

eLearning
by  **Dr. M.G.R.** EDUCATIONAL AND RESEARCH INSTITUTE



Dr. M.G.R

EDUCATIONAL AND RESEARCH INSTITUTE

(Deemed to be University with Graded Autonomy Status)

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Maduravoyal, Chennai - 600 095, Tamilnadu, INDIA



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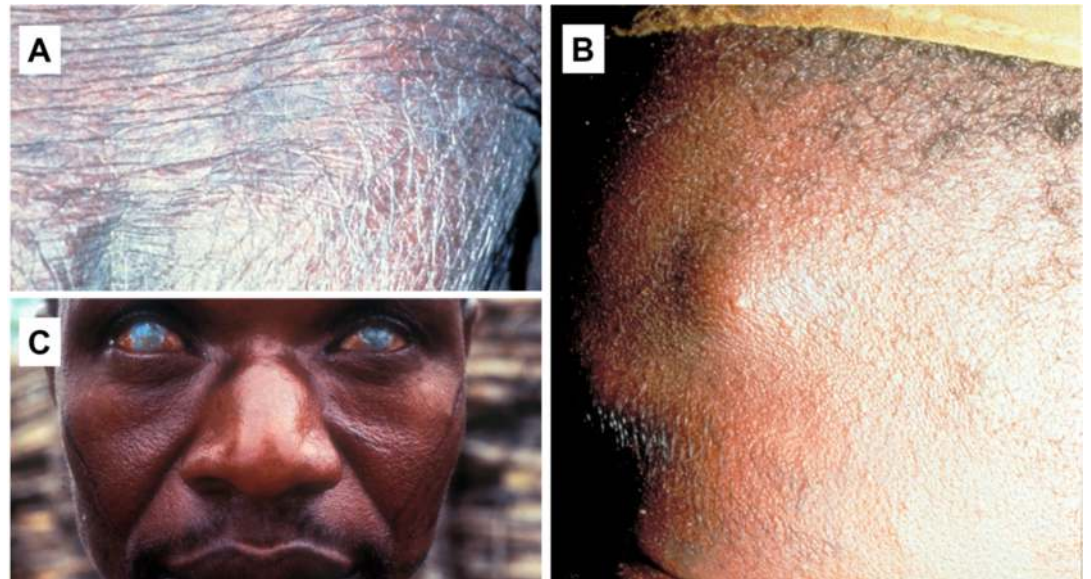
- Ocular involvement is preeminent clinical feature in certain systemic parasitic infections like
- onchocerciasis (river blindness)
- loiasis (eye worm), and
- toxoplasmosis (retinochoroiditis).

Onchocerciasis:

- Onchocerciasis, also known as river blindness, is a disease caused by infection with the parasitic worm *Onchocerca volvulus*.

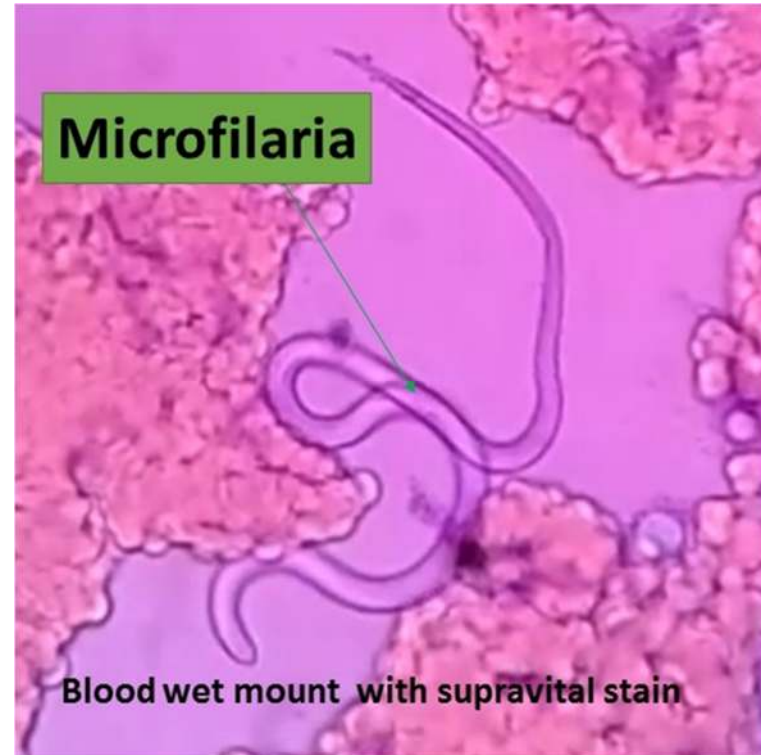
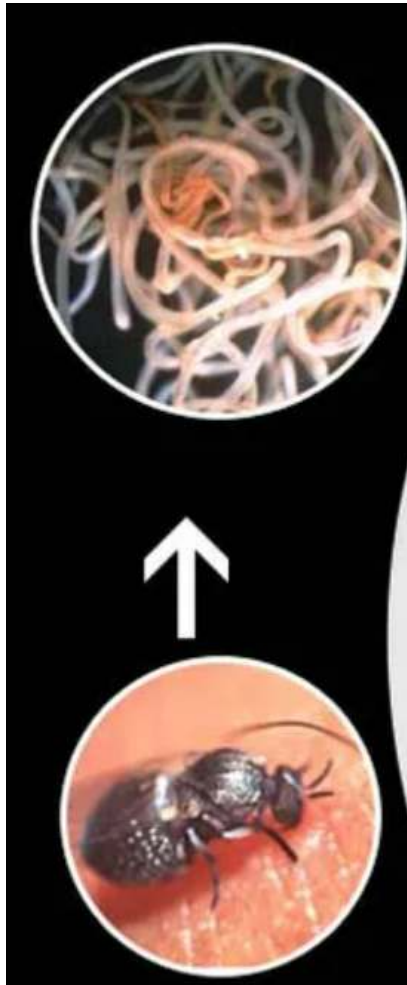
Symptoms include severe itching,

- bumps under the skin,
- and blindness



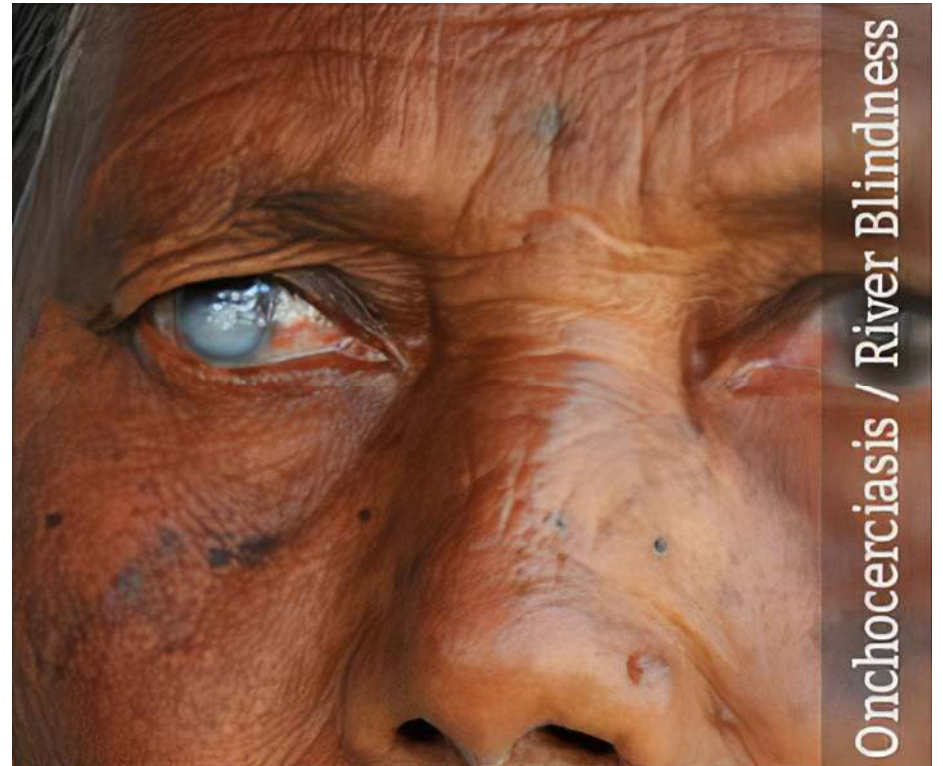
- It is the second-most common cause of blindness due to infection, after trachoma.
- Mode of transmission: bite of blackfly (genus Simulium), rivers and streams





- Ocular findings: Microfilariae

- Migrates:
 - conjunctiva,
 - cornea,
 - anterior chamber,
 - vitreous humor,
 - retina,
 - choroid,
 - and optic nerve .
- Unilateral marked inflammation



- Dead or dying microfilariae
- Anterior segment (Punctate keratitis, fluffy 'snowflake' corneal opacities and iritis)
- posterior segment (chorioretinitis, papillitis, and optic atrophy) granulomas, cataracts, secondary glaucoma, sclerosing keratitis (chronic, recurrent) , blindness



- **Eye:** Symptoms and signs of onchocerciasis in the eye include the following:
 - Inflammation of the conjunctiva, resulting in increased sensitivity to light.
 - **Damage to the cornea:** Mild damage may recover on its own, but extensive damage may result in scarring and blindness.
 - Damage to the inner choroid and retinal layers of the eye
 - Damage to the optic nerve resulting in blindness

Loaiasis:

- Causative agent: *Loa loa*
- Mode of transmission: large, day-feeding red fly Chrysops (Deer fly or Mango fly)

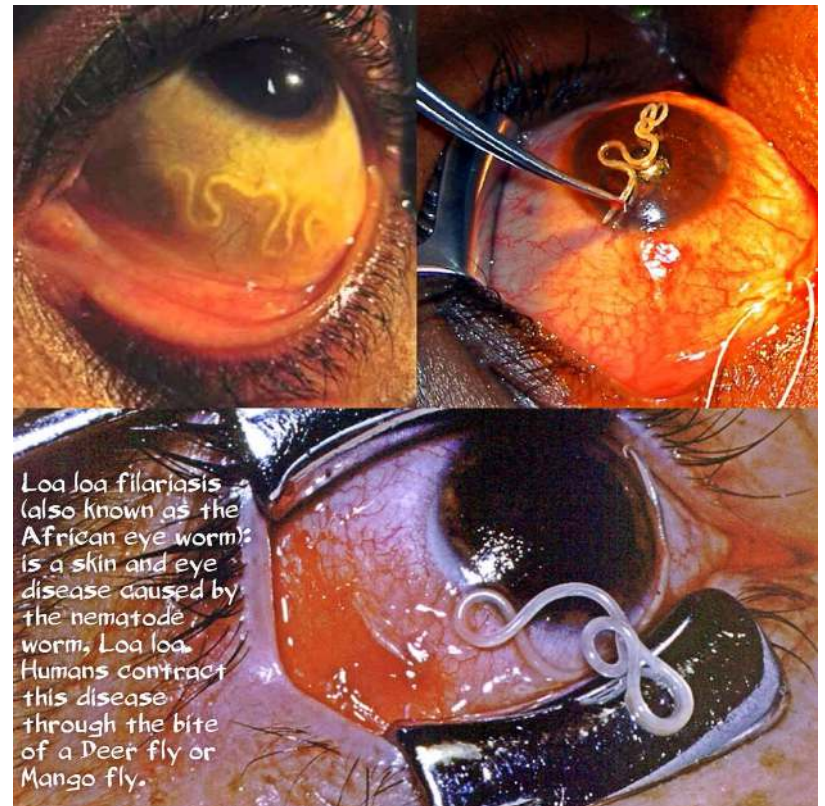




- The tabanid flies most commonly bite during day time and are more common during rainy season.
- The smoke of wood fires and movement of people attract them.
- These flies are more commonly found near rubber plantations and are attracted by the well-lit homes.
- The larvae are passed from flies to humans when humans are bitten by these flies.
- The larvae develop into adults in the human host over one year and migrate through cutaneous and subcutaneous tissue.
- Migration of the adult worm is painless, but it is associated with mild tingling sensation.
- It may involve the nasal area, bulbar conjunctiva and eyelids.

Ocular findings: subconjunctival migration is most common (worms move -1cm/min ,foreign body sensation)

- Mild conjunctival injection transient visual disturbances
- Periorbital swelling &
- adult worms in eyelid,
- anterior chamber,
- vitreous, or
- retina
- swelling of the eyelid
- uveitis

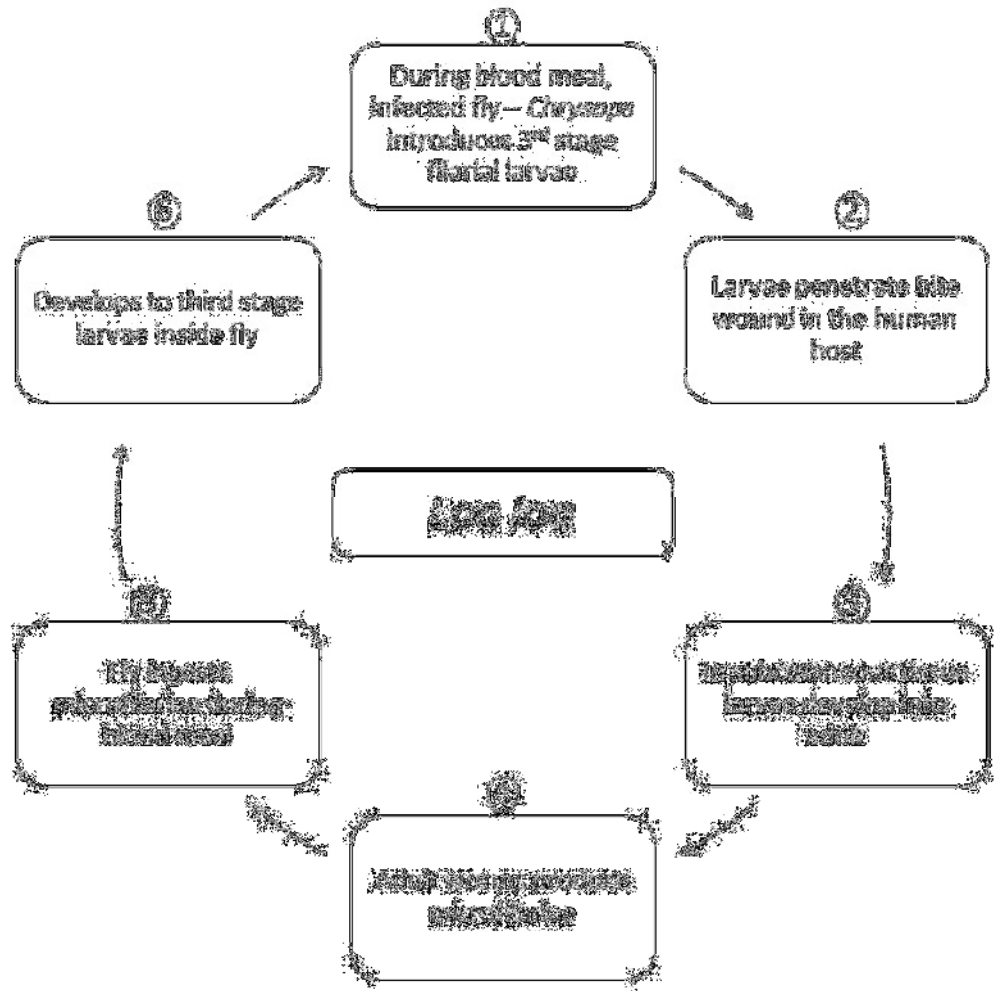


Diagnosis: clinical blood drawn between 10.00 a.m. & 2.00 p.m

- Microfilariae serology eosinophilia

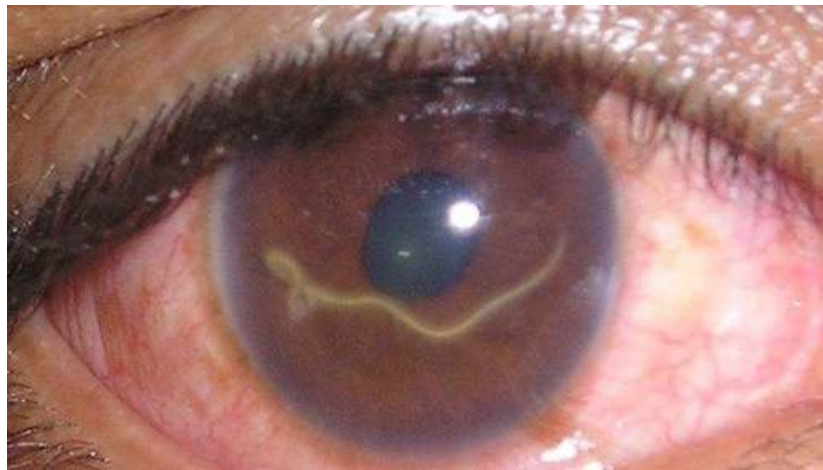
Treatment: albendazole, ivermectin, steroids, surgical removal or cryo probes

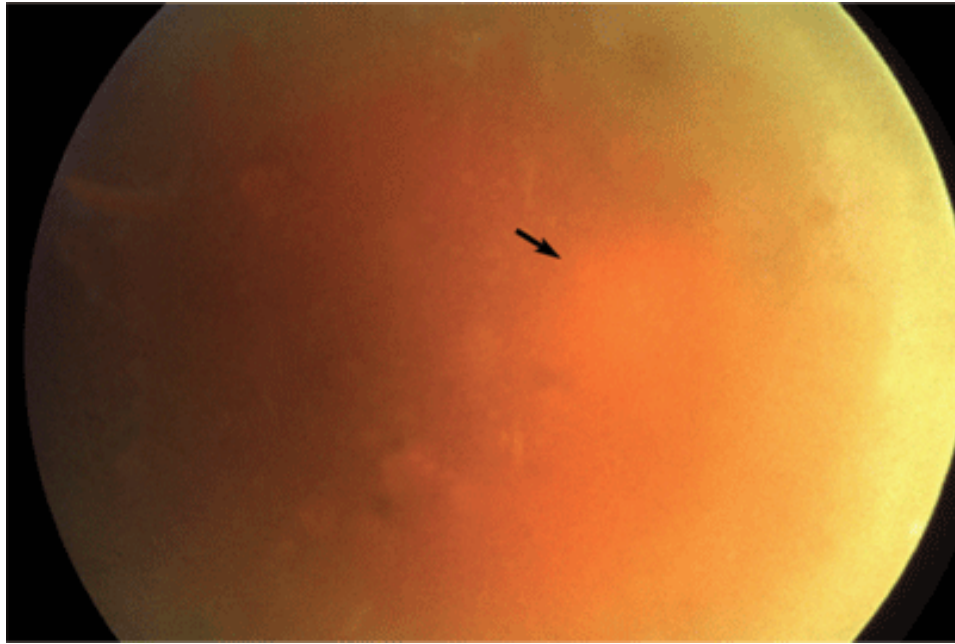




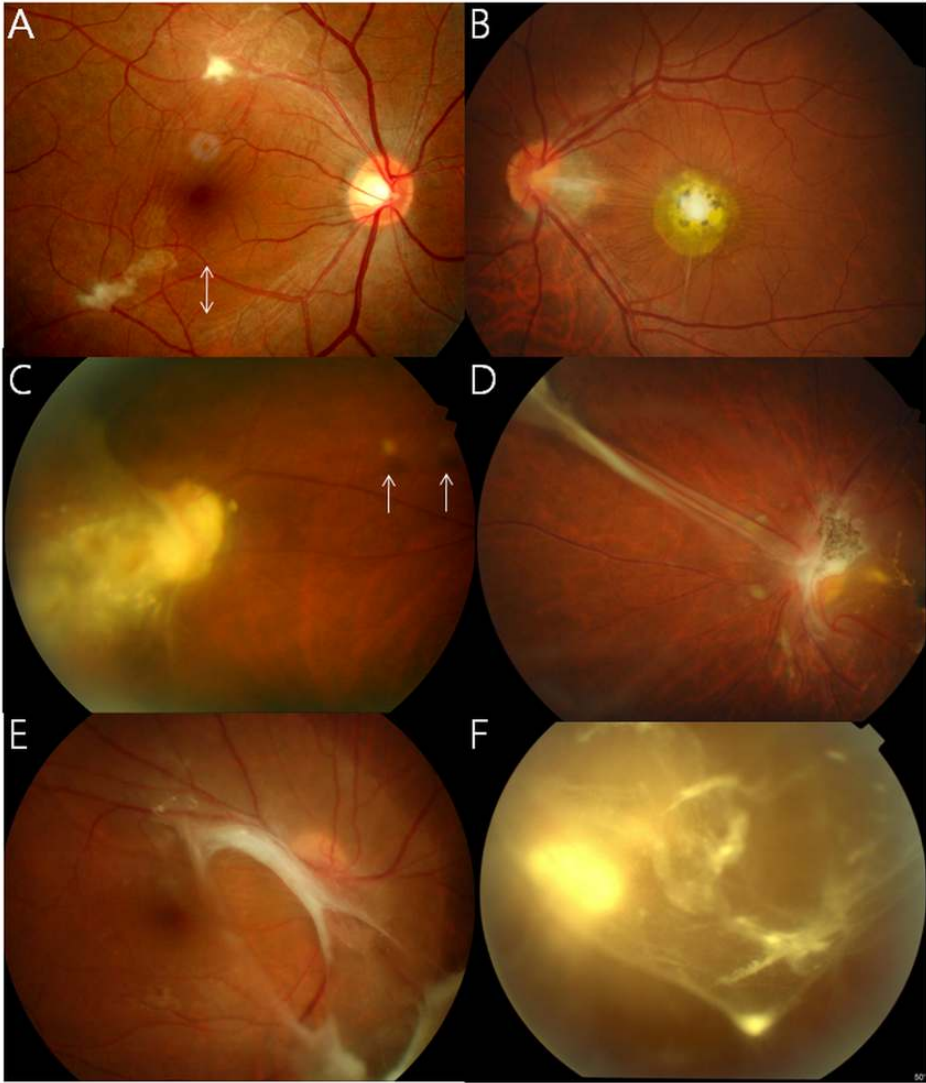
Toxocariasis:

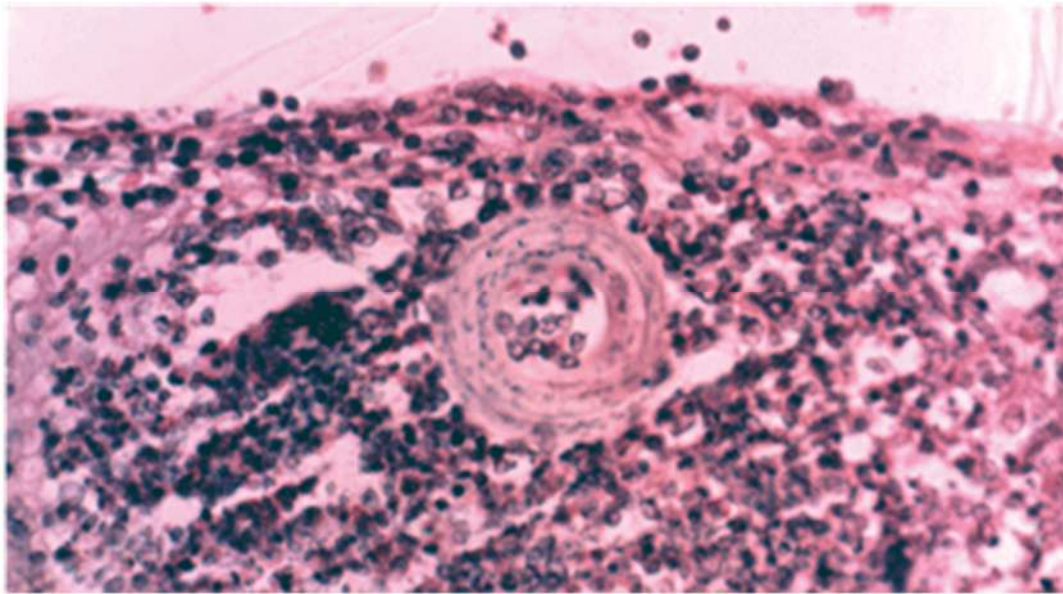
- Causative agent: *Toxocara canis*, *Toxocara cati*
- Life cycle: dogs and feline-definitive hosts, humans represent a dead-end infection





Toxocara endophthalmitis. Extensive vitritis obscures fundus details such that the optic disc (arrow) is barely visible.





An Hematoxylin and eosin

H&E stained section through the peripheral retina showing a dead *Toxocara canis* larva in the center of an eosinophilic granuloma.

- Ocular findings: older children 8 -16 years
- History of exposure to kittens or puppies
- Unilateral granuloma-peripheral retina, near macula or on optic nerve posterior pole lesions(white or gray rounded masses)
- pars planitis
- chronic endophthalmitis
- vitritis,
- vitreous traction strands leading to the optic disk or granuloma
- leukokoria
- Strabismus
- CME

- Diagnosis: eosinophilia, clinical features, serology
- Differential diagnosis: retinoblastoma
- Unilateral mass in a young child: retinoblastoma (younger than 3 years) and ocular toxocariasis (7 or 8 years of age or older)
- USG, CT and MRI help to distinguish
- Treatment: Asymptomatic- no chemotherapy, Albendazole, steroids
Vitreoretinal surgery

Thank You...



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