

Transmission to humans

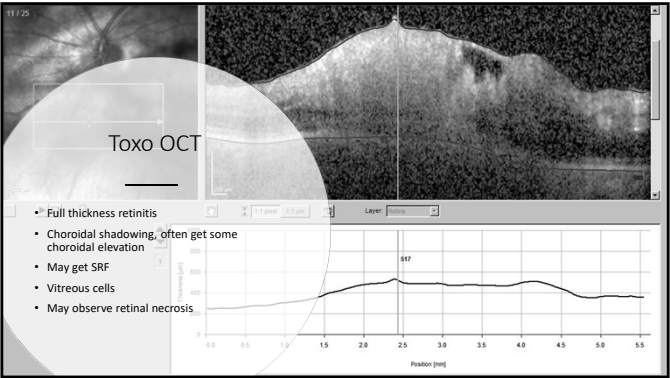
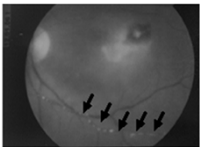
- Ingestion tissue cysts in undercooked meat
- Ingestion oocysts with food (flies, dirty hands, unwashed fruit and veg)
- Transplacental and usually only if mother acutely infected whilst pregnant
- Transfusion or transplant into sero –ve recipient

Signs

- Retinochoroiditis: soft, cream coloured + vitritis (headlight in the fog)
- Adjacent haemorrhage, vascular sheathing
- Satellite lesions and old scars in 72% at 1st presentation to ophthalmologist
- Punctate inner or outer retinitis variants
- Kyrleis phenomenon
- ?Association with Fuchs' heterochromia

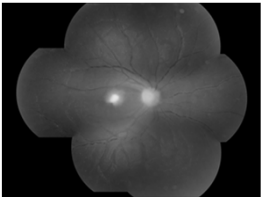
Kyrieleis phenomenon

- Segmental arteritis in which discrete yellowish white exudates are observed along the retinal arteries like beads on a string

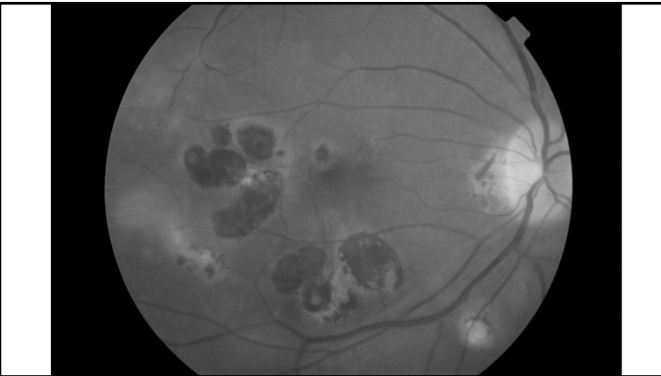
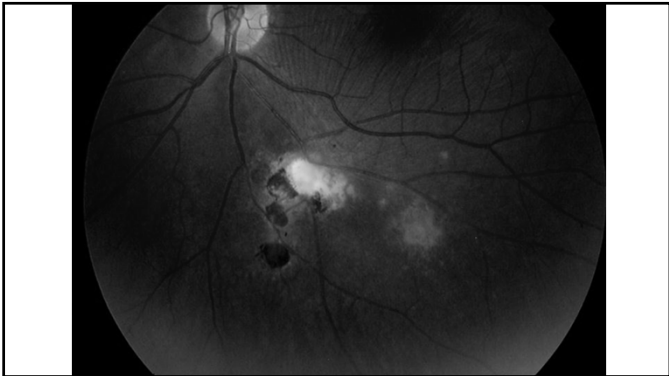
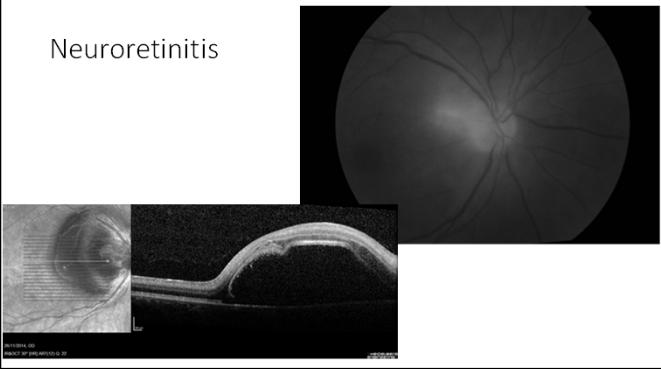


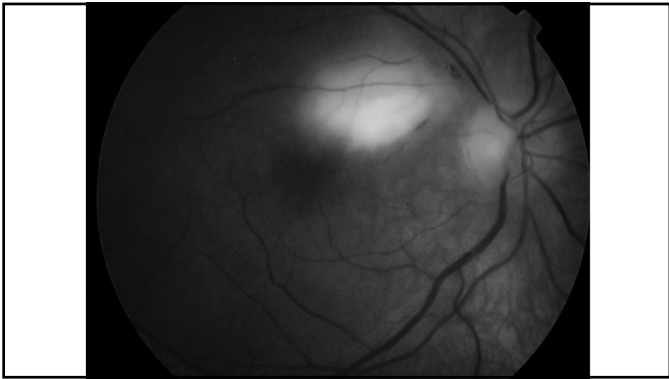
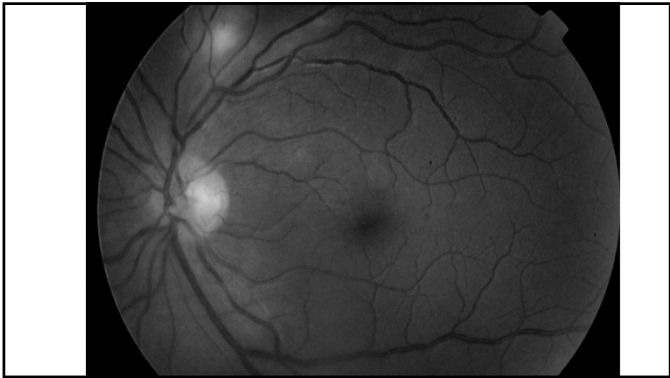
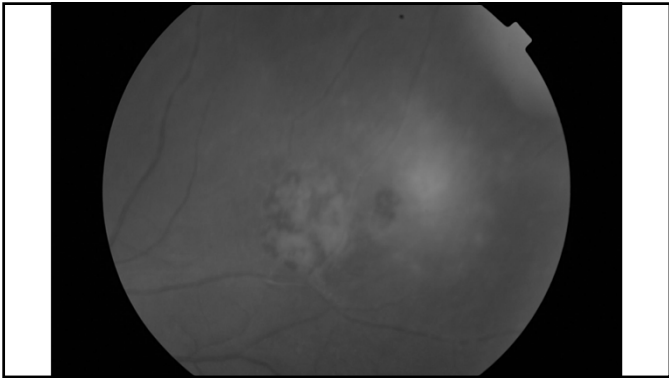
Other signs

- Papillitis/optic neuritis
- Neuroretinitis
- Intermediate uveitis



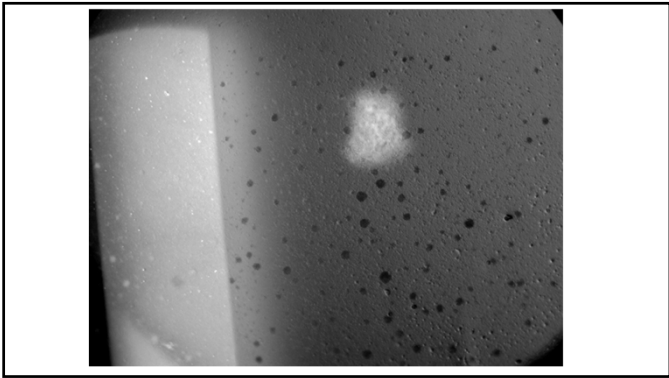
Neuroretinitis



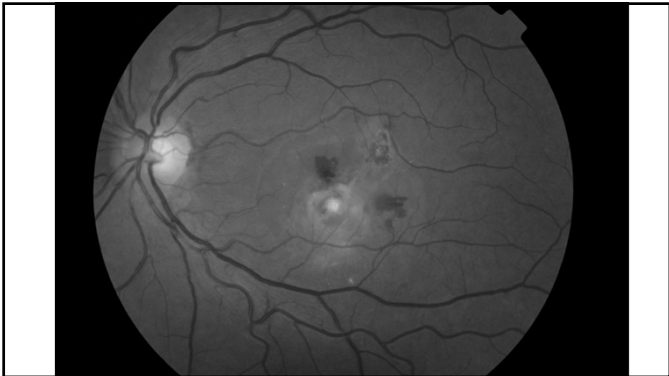


Complications

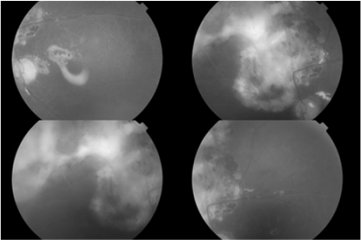
- Granulomatous anterior uveitis
- Vitritis
- CMO (less common than you would expect for amount of inflammation)
- BVRO/BRAO
- Exudative retinal detachment
- CNVM
- Neovascularisation disc and elsewhere
- Cataract
- Secondary glaucoma
- Scleritis
- Rhegmatogenous retinal detachment 3-6%



Toxo panuveitis, cataract, no fundal view

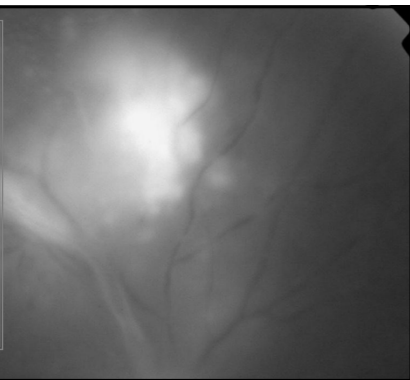


Secondary retinal detachment and glaucoma



Recurrence rate
Wadhwa H, Sims J,
Niederer R 2020

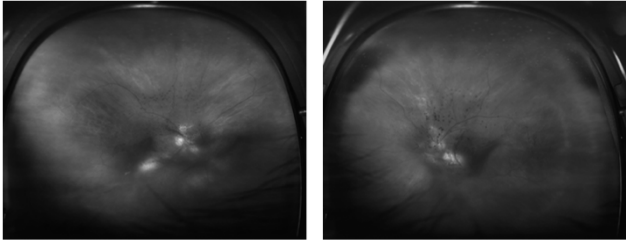
- Within Auckland population recurrence rate
 - 15% at 1 year
 - 25% at 2 years
- Risk of recurrence increases 2.6x for every documented recurrence



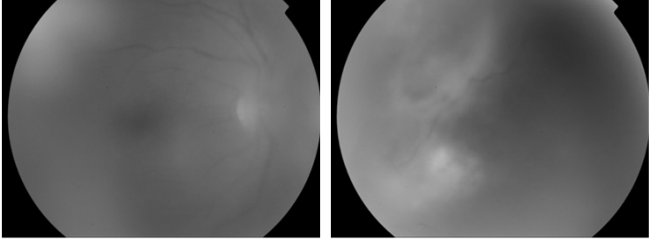
Immunocompromised

- Clinical picture similar but more aggressive
- More often multiple concurrent activation sites and of the ‘acquired’ type
- May have massive necrosis as seen in ARN
- Vitritis depends on immune profile of patient
- Unlikely to be self limiting disease
- 1/3 with ocular toxo have CNS toxo (in AIDS population) → [neuroimage all](#)

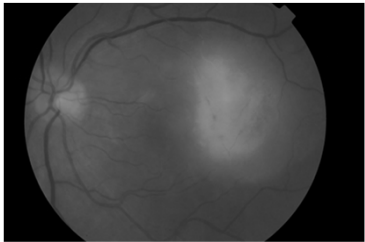
HIV CD4 130, not taking HAART



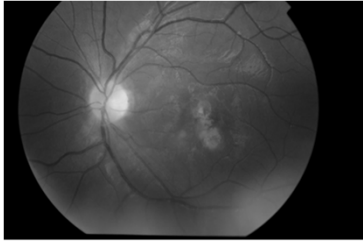
HIV



Toxoplasma immunosuppressed due to SLE



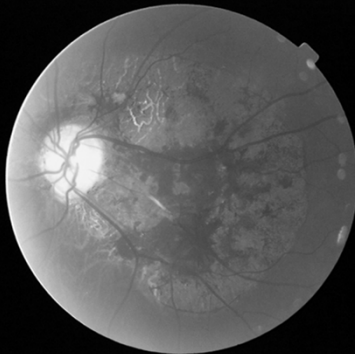
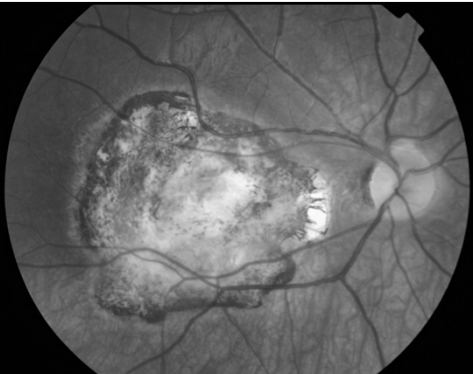
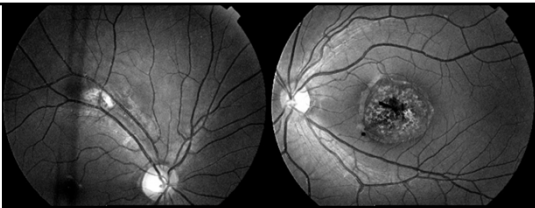
Iatrogenic immunosuppression

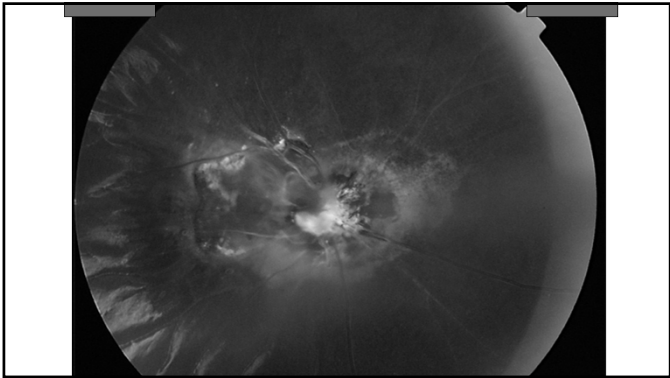
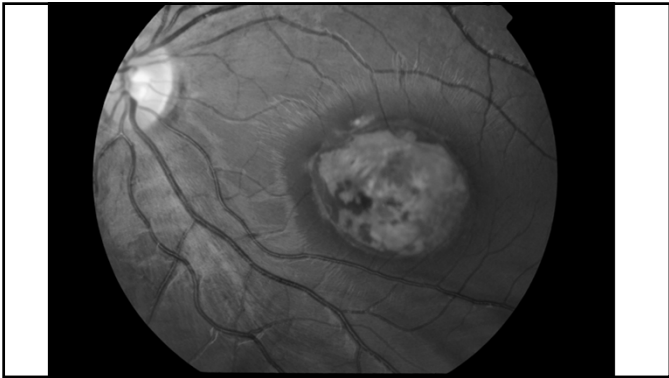


13 year old girl with previous history of toxo and scar at macula LE
Presented with floaters and decreased vision LE 6/24
Diagnosed as optic neuritis!!
Treated with prednisone
MRI (normal) and seen by paediatrician (normal)
Seen by ophthalmology 6 weeks later – vision count fingers

Congenital toxoplasma

- National neonatal screening programme for congenital toxoplasmosis in Denmark found 2.1 cases per 10,000 newborns
 - 9.6% born with retinal or macular lesions
 - 15.6% had changes by 3 years of age
- Approx 70% will show scars at 16 years
- Large atrophic scar, frequently at the macula





Indications for treatment

- A lesion within temporal arcade
- A lesion abutting the optic disc or threatening a large retinal blood vessel
- A lesion that has induced a large degree of haemorrhage
- A lesion that has induced inflammatory response to drop VA from 6/6 to 6/12 or drop 2 lines of vision
- Immunosuppressed patient

Treatment

- Many options available
- Routine toxo – cotrimoxazole 960mg po bd + oral pred 6 week taper
- Macular toxo – add intravitreal clindamycin
- Immunosuppressed – triple therapy
- Pregnant – usually spiramycin, discuss with ID if IgM positive, if IgG positive IgM negative intravitreal clindamycin and dex is best (if need to treat)

Intravitreal clindamycin

- Comparison of intravitreal clindamycin 1mg + 400µg dexamethasone with classic triple therapy
- 1-3 intravitreal injections given (mean 1.6)
- Retreatment up to every 2 weeks up to 3 injections based on response to treatment: sharpening of lesion border ± hyperpigmentation, resolution of vitreous inflammation

Randomized Trial of Intravitreal Clindamycin and Dexamethasone versus Pyrimethamine, Sulfadiazine, and Prednisolone in Treatment of Ocular Toxoplasmosis

Abstract To compare the efficacy of intravitreal injection of clindamycin and dexamethasone with classic triple therapy for ocular toxoplasmosis, a single masked clinical trial was conducted.

Design: A randomized controlled trial.

Setting: A tertiary care ophthalmology clinic.

Participants: A total of 48 patients with active ocular toxoplasmosis were assigned randomly to 2 treatment groups: an intravitreal injection of clindamycin 1 mg and dexamethasone 0.4 mg (CD group) and an intravitreal injection of pyrimethamine 80 mg, sulfadiazine 1600 mg, and prednisolone 4 mg (PDS group).

Interventions: The CD group received 1 to 3 injections of clindamycin and dexamethasone, and the PDS group received 1 to 3 injections of pyrimethamine, sulfadiazine, and prednisolone.

Measurements and Main Results: The mean number of injections in the CD group was 1.6. The mean time to resolution of the lesion was significantly shorter in the CD group than in the PDS group (P = 0.001). The mean time to resolution of the lesion was significantly shorter in the CD group than in the PDS group (P = 0.001). The mean time to resolution of the lesion was significantly shorter in the CD group than in the PDS group (P = 0.001).

Conclusions: Intravitreal injection of clindamycin and dexamethasone may be an acceptable alternative to the classic treatment in ocular toxoplasmosis. It may offer the patient more convenience, a safer systemic side effect profile, greater portability, and lower failure rate and toxicity.

Financial Disclosures: The authors have no proprietary or commercial interest in any materials discussed in this article. Ophthalmology 2011;120:1441-1447. © 2011 by the American Academy of Ophthalmology.

Prophylaxis

- Cotrimoxazole 960mg po every 3 days was shown to reduce the recurrence rate from 24% to 7% over 20/12 in non-HIV patients with 2 or more episodes of toxoplasma retinochoroiditis in the last 5 years (Silveira et al 2002)
- Consider if multiple recurrences
- Macular toxoplasmosis
- Congenital toxo for 1st year of life

Conclusions

- Toxoplasmosis is common – we will all see cases
- Can present atypically – beware elderly and immunosuppressed!
- Serology helpful if IgM positive (shows recent infection) or if negative (to rule out)
- Intraocular PCR may be needed
- OCT through lesion can be very helpful
- Intravitreal clindamycin useful adjunct for macular lesions and for pregnant/breast feeding
- Consider prophylaxis esp in macular lesions at 25% will have recurrence in next 2 years

