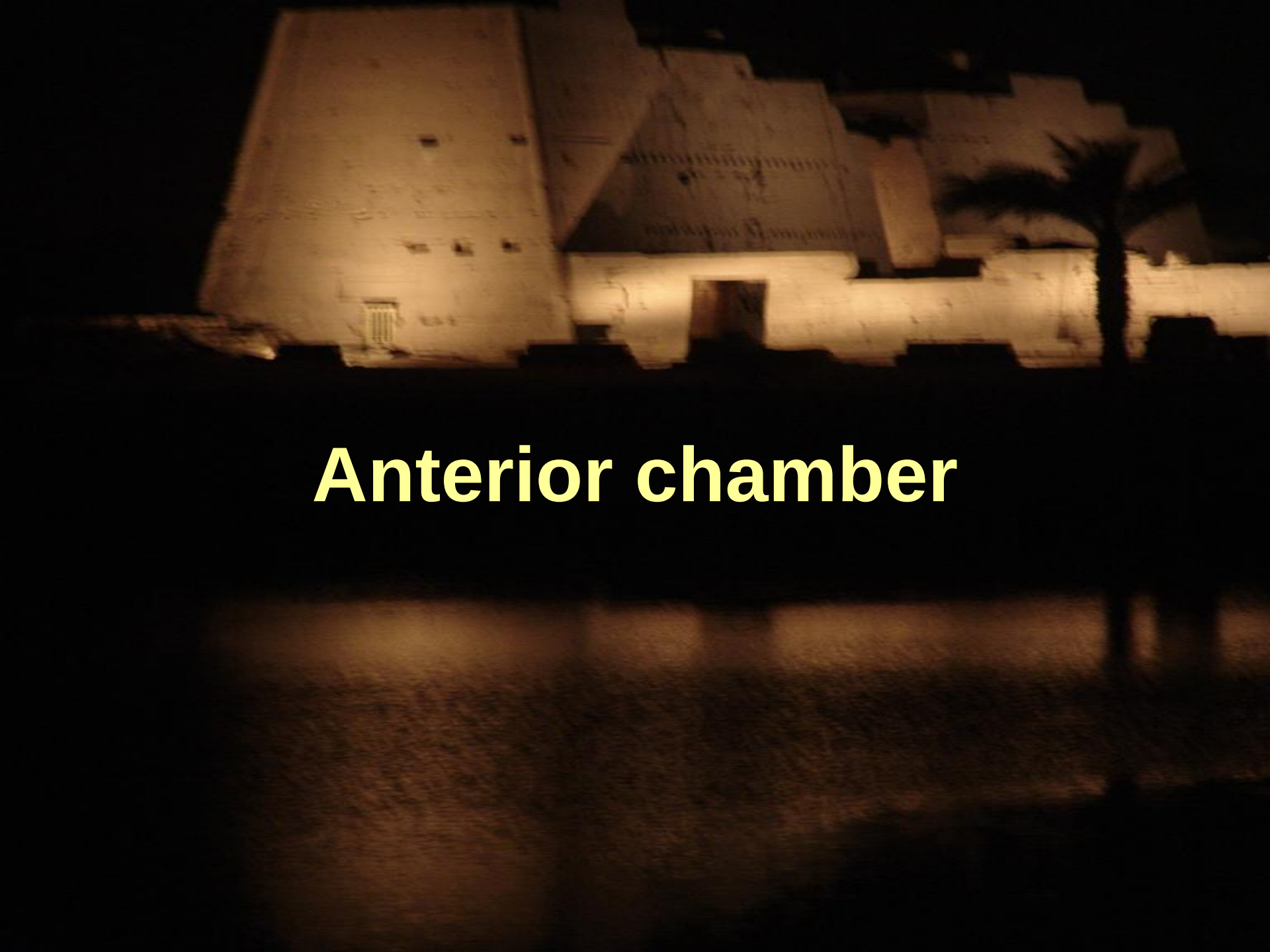


A nighttime photograph of the Great Pyramid of Giza, illuminated by warm, yellowish lights. The pyramid's stepped structure is visible against a dark sky. A palm tree stands to the right of the pyramid. The foreground is dark and blurry, showing a reflection of the pyramid. The text "Anterior chamber" is overlaid in the center in a bold, yellow font.

Anterior chamber

- Abnormal depth of anterior chamber:

1- Shallow anterior chamber:

- Anterior displacement of the lens
- Posterior synechia with iris bombe
- Tumor of iris
- Corneal perforation and loss of aqueous humor

2- Deep anterior chamber:

Microphakia

Buphthalmia in glaucoma

Abnormal content in anterior chamber

1- Hypopyon (inflammatory exudates or pus)

Causes: ulcerative keratitis-
uveitis

Signs: inflammatory exudate
at anterior chamber may be in
triangular shape.

Treatment: remove cause

Medical treatment (alphachemotrypsin)

Surgical : paracentesis and aspiration

Stab incision in limbus and iris hook.



Hyphema

- Blood in anterior chamber
- **Causes:** iridocyclitis, iris tumors- Direct or indirect blunt trauma- Chronic glaucoma- Infectious disease- Retinal vascular disease- Anterior chamber paracentesis- intra-ocular surgery
- **Treatment:** removal cause
- Usually clear within 24h
- Epinephrine 1-2%
- Fibrinolysin enzyme
- Stab limbal incision



Fibrin (plasmoid aqueous)

- Causes: escape in anterior chamber due to anterior uveitis- intraocular surgery- wound- paracentesis
- Signs: adhere to cornea → leucoma
- Adhere to lens and iris → posterior synechia and iris bombe
- Adhere to filtration angle → glaucoma
- Treatment: remove cause + fibrinolysin

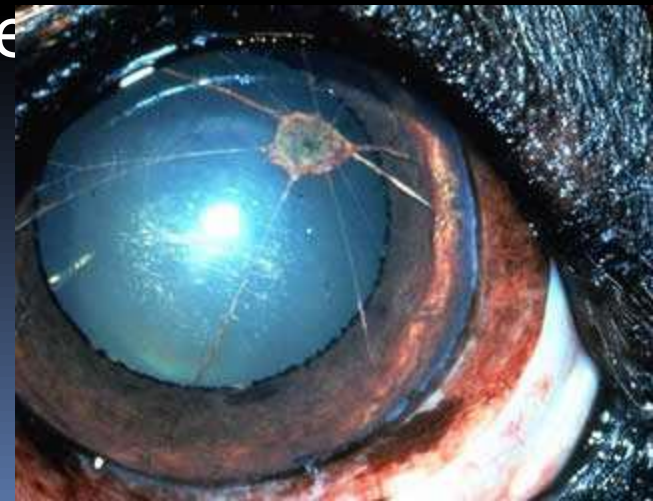
- 
- **Lipid aqueous:** due to hyperlipemia in dogs and destruction of blood aqueous barrier.
 - Milky appearance of anterior chamber
 - **Treatment:** low fat diet and thyroid therapy.

- 
- Lens
 - Tumors
 - Iris cyst
 - Parasites
 - Foreign bodies



IX-AFFECTIONS OF THE ANTERIOR UVEA

- I-CONGENITAL ABNORMALITIES OF ANTERIOR UVEA:
- 1-PERSISTENT PUPILLARY MEMBRANE:
- Persistent pupillary membrane
- (PPM) is a condition of the eye involving remnants of a fetal membrane that persist as strands of tissue crossing the pupil



- *Signs: -*
- 1-These strands may extend from one part of the iris to another, from the iris to the lens or to the cornea, or it has free end.
- 2-Strands from iris to cornea may cause corneal opacity and strands from iris to lens may produce cataract but those from iris to iris have no clinical signs.
- *Treatment: -*
- This condition does not reduce functional vision significantly and thus does not require surgical intervention.
- **2-IRIS COLOBOMA**
- **3-IRIS CYST**
- An iris cyst, or uveal cyst, is a small hollow attached to the iris of the eye or floating free in the anterior chamber.



- *Types: -*
- **A-Pupillary Cyst**
- It is originating from the pupillary margin of the pupil.
- **B-Posterior Chamber Cyst**
- Originates from the posterior surface of the
- **C-Stromal Iris Cyst**
- Present in the iris stroma itself.
- **D-Vitreous Cyst**
- Originate from the ciliary body and usually develop between the lens and vitreous humour. No treatment is recommended.
- **E-Free Cyst**

- **4-HETEROCHROMIA**

- It is the presence of a difference in the color of the iris in both eyes or part of one iris has a different color. The difference in color may be hypopigmentation or hyperpigmentation. It is a common affection in buffaloes

- **5-ANIRIDIA**

- Total absence of iris

- **6-POLYCORIA**

- Presence of more than one pupil

- **7-ANCORIA**

- Absence of pupil

- **8-DYSCORIA**

- Abnormal shape of the pupil

■ **II-ACQUIRED DISEASES**

■ **1-ANTERIOR UVEITIS or IRIDOCYCLITIS**

- Anterior uveitis is an inflammatory condition of the iris and ciliary body. When severe, it results in a contraction of the pupil of the eye, increased accumulation of protein and cells in the anterior chamber, low pressure within the eye, an abnormally high level of blood in the conjunctiva, swelling of the iris, photophobia (high sensitivity to light), mild to severe squinting, blinking, eyelid closure, and tearing.

■ *Causes: -*

■ **A-Exogenous Causes**

■ **B-Spreading Of Inflammation From Other Parts Of The Eye**

■ **C-Specific Disease**

- Dogs (Infectious hepatitis, leukemia and heartworms)
- Cats (Infectious feline peritonitis, feline leukemia and toxoplasmosis)
- Equine (Leptospirosis, brucellosis and Onchocerca cervicalis)
- Bovine (Malignant catarrhal fever, and Pink eye)
- Sheep and goat (Mycoplasma)

■ **D-Presence Of A Primary Focus Of Infection In The Animal Body**

- (tonsils, teeth, anal sacs and prostate)

- *Symptoms: -*
- Anterior uveitis may be acute or chronic, unilateral or bilateral. If the cause is a systemic disease it is usually bilateral and if the cause is hypersensitivity it is usually unilateral. When it is acute, it is manifest by miosis, increased protein and cells in the anterior chamber, low intraocular pressure, bulbar conjunctival hyperemia, iridal swelling, photophobia, and blepharospasm. Secondary glaucoma, cataract, and corneal opacification may be complications. Concurrent posterior uveitis or choroiditis is frequent.
- 1-Blepharospasm, excessive tearing, eye rubbing and conjunctivitis
- 2-Circum-corneal injection of the conjunctival and ciliary blood vessels
- 3-Cloudy cornea
- 4-Abnormal contents of the anterior chamber that starts out as increased aqueous flare then hyphaema, fibrin clots and hypopyon may be observed.
- 5-Iris changes, as the iris becomes rough, dull in color and swollen in appearance. The pupil is constricted (miosis) due to exhaustion of the dilator
- 6-Posterior synechiae may develop due to adhesion of the iris to other structures mainly to the lens. Focal adhesion will result in an irregularly shaped pupil and opacity of the lens capsule. Adhesions may prevent aqueous flow into the anterior chamber and the iris bulges (iris bombe), the filtration angle is obliterated and secondary glaucoma develops.
- 7-Intraocular pressure is hypotonic in early cases then hypertonic in later stages due to obstruction of the filtration angle by fibrin clot or hypopyon.

- *Treatment: -*
- **A-Mydriatics**
- **B-Anti-inflammatory drugs**
- **C-Antibiotics**
- **D-Supportive treatment**
- Keeping the animal in dark room with application of worm compression
- **COMPLICATIONS**
- 1-Peripheral anterior synechiae or posterior synechia
- 2-Cataract
- 3-Glaucoma

▪ 2-EQUINE PERIODIC OPHTHALMIA

- Equine periodic ophthalmia (EPO), equine recurrent ophthalmia (ERO), recurrent anterior uveitis (RAU), or moon blindness. The recurrent nature of the disease has long been recognized

▪ *Causes: -*

- 1-Deficiency of vitamins A, B, and C
- 2-Leptospirosis
- 3-Brucellosis
- 4-Streptococcal hypersensitivity
- 5-Onchocerca cervicalis

▪ *Symptoms: -*

- Moon blindness is the most common cause of blindness in horses and mules
- 1-Blepharospasm and photophobia
- 2-Catarrhal conjunctivitis
- 3-Circum-corneal ciliary injection
- 4-Cloudiness of the cornea
- 5-Aqueous flare, hyphaema, and hypopyon
- 6-Miosis
- 7-Anterior and posterior synechiae
- 8-Complicated cataract
- 9-Retinal edema or detachment

▪ *Treatment: -*

- 1-Mydriatics, topical atropine to relieve the ciliary spasm and dilate pupil
- 2-Antibiotics, antihistamines and vitamins have little effect on the course of the condition.
- 3-Anti-inflammatory agents are administered parenterally, topically and subconjunctively.
- 4-Additional therapy can be used according to the cause.

Glaucoma



Glaucoma

- **Def.:** increased IOP more than (15-25) due to excessive production or defect in drainage
- **Classification:**
 - 1- according to etiology: (primary = not accompanied with other eye diseases, secondary to lens luxation or uveitis and congenital)
 - 2- according to the condition of irido-corneal angle (open, narrow and close)
 - 3- according to length of time elapsed (acute and chronic)

Glaucoma

■ Signs:

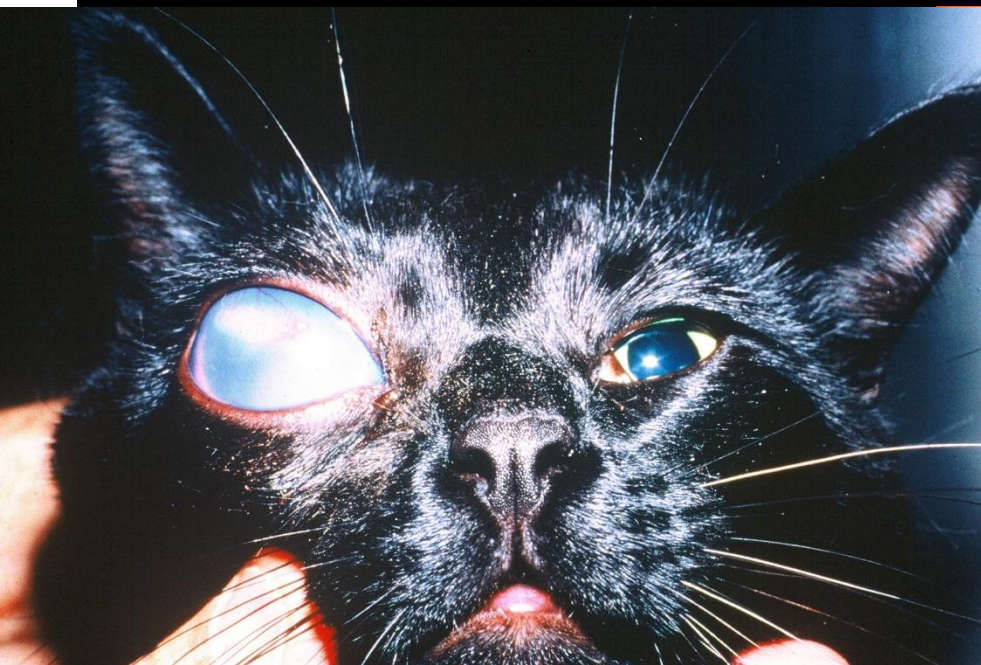
- 1- cornea (edematous, vascularized, megalocornea, pigmented and corneal ulceration)
- 2- sclera (buphthalmia lead to enlargement sclera, thin and atrophied.)
- 3- iris: (progressive atrophy, thin stroma, dispersed pigment in the anterior chamber and enlarged pupil)
- 4- ciliary body: (progressively atrophied with impaired aqueous humor formation)
- 5- anterior chamber (anterior synechia)
- 6- chroid (thinning and atrophy)
- 7- lens (change morphology and position +cataract)
- 8- vitrous humor (degeneration + liquifications and multiple strands)

Glaucoma

- Diagnosis: tonometry
- Tonography (tonometry for long period)
- Gonioscopy: examine the angle of anterior chamber
- Ophthalmoscopy: for fundus and optic N.
- Treatment: 1- Medical: drugs decrease aqueous humor production (carbonic anhydrase inhibitors or beta adrenergic blockers)
- Drugs improve the outflow of aqueous humor (pilocarpine 4% and epinephrine 1-2%)
- Drugs cause reduction in IO volume as hyperosmotic agents (glycerine, mannitol and urea)

Surgical treatment:

- Cyclo-destruction (partial destruction of ciliary processes trans-sclerally by a freezing probe)
- Increase drainage with an implant (subconjunctival space)
- Cyclodialysis: (artificial fistula between anterior chamber and subconjunctival space)
- Iredectomy
- Iridencleisis: (radical section of iris + torned in 2 iridal pillars and secured at ends of limbal wound)
- Scleral trephination
- Removal of luxated lens



lens



Congenital anomalies:

- Aphakia:
- Microphakia:
- Lenticonus :anterior and posterior protrusion
- Lentiglobus: spherical lens
- Colobama:
- Persistent pupillary membrane
- Persistent hyaloid artery

Cataracts:

- Opacity of the lens and/or its capsule

- **Classifications:**

1- according to degree of maturation:

1.1- Inceipient cataracts: beginning opacity, early cortical vacuolar changes, prominent lens sutures and sight still normal

1.2-Immature cataracts: increase lens size- splitting and separation of lens sutures- imaped sight but fundic reflexes normal

1.3- Mature cataracts: opaque lens- lost vision-disappear fundic light reflex

1.4- hypermature cataracts:(shrunk- morgagnian-resorption)

- 2- according to age of onset:
- Congenital- juvenile (developmental)- senile

3- according to part of lens involved:

Capsular- subcapsular- cortical- nuclear- total

4- according to the cause:

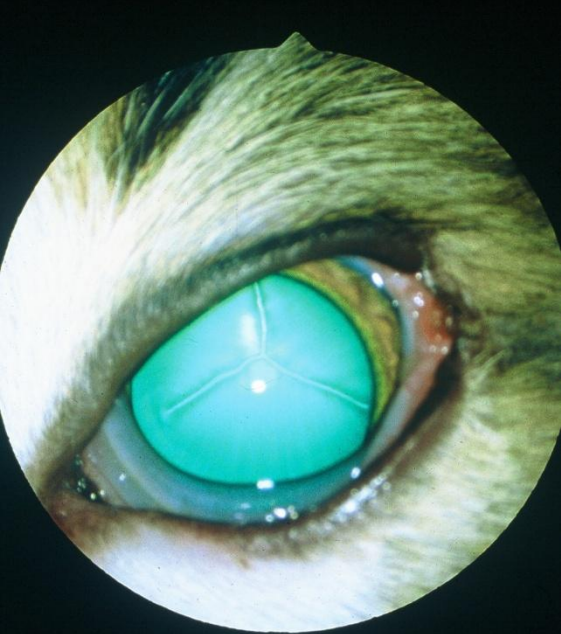
Inherited- traumatic- metabolic (diabetic)- toxic-
parasitic.

Treatment :1- medical: not objective (selenium-
tocopherol injection, sulphadiazin, horse serum
extract with cytolized culture of actinomyces
bovis)



Surgical treatment:

- Extracapsular extraction
 - Intracapsular extraction
 - Phacoemulsification
 - Aspiration
- 



10



- Lens luxation: partial or complete breakdown of suspensory ligament (congenital-traumatic-secondary to intraocular tumor or hypermature cataracts)
- Classification:
 - 1- subluxation: (remain behind iris)
 - 2- luxation: anterior or posterior
- Treatment : removal of lens

