Differential diagnosis of Posterior Uveitis

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Posterior uveitis may be the primary focus, but panuveitis & endophthalmitis are included here.
Posterior Uveitis

• All patients present with visual loss. How to differentiate?:
  – Acute, subacute or chronic?
  – Age, sex, geography?
  – Unilateral of bilateral?
  – Where is the primary focus?:
    • Choroiditis, chorioretinitis, retinitis, retinal vasculitis, panuveitis, endophthalmitis?
  – Is the patient also systemically ill?
Know your demography
Know your demography

A*2902

B*5101

Sarcoidosis

Behcet's disease

Syphilis

Onchocerciasis
The things that matter most:

• Some posterior uveitis is associated with infections that can kill or disable

• Some posterior uveitis can blind rapidly, especially if treated with steroid

• Most posterior uveitis that is non-infective is treated in similar pattern no matter what the specific diagnosis
Posterior Uveitis: Questions

- Is your patient well, or ill?
- If ill now, is this acute?
- If not ill now, was there an acute prodrome?
- Are there associated systemic symptoms?
  - Headache, focal neurology
  - Skin rash
  - URTI, history of recent antibiotics
Acute visual loss in an ill patient

• This is bacterial endogenous endophthalmitis until proven otherwise
• Temperature, ESR, CRP, blood cultures
• Systemic examination to localise infection
• Urine culture, echocardiography
• Other directed investigations
• Risk factors:
  – Immunodeficiency, immunosuppression, malignancy, chemotherapy, diabetes
Endogenous bacterial endophthalmitis

• The patient is usually unwell, but often not severely unwell
• If a primary infection locus is not obvious, keep on looking!
Suspected bacterial endophthalmitis

- Admit. Immediate blood cultures including anaerobes and fungi
  - Repeat x 3 even if systemic antibiotics commenced
- Rapid vitreous sampling for:
  - Gram microscopy & culture (including fungi)
  - Panbacterial/panfungal PCR if available
- Combined intravitreal antibiotic injection
Early aggressive treatment can be life- and sight-saving

Presentation: HM/CF R+L, paraplegic, moribund

Diagnosis: Bilateral MRSA endophthalmitis with multiple foci of discitis + paraspinal abscess

Final: 6/6 6/7.5, fully mobile & well
Acute unilateral visual loss in an well patient with panuveitis

- This is necrotising viral retinitis until shown otherwise

- Dilate the pupil as well as possible in any patient presenting with severe “anterior” uveitis, with mydricaine if necessary, and examine with indirect
Suspected necrotising viral retinitis

- If in doubt, tap aqueous for herpesvirus PCR and inject foscarin or ganciclovir

- Intravenous aciclovir 10mg/kg/day

- Investigate immune status

- Serology for herpesviruses, syphilis
Toxoplasma retinitis

- The commonest known infective posterior uveitis
- Variable anterior uveitis, but may be severe, with posterior synechiae
- KPs often mutton-fat
- IOP often raised
- Most cases are recurrent, with previous retinal scar
Toxoplasma retinitis

- Paradigm – Old scar (in either eye) with new focus of retinitis, variable but often severe uveitis
Toxoplasma retinitis

• Retinal vasculitis may be widespread
• Juxtapapillary lesions are quite common
Toxoplasma retinitis

- Macular foci often cause macular cyst “signet ring”
- Neuroretinitis sometimes seen
- Punctate outer retinal toxopasmosis rare
Toxoplasma retinitis

- Acquired disease – no scar, often macular
- Multifocal/recurrent ++ - consider HIV
Toxoplasma retinitis

- Even if you think it is too atypical for toxoplasmosis, that is still the most likely diagnosis!
If you are genuinely not sure of diagnosis, but acute infection likely:

- Ensure blood, urine and vitreous tapped before antibiotic treatment
- Blood: Culture x3, PCR & serology for herpesviruses, VDRL, ESR, CRP, organ function
- Urine: Microscopy, C&S, protein
- Vitreous tap: bacterial & fungal culture, PCR for herpesviruses, toxoplasma, fungi
- Intravitreal injection: Foscarnet + antibiotics
- Intravenous aciclovir + local antibiotic protocol
Infectious posterior uveitis of other types

• Tuberculosis is on the increase – consider

• Syphilis is not rare, only uncommon

• Consider fungal infection in drug users and others at risk of intravenous access

• Consider anything in an immunodeficient or immunosuppressed patient
Tuberculosis
Syphilis
It is mostly pattern recognition

• The pattern of the eye(s)
  – Choroid, choriocapillaris or neuro-retina?
  – Unifocal or multifocal?
  – Negligible inflammation to severe panuveitis
  – Symmetrical or unilateral/asymmetrical?
  – Retinal blood vessels involved?

• The pattern of the patient
  – Age, sex, race, geography, medical history
  – Current or previous systemic features
Is there retinal vasculitis? If so, which vessels, what distribution?
Is there vasculitis with focal necrotising retinitis?
White dot syndromes

- Is it unilateral (like Toxoplasma) or bilateral (like VKH)?
- Is it rapid (like MEWDS) or slow (like birdshot)?
- Is it severe (like sympathetic) or mild?
- Is it causing choroidal scarring (like PIC) or not (like MEWDS)?
- Is it macular (like RPE-itis) or widespread (like sarcoidosis)?
Sympathetic uveitis and VKH

- Very similar pathogenesis
- Paradigms differ substantially:
  - Sympathetic (any age, any race)
    - Acute/subacute, granulomatous panuveitis
    - Mild to severe chorioretinitis
  - VKH (Asians)
    - Harada: multifocal serous RD over choroiditis
    - Integument/auditory complications are later
    - Chronic anterior uveitis/glaucoma follows
Sarcoidosis

- Primary focus may or may not be posterior:
  - Anterior uveitis may be granulomatous or non-granulomatous
  - Great majority are bilateral
  - Patchy retinal periphlebitis (usually non-occlusive)
  - Multifocal choroiditis (especially inferior)
  - Disc involvement
  - Intermediate-type uveitis
Acute Posterior Multifocal Placoid Pigment Epitheliopathy

- Uncommon but not rare
- Young adults, often post-viral symptoms
- Usually bilateral and simultaneous
- Usually uniphasic
- May be consecutive or recurrent
- Associated – erythema nodosum, headache, meningism, cerebral vasculitis
Serpiginous Choroidopathy

- Rare
- Peripapillary/macular choroid/outer retinal necrosis
- Intermittent edge activation – stepwise progression – central vision loss
Atypical Placoid-like or Serpiginous-like Choroidopathy

• Common features:
  – Abrupt onset, at least one eye central loss
  – Asymmetry with irregular RPE/choriocapillaris lesions
  – More widespread than posterior pole
  – Progression by contiguous expansion
  – Poor response to steroids – new lesions forming after weeks
Birdshot Retinochoroidopathy

- Insidious onset, often late presentation
- Bilateral, symmetrical
- Mild panuveitis, subtle scattered lesions
- FFA and ICG both show greater problems
- Often progressive and blinding
- Needs oral immunosuppression
Punctate Inner Choroidopathy (Multifocal Choroiditis with Panuveitis)

- Uncommon, usually bilateral, asymmetrical, mainly in myopic women
- Peripheral/peri-papillary lesions asymptomatic
- Symptoms from:
  - acute disease with fresh macular lesions
  - Macular SNVM
- Deep, atrophich/pigmented scars
Multiple Evanescent White Dot Syndrome

- Rare, unilateral in myopic women
- Severe loss of VA with photopsiae, RAPD
- Few subtle small creamy lesions, no substance, no scar
- Dark, slightly granular macula
- Sometimes associated BBSS, AZOOR
- Usually resolves after a few months
- Treatment usually unnecessary
Posterior Uveitis Diagnosis: In Conclusion

• Do not miss the occasional true emergency (bacterial infection)
• Do not misdiagnose viral retinitis (so that it is treated with oral steroids)
• Toxoplasmosis is the commonest infection
• Sarcoidosis is the commonest non-infective type
• Consider syphilis and tuberculosis
• If not the above, pattern recognition, aided by imaging