to if there is a keratoconus or no also to note with that there is an opacity or ulcer any vascularity is abnormal and loss of .sensitivity might have indication of a severe neurologic disease

Cornea

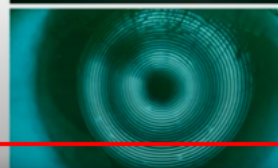
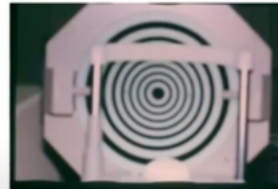
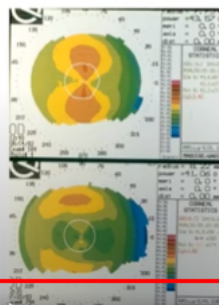
- Diameter
- Shape



a normal cornea will measure about 11 millimeters horizontally and a little bit more on the vertical. Access we can also measure the radius of curvature and the thickness of different parts of the cornea through topography and tomography. On the bottom left, we can see a .patient with large (Signs! 15:21) a case of buphthalmos or via congenital glaucoma

Cornea

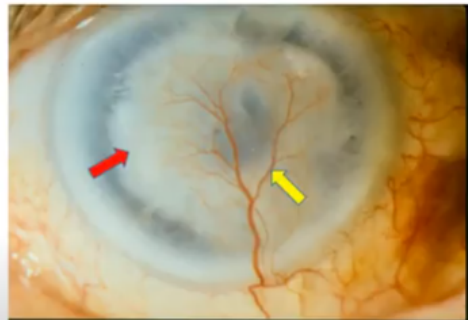
- Ectasia
- Keratoconus



This is a case of keratoconus. keratoconus is difficult to notice with the naked eye unless very severe as the bottom right. However, with new imaging, with tomography and with .topography, it can be readily be diagnosed

Cornea

- Opacities
- Vascularization



Any opacity or vascularity in the cornea is abnormal. This is a severe opacity and severe Neo .vessels

Cornea

- Sensitivity



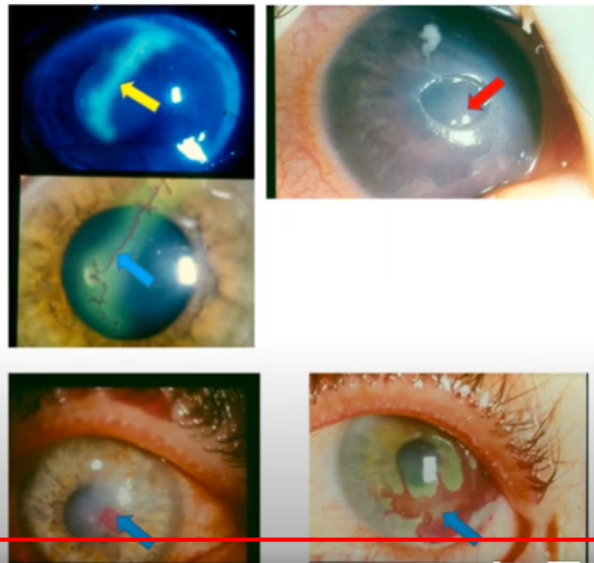
You can test the sensitivity of the cornea with the use of wiss of Catan and this is very important in cases of neurological diseases. The afferent system is the ophthalmic division of .the trigeminal nerve

Cornea

☐ Ulceration

☐ Staining

1. Fluorescein
2. Rose Bengal



Corneal ulcer as we can see here on the upper right, this is a chronic ulcer. We usually use especially stained like fluorescein on the top left or rose bengal in the lower three ones. In the middle, this shows dendritic ulcer and on the bottom right it shows dendritic ulcer with .faulty use of steroids in that patient

Anterior chamber

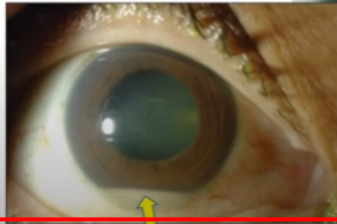
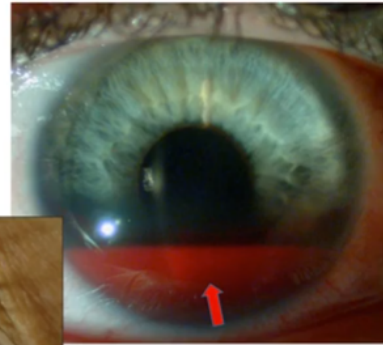
1. Depth
2. Contents
3. Angle

.anterior chamber we need to comment on the depth its contents and angle

Anterior chamber

□ Contents

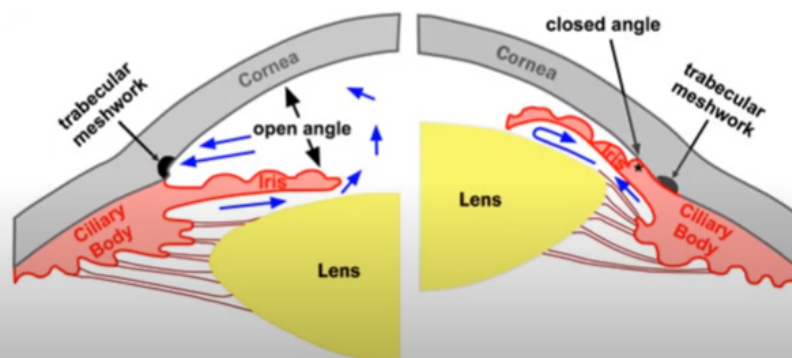
1. Hyphema
 1. Blood
2. Hypopyon
 1. Pus



It's easy to see the contents like hyphema on the right side and pus or hypopyon on the left side. Both cells settle down with gravity

Anterior chamber

1. Depth
2. Angle

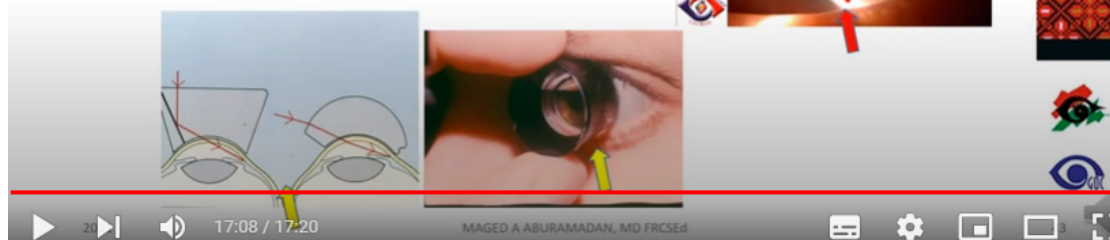


However, the depth and angle will need special skills and special instruments

Anterior chamber

□ Angle

1. Slit lamp
2. Goniolens



.like goniolens or three mirror lens in addition to slit lamp to know the exact measurements

Thank you very much