Toxoplasmosis

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Seroprevalence with age (USA)

- Rates vary with age and with country
- France approx. 70% seroprevalence
- UK approx. 40%
- Dunedin Study ~ 28%

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

Toxo panuveitis, cataract, no fundal view
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
- Vitriris 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

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 (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

Iatrogenic immunosuppression

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

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 IgG positive (shows recent infection) or if negative (to rule out)
- Intravascular 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 as 25% will have recurrence in next 2 years