Uveitis unplugged: sorting out infectious uveitis

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No financial or proprietary interest in any material discussed

Immunosuppression for IED

The fundamental principle for managing uveitis:

Is the disease:

infective

inflammatory

neoplastic

What is the worst, most acute threat to vision this could be?

Immunosuppression for IED

The fundamental principle for managing uveitis:

Is the disease:

infective

inflammatory

neoplastic

What is the worst, most acute threat to vision this could be?

usually infection!

Common Causes of Uveitis in Sydney 2015

Idiopathic 505 (50%)

- idiopathic 424
- Fuchs 26
- WDS 55

Inflammatory 358 (35%)

- HLA B27 188
  (+systemic B27) 46
- sarcoid 56
- Behcets 18

Infective 203 (20%)

- Herpetic 105
  - anterior 83
  - posterior 22
- TB 40
- Toxoplasmosis 38
- syphilis 10 (25)

Assessing the patient with uveitis

How do I sort this out???

- clinical assessment + carefully selected tests

- clinical assessment is the key investigation
- critical to take as comprehensive a history and review of systems as possible

plus

- thorough careful complete examination of each eye

Sorting out Uveitis: anterior uveitis signs

Anterior Uveitis Signs:

- comprehensive a history and systems review
- there are some unofficial “rules”

> *can’t diagnose anterior uveitis without a normal fundus on dilated exam*

- anterior uveitis: mostly non specific signs
- KPs, iris and pupil: useful clues

Sorting out Uveitis: posterior uveitis signs

Posterior Uveitis

- comprehensive a history and systems review critical
- **there are some unofficial "rules"**
- **pattern recognition key step**
  - → **narrows differential diagnosis**
- **posterior uveitis: many useful & relatively specific signs**

Sorting out Uveitis: posterior uveitis signs

Patterns of Posterior Uveitis

- acute non- specific panuveitis
- intermediate uveitis & pars planitis
- retinitis
- choroiditis
- chorioretinitis
- retinal vasculitis

my clinical approach

- signs of vasculitis
- signs of inflammation
- patterns of spots and scars

Sorting out Uveitis: posterior uveitis signs

Patterns of Posterior Uveitis

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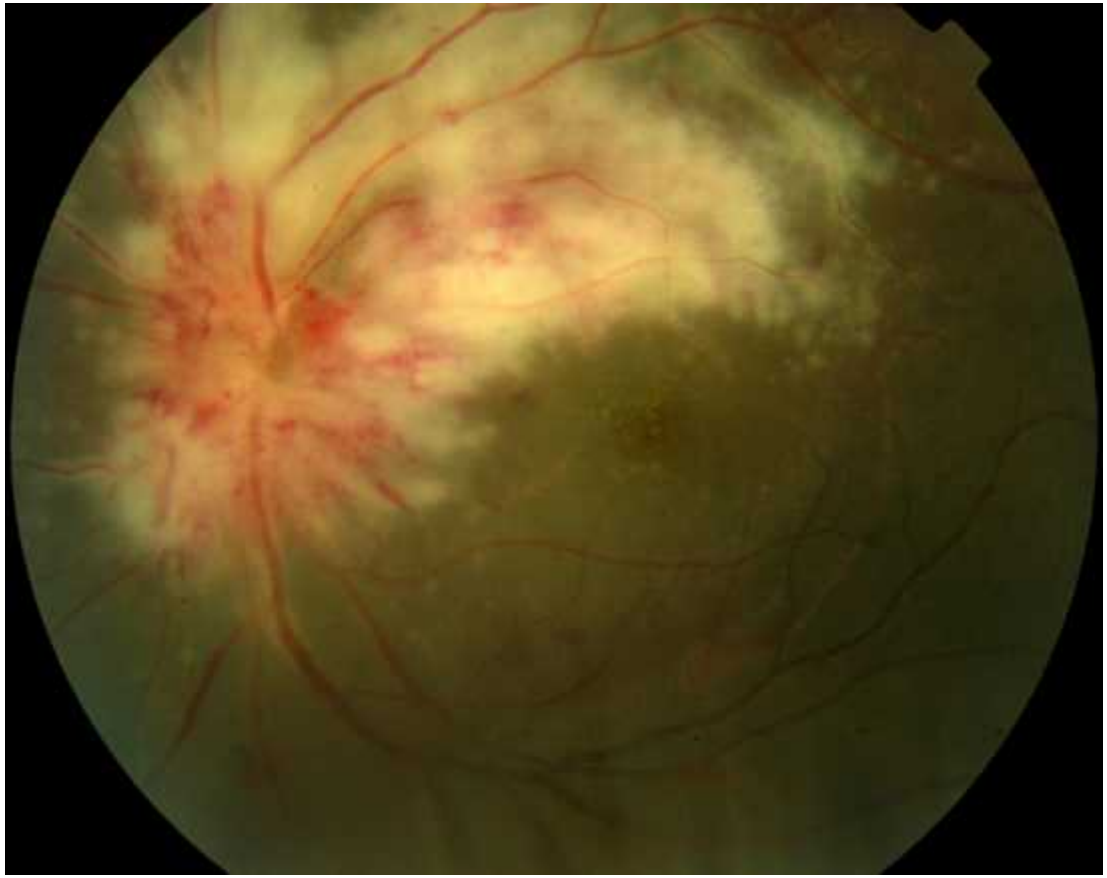
my clinical approach

- signs of vasculitis
- signs of inflammation
- patterns of spots and scars

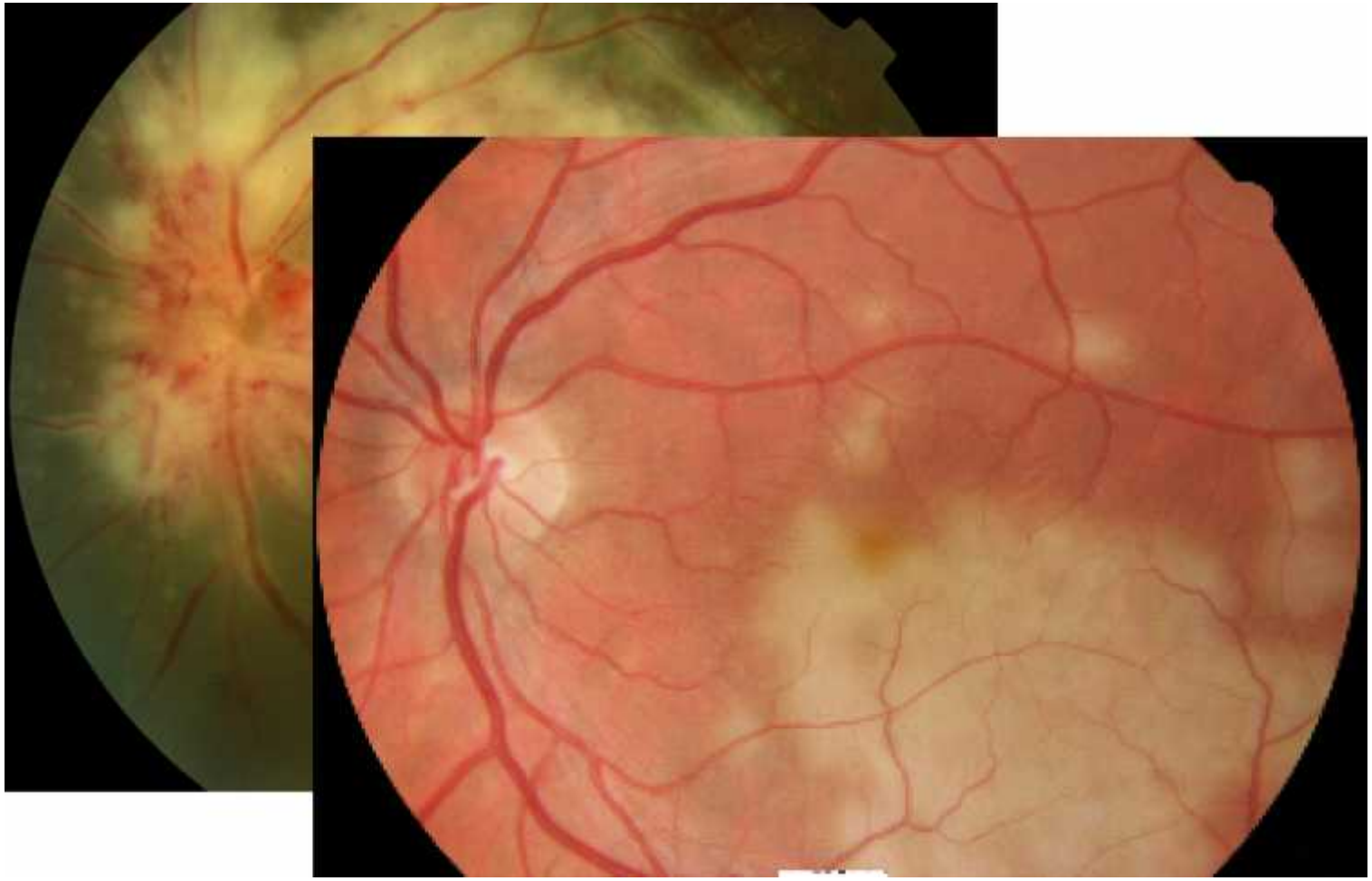
I want to focus on identifying the primary site of involvement

Assessing the patient with uveitis



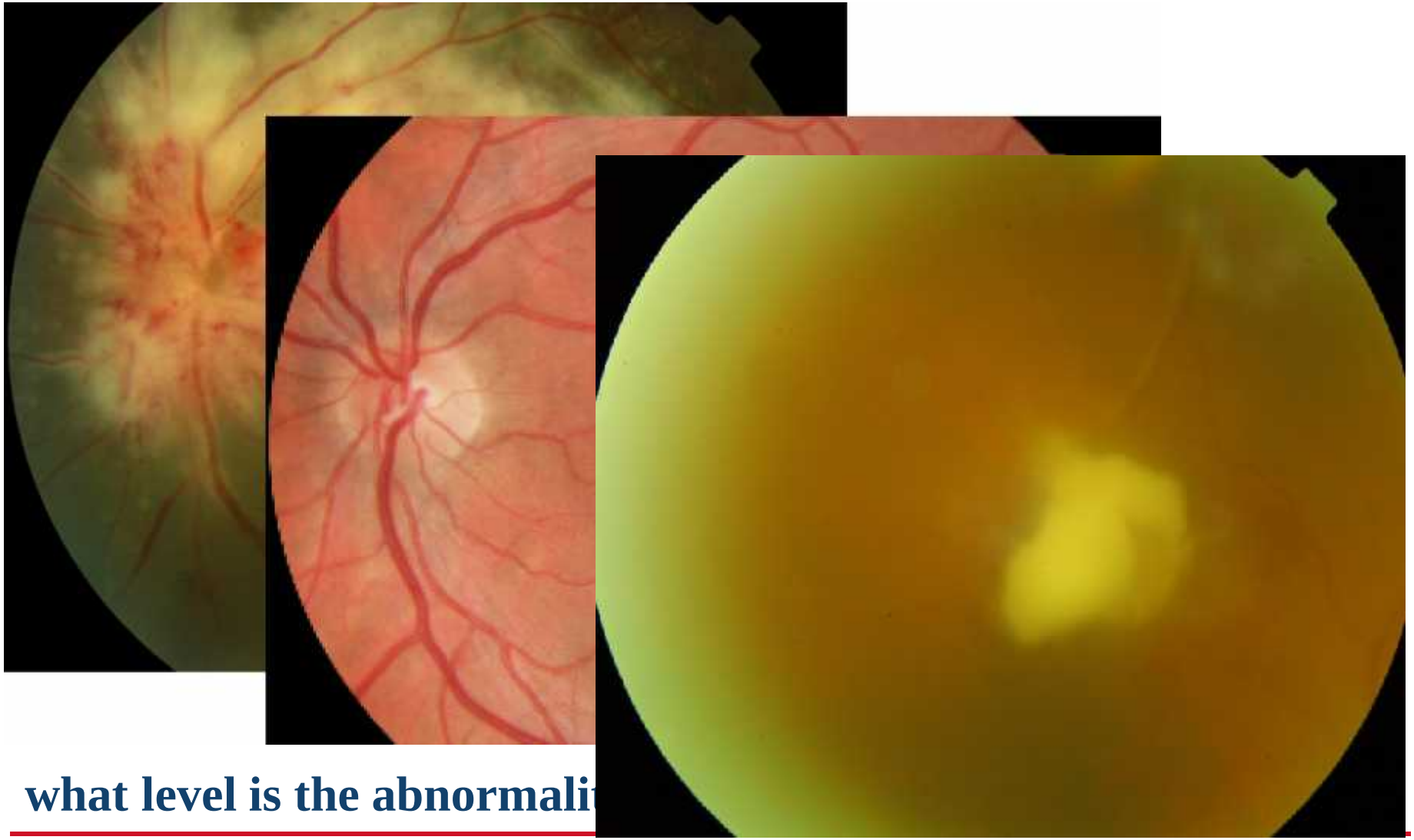
what level is the abnormality??? - retinal

Assessing the patient with uveitis



what level is the abnormality??? – subretinal/choroidal

Assessing the patient with uveitis



what level is the abnormali

Assessing the patient with uveitis

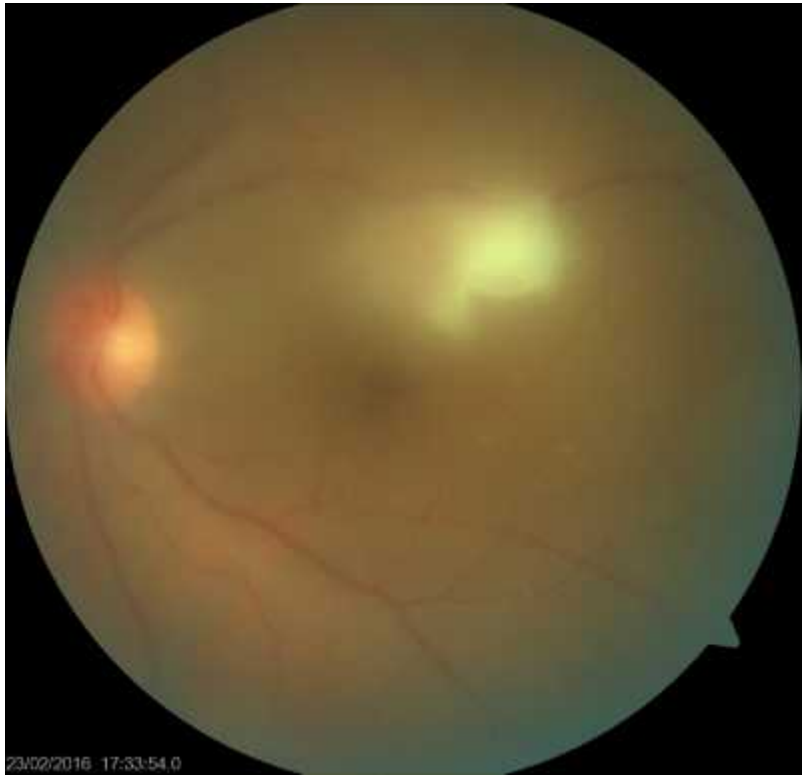
Infectious uveitis

Retina:

- herpetic retinitis
- toxoplasmosis
- syphilis

Choroid:

- bacterial endophthalmitis
- fungal endophthalmitis
- infective TB

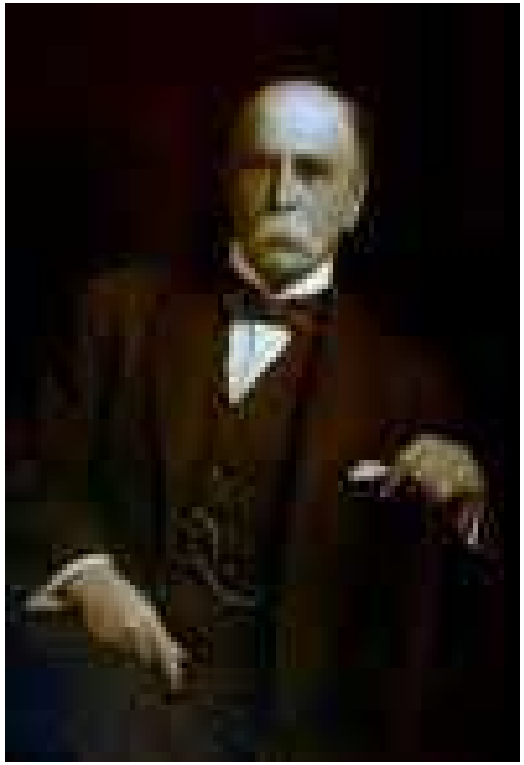


Syphilis

Syphilis

- complex sexually transmitted disease
- highly variable clinical course
- epidemic at present
- not uncommon co-infection with HIV

- protean ocular manifestations
- ocular involvement at any stage
- ocular manifestations up to 5%



"The physician who knows syphilis, knows medicine"
Sir William Osler

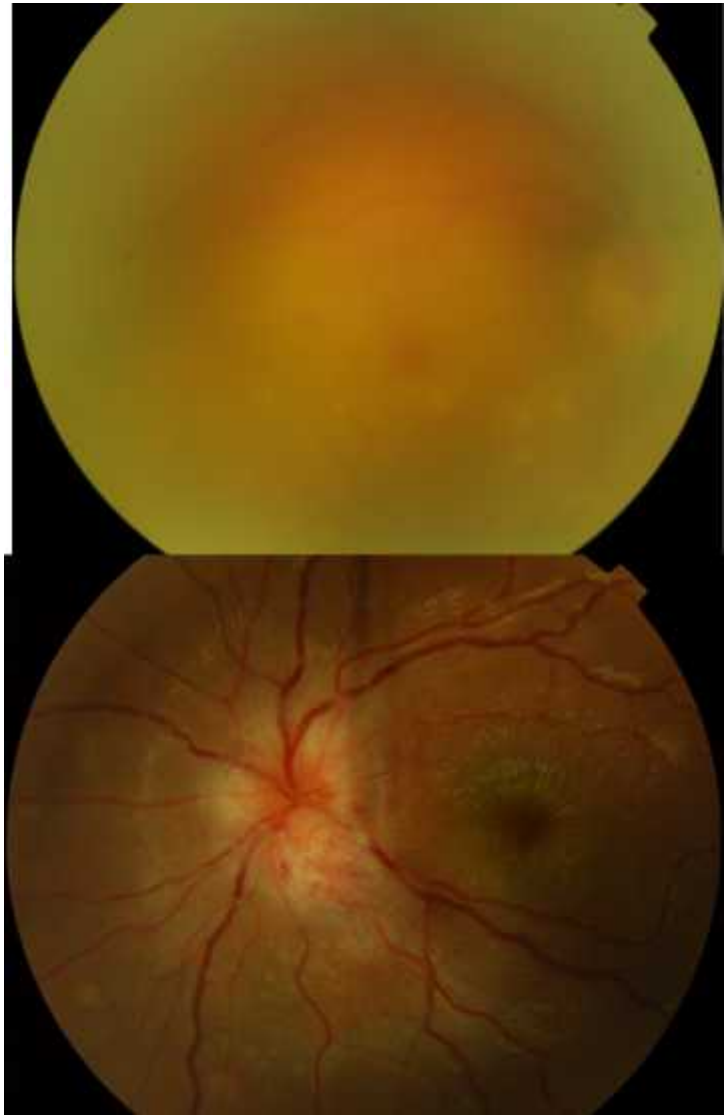
Syphilis

Optic Nerve:

- commonly involves optic nerve
- optic neuritis
- optic peri-neuritis
- posterior or pan uveitis

  plus

  - optic papillitis
  - neuroretinitis

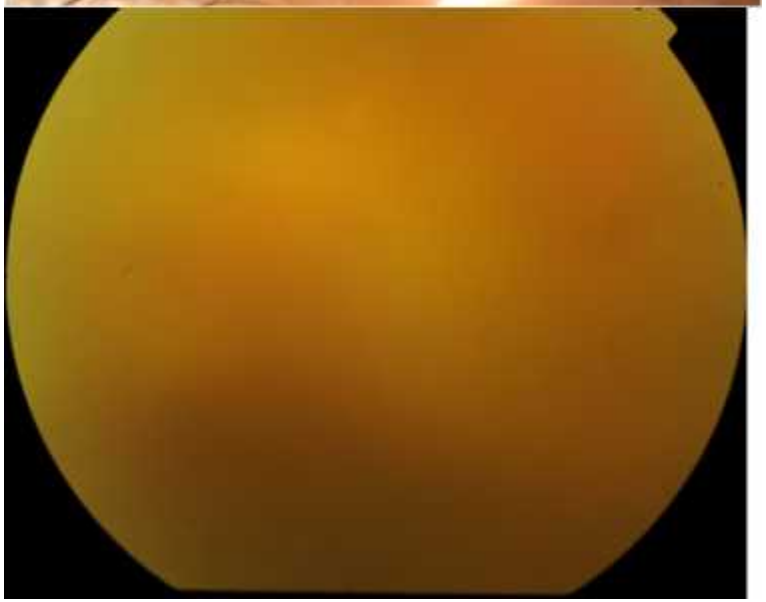


Syphilis

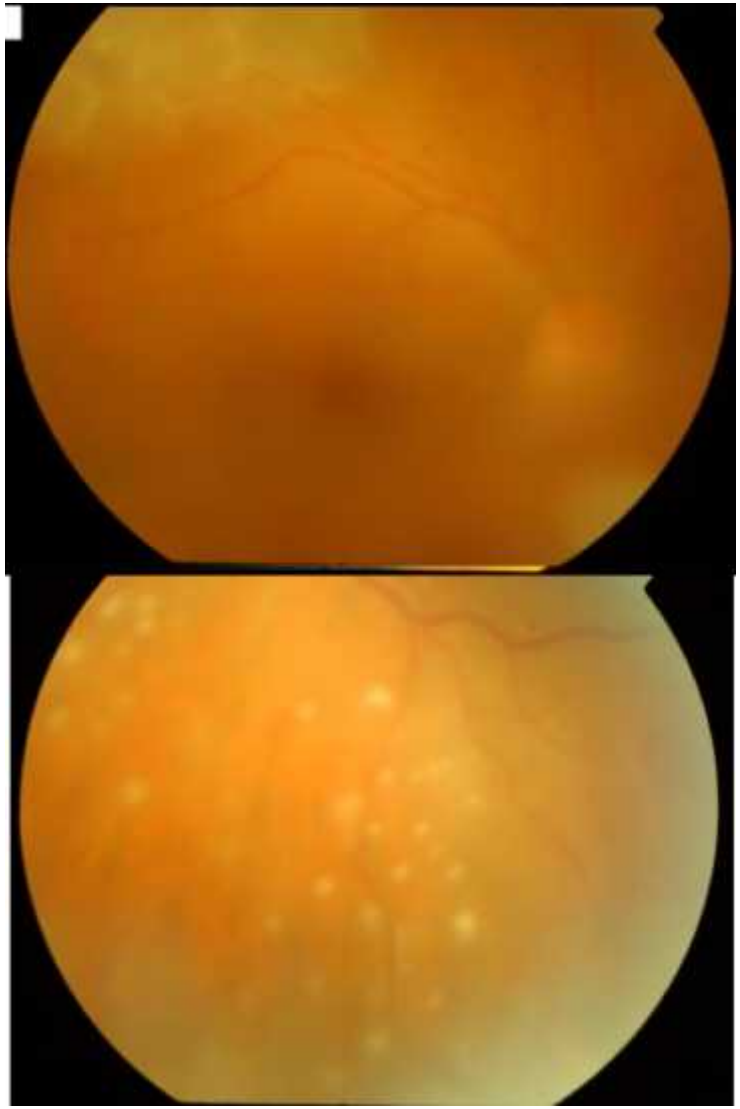
Acute Pan Uveitis

- common acute presentation
- rapid vision loss & “hot eye”
- AC cells
- vitreous cells & haze
- retinitis ± optic neuropathy

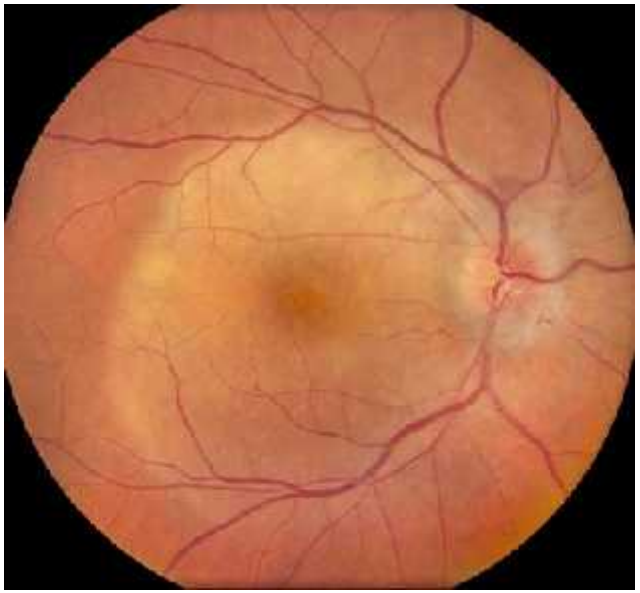
- history is critical – risk factors
- always consider syphilis in differential diagnosis



Syphilis



necrotising peripheral retinitis



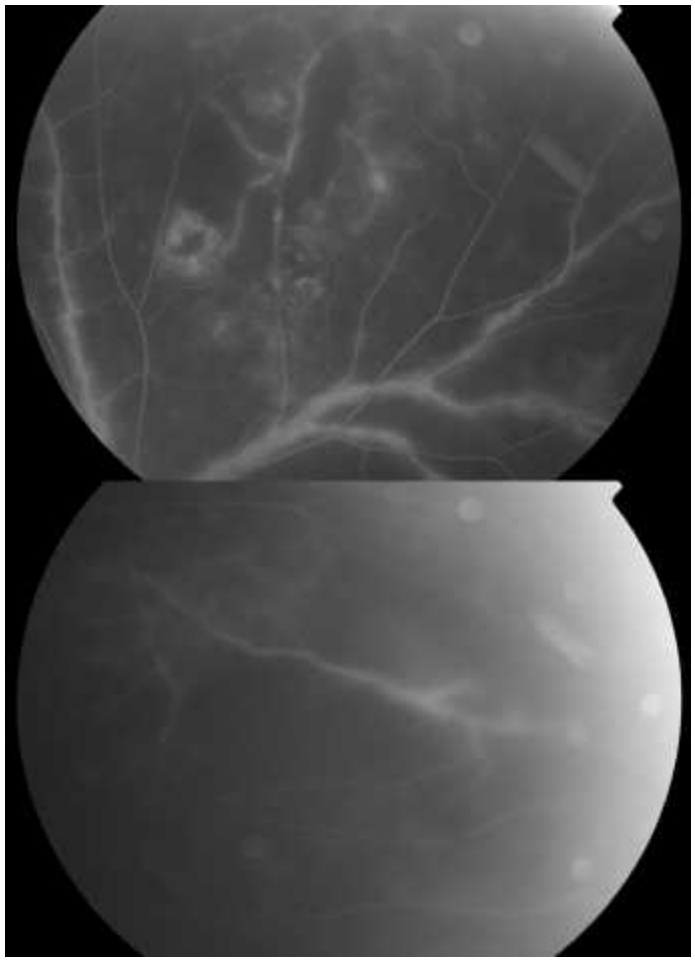
acute syphilitic posterior placoid chorioretinopathy
(courtesy West Coast Retina)

punctate inner retinitis

Syphilis

Syphilis & Retinal Vasculitis:

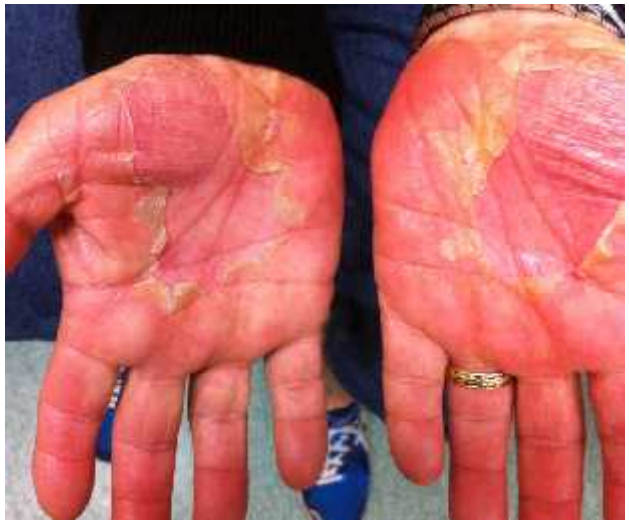
- important cause of RV ± retinitis
- posterior segment ocular features:
  - often mid peripheral
  - arteries & veins
  - capillary closure

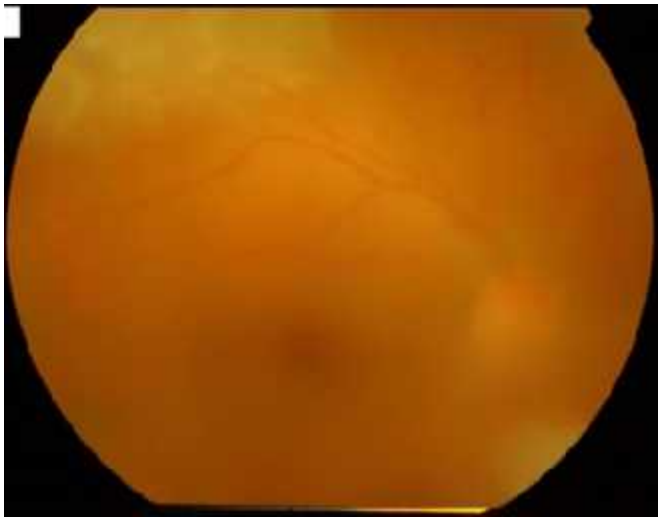


Syphilis

HIV and Syphilis:

- HIV → atypical, rapid clinical course
- may be presentation of HIV
- severe intraocular inflammation even with low CD4 counts
- common ocular features:
  - retinitis
  - severe panuveitis with dense vitritis
  - florid optic nerve involvement
- must treat as neurosyphilis
- may relapse despite adequate therapy





Herpetic Uveitis

Herpetic Uveitis

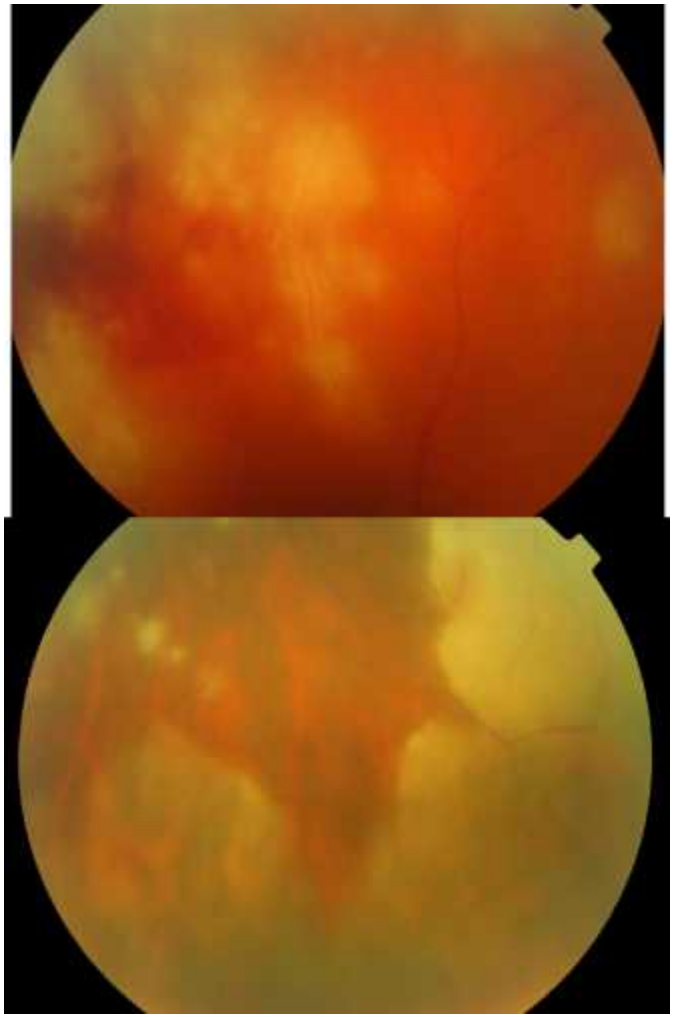
- common disorder
- approx 10% of uveitis
- range of herpes viruses
  - HSV I
  - HSV II
  - VZV
  - CMV

- anterior uveitis
  - acute
  - recurrent acute
  - chronic
  - Posner Schlossman syndrome
  - Fuchs cyclitis
- posterior uveitis
  - ARN
  - PORN
  - CMV

Herpetic Uveitis

Acute Retinal Necrosis

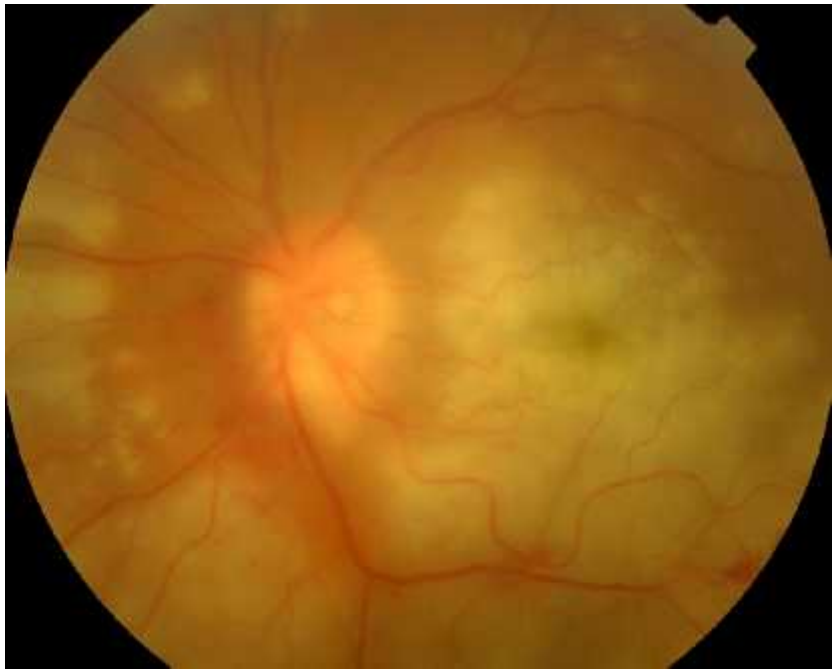
- normal or immunosuppressed
- sudden onset, rapid progress
- variable severity
- pan-uveitis
  - retinal vasculitis
  - retinitis
  - optic neuropathy
- high risk retinal detachment
- high risk 2nd eye involvement



Herpetic Uveitis

PORN

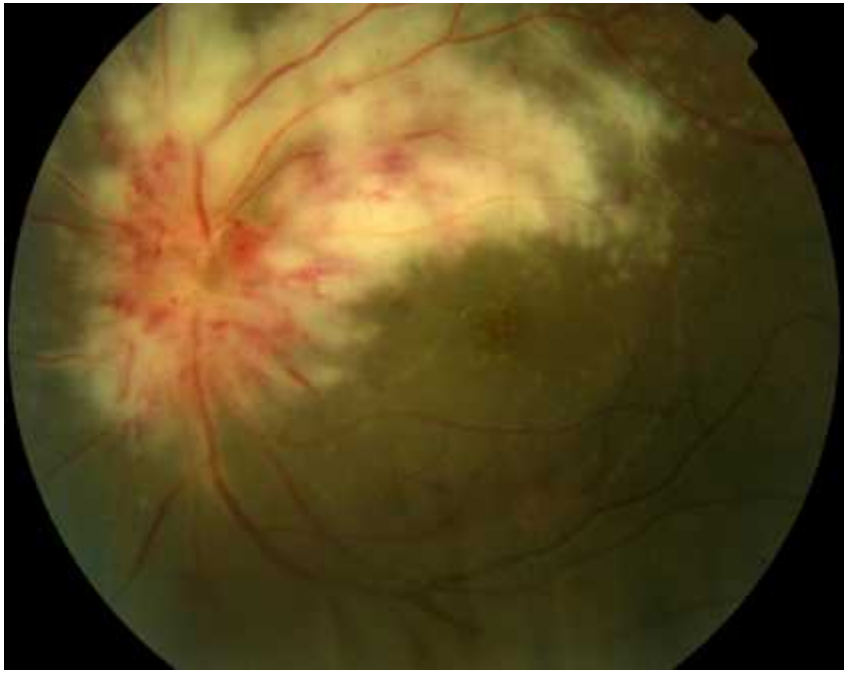
- very immunosuppressed
- hyper-acute ARN
- VZV retinal infection
- bilateral retinitis
  - outer retina
  - posterior pole
  - optic neuropathy
- retina rapidly destroyed
- retinal detachment



Herpetic Uveitis

CMV Retinitis

- immunosuppressed
- slowly progressive
- maybe asymptomatic
- retinitis
  - retinal vasculitis
  - haemorrhage
  - clear media
  - slow centripetal spread
- high risk retinal detachment
- high risk 2nd eye involvement



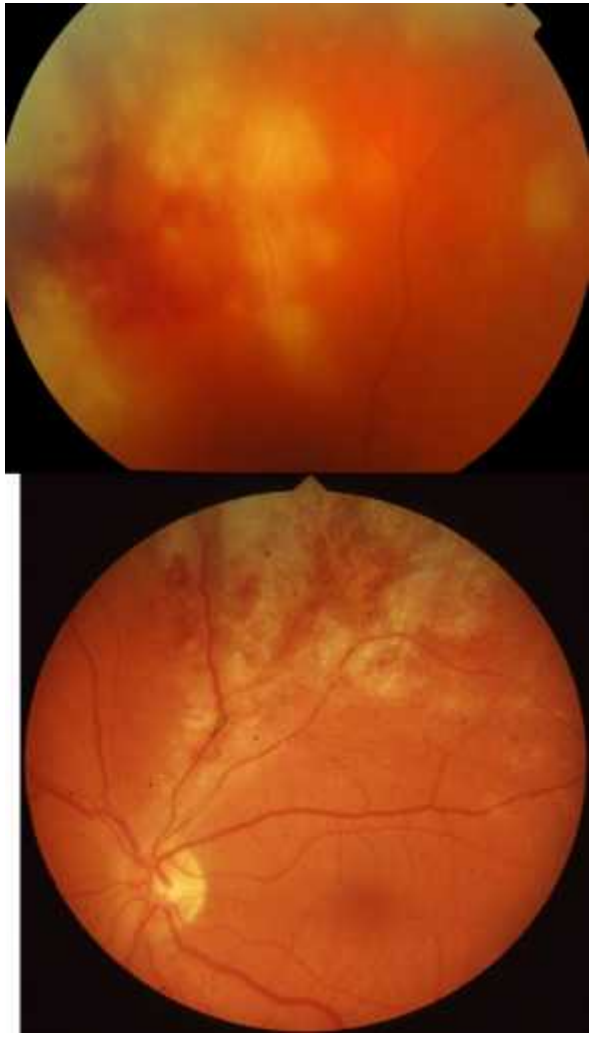
Herpetic Uveitis

Clinical Presentations

- **normal**
  - acute retinal necrosis (ARN)
- **immunocompromised**

  HSV &VZV
  - ARN, PORN
  - organ transplant
  - HIV infection (CD4: 0 – 200)

  CMV
  - profound immunocompromise
  - HIV infection (CD4: 0 – 100; mostly < 50)
  - organ transplant



Viral retinitis

Acute Retinal Necrosis

- normal or I/S patient
- sudden onset
- rapidly progressive severe loss of vision
- "hot" inflamed eye
- triad of signs – peripheral retinitis, vasculitis, optic neuropathy

CMV Retinopathy

- always I/S or HIV infected
- insidious onset or asymptomatic
- slowly progressive
- clear quiet media
- characteristic retinal signs – "pizza fundus"

NB. Confounding effects of immunosuppression & HAART

Ocular TB

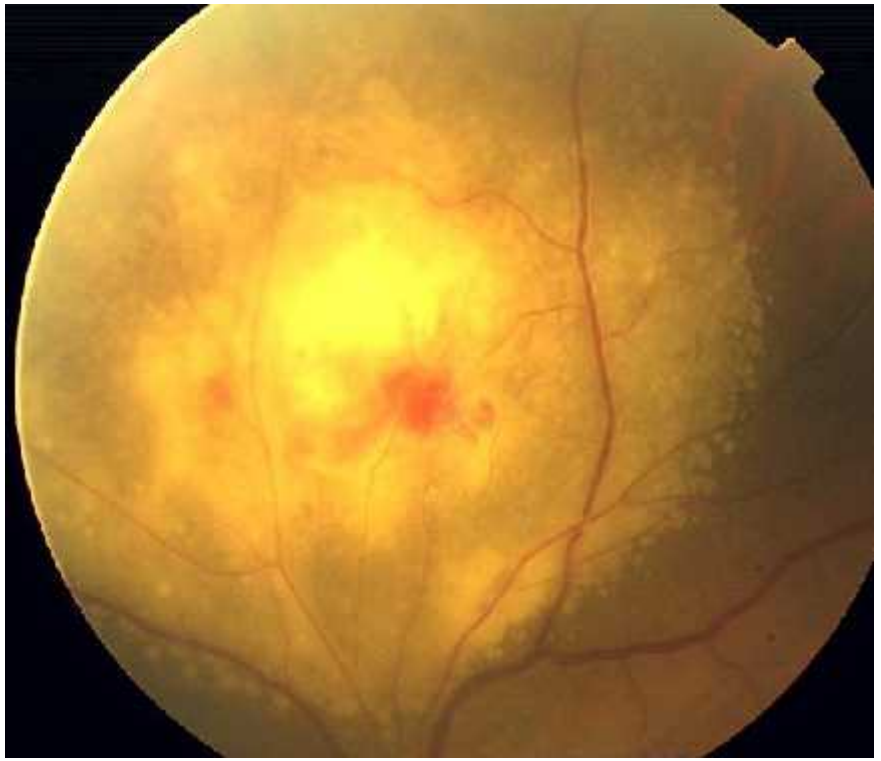
TB and the eye

- 1/3 of world's population has latent TB
- lifetime risk of 10% => active TB
- recent resurgence
  - HIV
  - migrants from high prevelance regions
- ocular TB is uncommon
- involve any ocular structure

Ocular TB

Infectious active Pulmonary TB and the eye

- ocular disease uncommon
- retinal vasculitis + vitritis
- choroidal nodule(s)
  - large
  - if >1, different sizes
  - florid vitritis & AC cells
- => miliary TB
- often CNS TB
- indication for TB therapy



Duane's Ophthalmology

Ocular TB

Latent TB and the eye

- ocular disease more common
- patient with IED with +ve Mantoux or IGRA and
  - clinically well + normal CXR
  - clinically well + signs old TBCXR but no h/o TB
- typically from endemic region
- pathophysiology unclear:
  - hypersensitivity response from TB elsewhere
  - latent TB in eye - RPE
- multiple possible clinical manifestations
- different disease patterns around the world

Ocular TB

Latent TB and the eye

2 common clinical scenarios:

1. “presumed” ocular TB

- **occlusive retinal vasculitis**
- **atypical serpiginous choroidopathy**
- **choroidal granuloma/multifocal choroiditis**
- **CAU**
- **scleritis**

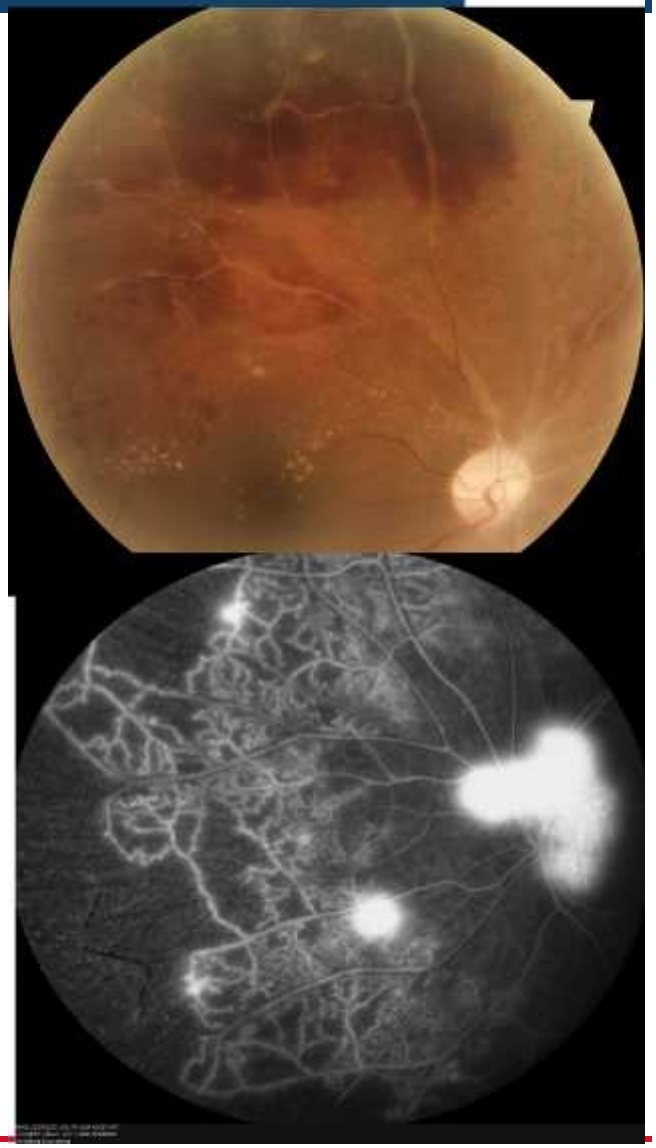
NB: disease pattern variable
Depends on where you are

2. patient with vision threatening uveitis requiring systemic therapy who also has latent TB

Ocular TB

Occlusive Retinal Vasculitis

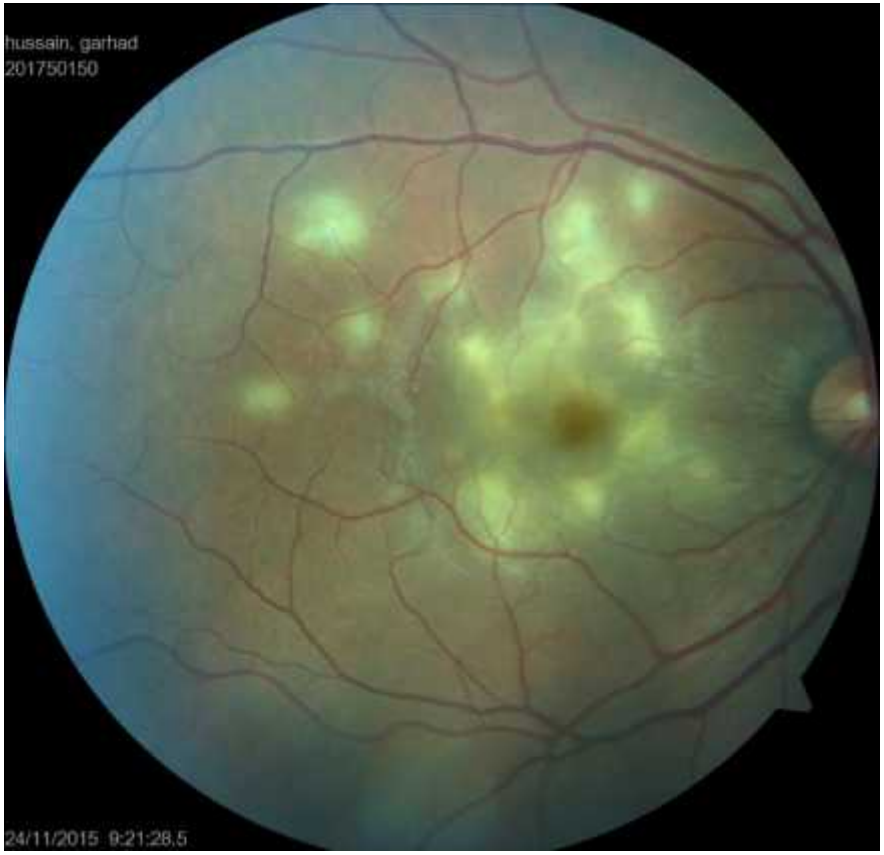
- variable retinitis
- widespread retinal ischaemia
- NVD, NVE ± NVI – vit bleed
- variable vitritis & AC cells
- quiet media => “Eale’s disease”
- treatment:
  - steroids + TB therapy ± IMT
  - ± specific ocular Rx: laser, avastin, TPPV



Ocular TB

Multifocal Choroiditis

- multifocal choroiditis
  - asymmetric
  - lesions different ages & sizes
  - vitritis & AC cells
- steroids + TB therapy ± IMT



Ocular TB

Atypical Serpiginous

- serpiginoid choroidal/RPE lesions
- possible atypical features
  - uni-ocular/asymmetric
  - centred around macula
  - vitritis
- steroids + TB therapy ± IMT

Ocular TB

TB therapy & eye disease

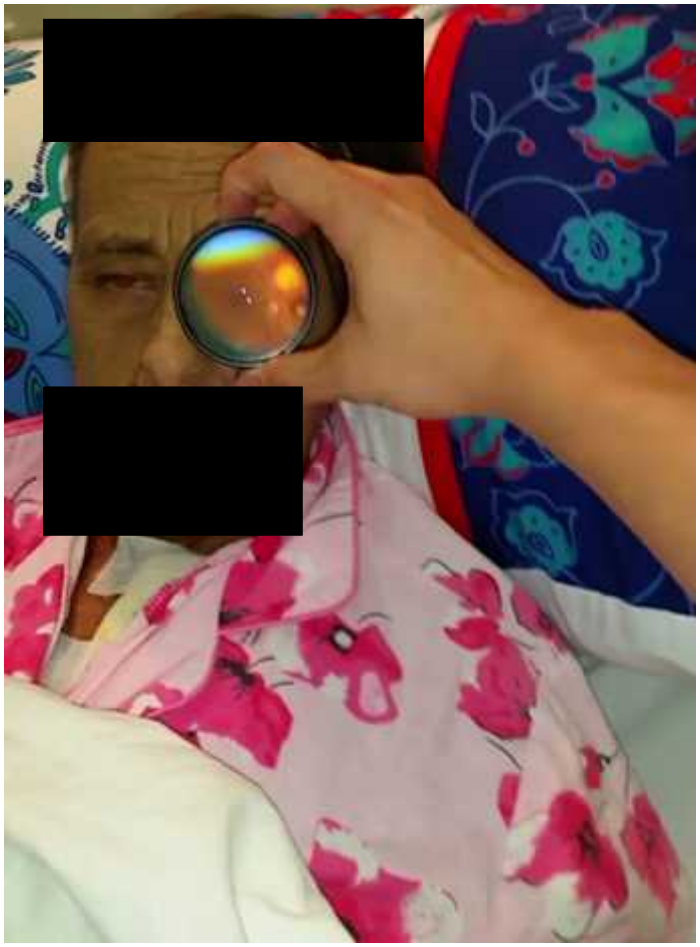
- TB Rx = WHO DOTS 4 then 2 drug course
- minimum 6 months; typically 9-12 month Rx
- consider risk of MDR TB
- consult TB/ID physicians

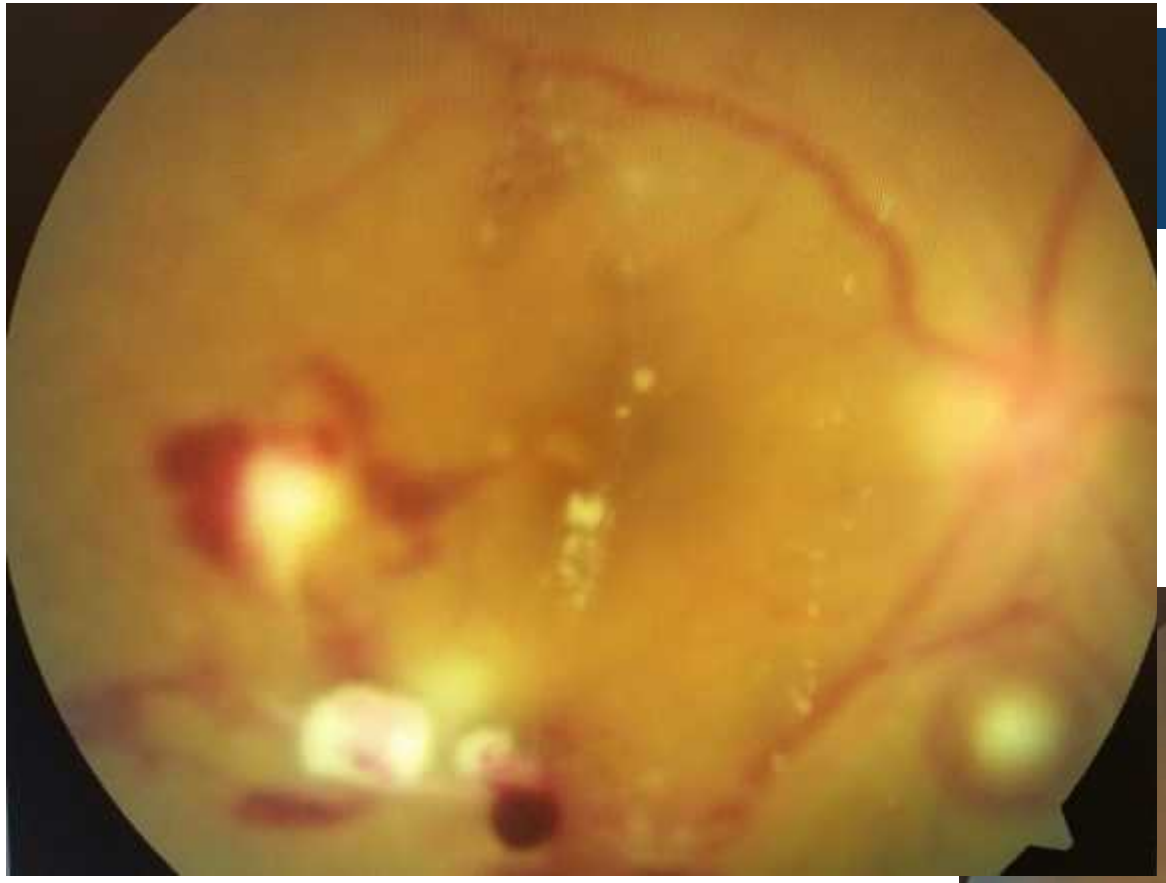
- consider local steroid therapy when possible
- if need systemic steroids ± IMT => TB therapy

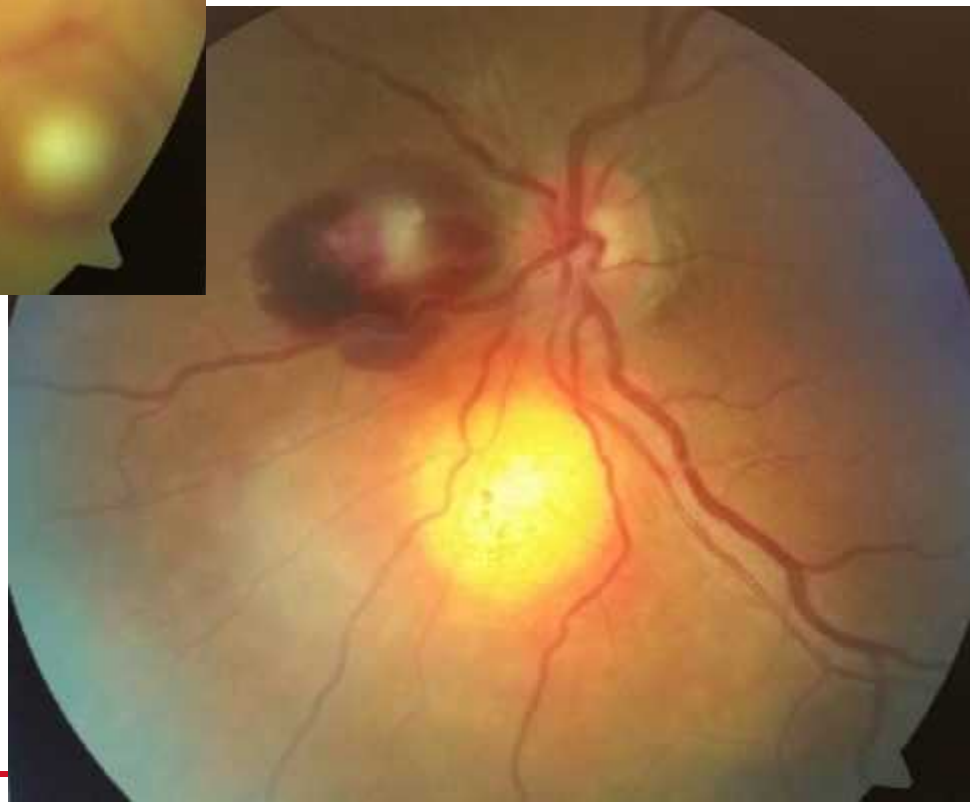
Uveitis Clinical Cases

Metastatic Endophthalmitis:

- need high index of suspicion
- unwell inpatient, ICU & unable to come to clinic
- source of sepsis – surgery, IV lines, ICU, sepsis elsewhere
- *always* consider in immunocompromised
- even if otherwise well & no obvious sepsis







…….convince team
to bring patient to clinic

The Friday Night Special

differential diagnosis:

severe uveitis with vision loss

- acute retinal necrosis – herpetic retinitis
- syphilis
- toxoplasmosis
- infective endophthalmitis – bacterial/fungal
- TB uveitis
- Behcet's disease

The Friday Night Special

Its all about the history and ocular exam

• acute retinal necrosis	typically no clues; otherwise well; may be immunosuppressed
• toxoplasmosis	otherwise well
• syphilis	usually no clues; at risk behaviour
• inf endophthalmitis	history systemic focus/sepsis; ocular surgery
• TB uveitis	from endemic region
• Behcets disease	history mouth & genital ulcers; often “silk road” ethnicity

Infectious Uveitis

Take Home messages:

- always consider infection as a cause of ocular inflammation
- uveitis may be presentation of HIV infection esp syphilis
- severe vision threatening uveitis common
- potent specific treatment for infective uveitis