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Uveitis For ST1s

Philip I. Murray
Institute of Inflammation and Ageing
University of Birmingham
Birmingham and Midland Eye Centre
Sandwell and West Birmingham Hospitals NHS Trust

Overview

- What is uveitis?
- Symptoms and signs of uveitis
- Causes/types of anterior uveitis
- Other types of uveitis
  - Intermediate, Pan, Posterior
- Complications of uveitis
  - Cataract, glaucoma, cystoid macular oedema
- Management of uveitis in the A&E setting
  - Examination
  - Investigation
  - Treatment

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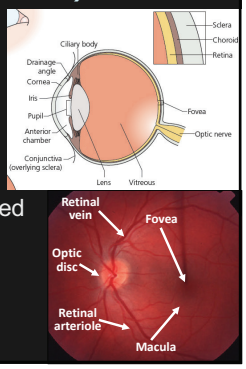
What is Uveitis (Intraocular Inflammation)?

- Inflammation of the uveal tract
  - Iris
  - Ciliary body
  - Choroid
- Adjacent structures also involved
  - Vitreous
  - Retina
  - Optic nerve



Uveitis - intraocular inflammation

- Group of potentially blinding diseases
- May affect the front or back of eye(s) or both
- Most patients are between 20-50 yrs (children also get it) – will have important socio-economic consequences
- Total population prevalence varies geographically but 5th commonest cause of visual loss in the developed world
- Many cases are "idiopathic" but some are associated with a number of systemic diseases and infections

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Why do they get it?

- In the majority of patients we don't know but suspect an autoimmune/autoinflammatory aetiology
- May have an underlying systemic disease
  - Ankylosing spondylitis (HLA-B27 +ve)
  - Sarcoidosis
  - Multiple sclerosis
  - Behçet's disease
- Some are due to infections
  - Toxoplasma
  - Herpesviruses – HSV, VZV, CMV
  - TB
  - Syphilis

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Classification of uveitis – anatomical

Table 2: Anatomical classification of uveitis.
(Adapted from Bloch-Michel and SUN references).

Type	Primary site of inflammation
Anterior uveitis	Anterior chamber
Intermediate uveitis	Vitreous
Posterior uveitis	Retina or choroid
Panuveitis	Anterior chamber, vitreous, & retina or choroid

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Classification of uveitis – clinical

Table 3: Proposed IUSG clinical classification of uveitis.

Infectious	Bacterial Viral Fungal Parasitic Others
Non-infectious	Known systemic associations No known systemic associations
Masquerade	Neoplastic Non-neoplastic

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Symptoms
(patients may have some but not always all of these)

- Anterior (some patients have a white, painless eye)
  - Pain
  - Redness
  - Photophobia
  - Blurred vision
- Posterior
  - Floaters
  - Reduced vision

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Signs
(patients may have some but not always all of them)

- Redness – circumcorneal
- Cornea – keratic precipitates
  - Size, Distribution, Fresh/old
- Anterior Chamber
  - Flare (including fibrin)
  - Cells
  - Hypopyon
- Iris
  - Posterior synechiae – fresh/old
  - Nodules – pupil margin/stroma
  - Atrophy

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- Lens – cataract
- Vitreous
  - Haze
  - Cells – fresh/old
  - Snowballs
- Optic disc – swelling
- Retina
  - Cystoid macular oedema
  - Epiretinal membrane
  - Focal retinal/choroidal lesions/"white dots"
  - Retinal venous sheathing (retinal vasculitis)

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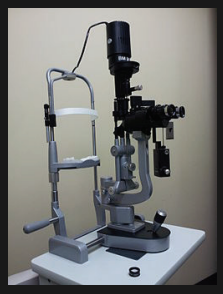
Slit-lamp microscope



You cannot diagnose uveitis without using the slit-lamp

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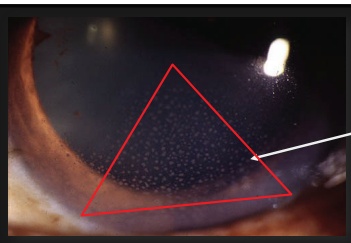
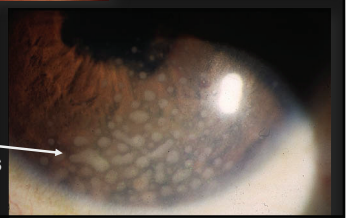


Fine KPs (inferior Arlt's triangle)



'Mutton-Fat' (granulomatous) KPs

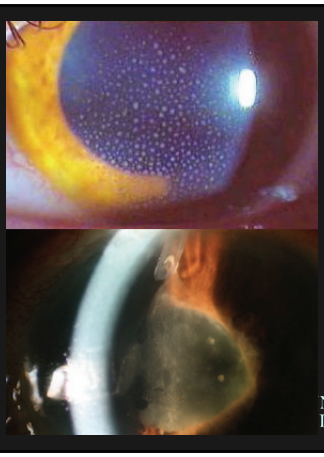


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TABLE 3. The SUN* Working Group Grading Scheme for Anterior Chamber Cells

Grade	Cells in Field†
0	<1
0.5+	1–5
1+	6–15
2+	16–25
3+	26–50
4+	>50

*SUN = Standardization of uveitis nomenclature.
†Field size is a 1 mm by 1 mm slit beam.

TABLE 4. The SUN* Working Group Grading Scheme for Anterior Chamber Flare

Grade	Description
0	None
1+	Faint
2+	Moderate (iris and lens details clear)
3+	Marked (iris and lens details hazy)
4+	Intense (fibrin or plastic aqueous)

Adapted from reference 12.
*SUN = Standardization of uveitis nomenclature.

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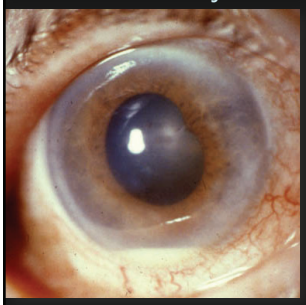
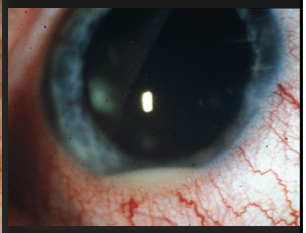
Hypopyon
(usually occurs in HLA-B27-associated AAU and Behçet's Disease)





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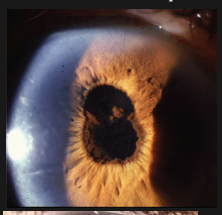
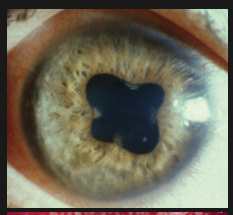
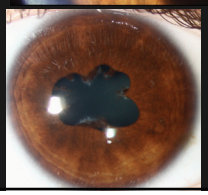
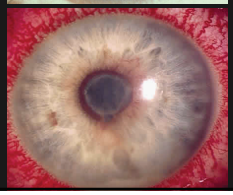
Posterior synechiae









Causes/types of anterior uveitis

- Idiopathic
- Related to HLA-B27 (50% of AAU cases)
  - Ankylosing spondylitis
  - Inflammatory bowel disease
  - Psoriasis
- Juvenile Idiopathic Arthritis-associated uveitis
- Fuchs' heterochromic cyclitis
- Sarcoidosis
- Infectious
  - Herpes viruses: HSV, VZV, (CMV)

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Clinical Features	HLA-B27 +ve Anterior Uveitis	HLA-B27 –ve Anterior Uveitis
Mean age at onset (yrs)	33	44
Gender (M:F)	2:1	1:1
Eye involvement	Unilateral 48-59% Unilateral alternating 29-36%	Bilateral 21-64%
Pattern of uveitis	Acute in 80-87%	Chronic in 43-61%
Recurrence	Frequent	Uncommon
Keratic precipitates	Mutton fat in 0-3%	Mutton fat in 17-46%
Fibrin in AC	25-56%	0-10%
Hypopyon	12-15%	0-2%
Posterior synechiae	40%	19%
Cystoid macular oedema	12%	1%
Family history	Yes	No
Associated systemic disease	48-84%	1-13%

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Other types of uveitis: Intermediate/Pan/Posterior uveitis

- Infectious
  - Parasitic: Toxoplasmosis
  - Bacterial: Tuberculosis, Syphilis
  - Herpes viruses e.g. HSV, VZV, CMV
  - Patients who are immunosuppressed e.g. AIDS, post-transplant
- Non-infectious
  - Isolated
  - Part of a systemic disease e.g. Sarcoidosis, Multiple Sclerosis, Behçet's Disease
  - Vogt-Koyanagi-Harada syndrome
  - Birdshot chorioretinopathy
  - Primary B-cell non-Hodgkin lymphoma

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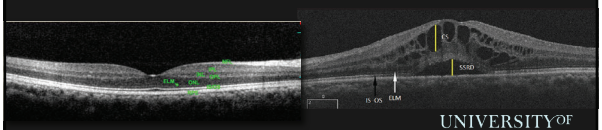
Complications of uveitis

- Cataract
- Raised IOP/secondary glaucoma
- Cystoid macular oedema (CMO)



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Medical therapy of uveitis

- Corticosteroids
  - Topical (subconjunctival)
  - Periocular
  - Intravitreal
  - Oral
  - Intravenous
- Immunosuppressant
  - Mycophenolate, Methotrexate, Azathioprine, Tacrolimus, Ciclosporin
- Biologic
  - Anti-TNF

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Acute Anterior Uveitis: New Patient Guidelines

- Take and document relevant history, e.g. presentation, ophthalmic history, general health, underlying systemic disease
- Document cellular activity (SUN grading) and PS formation
- Unilateral or bilateral: dilate **BOTH** pupils and examine **BOTH** fundi
- Break any fresh posterior synechiae with dilating drops/heat/subconj. mydricaine
- Potent topical corticosteroid (g. prednisolone acetate 1% or g. dexamethasone 0.1%) as per treatment protocol

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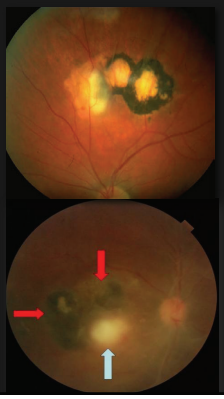
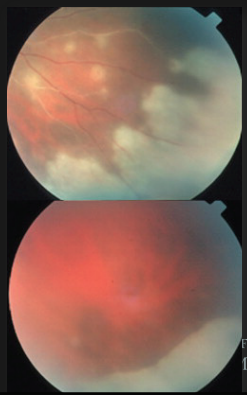
Toxoplasmosis **Acute Retinal Necrosis**





Posterior uveitis

- Any new patient presenting with posterior uveitis
  - Panuveitis
  - Intermediate uveitis
  - Posterior uveitis

You MUST exclude an infection

- In patients who are immunosuppressed it is due to an infection until proved otherwise

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Investigations to be Requested for Uveitis Patients in A&E

NEW patients (unless they are already known to have a systemic disease that is associated with uveitis, e.g. sarcoidosis) with:

- Panuveitis
- Posterior Uveitis
- Intermediate Uveitis
- Bilateral Anterior Uveitis
- Investigations are required both for determining aetiology and for baseline prior to systemic corticosteroid therapy

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Baseline Investigations

- Full blood count
- Erythrocyte sedimentation rate
- C-reactive protein
- Urea and electrolytes
- Liver function tests
- Angiotensin converting enzyme
- Syphilis serology
- Plain chest x-ray
- BP, urinalysis, BM, (temp)
- Other investigations **only** when it is clinically indicated

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Other Investigations

Imaging

- OCT – **only** where CMO is suspected from history and examination, e.g. typical symptoms, PH of CMO, reduction of vision of 2 or more Snellen lines, vision worse with a pinhole
- B-scan ultrasound – **only** if it is required to make or exclude a diagnosis, e.g. posterior scleritis, RD

AC tap

- e.g. in cases of suspected ARN

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The SUN Working Group grading scheme for AC cells

0	<1
0.5+	1-5
1+	6-15
2+	16-25
3+	26-50
4+	>50

***1 mm by 1 mm slit beam**

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Treatment protocol for "simple" anterior uveitis in A&E

SUN Grade: 0.5 + AC cells

G. Prednisolone acetate 1%	Duration
Hourly	2 days
6 x / day	5 days
4 x / day	1 week
3 x / day	1 week
2 x / day	1 week
1 x / day	1 week

Instruct the patient to shake the bottle before use.
G. Dexamethasone 0.1% can be as an alternative.
All patients should also receive G. Cyclopentolate 1% (or G. Atropine 1% if severe) twice daily for 2-4 weeks.
Oc. Betamethasone 0.1% nocte (if available) for severe cases.

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Treatment protocol for "simple" anterior uveitis in A&E

SUN Grade: ≥ 1+ AC cells

G. Prednisolone acetate 1%	Duration
Hourly	5 days
2 Hourly	1 week
6 x / day	1 week
4 x / day	1 week
3 x / day	1 week
2 x / day	1 week
1 x / day	1 week

Instruct the patient to shake the bottle before use.
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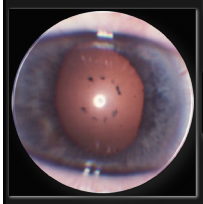
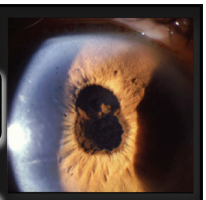
Failure to break PS

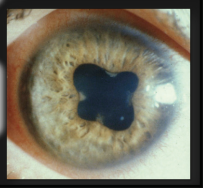


Breakable



Broken

Unbreakable



Management Guidelines: recurrent AAU

- Break any fresh posterior synechiae with dilating drops/heat/sc mydricaine
- Potent topical corticosteroid g. prednisolone acetate 1% (or g. dexamethasone 0.1%) as per treatment protocol
- Dilating drops g. cyclopentolate 1% (or g. atropine 1% if severe) as per treatment protocol

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Unilateral AAU with IOP ≥ 35mmHg Management Guidelines

- Always think that a herpes virus could be a possible cause
- Treat inflammation and IOP appropriately - topical (+/- oral) antihypertensives (PG drops are not contraindicated)
- May need frequent A&E/Primary care review, e.g. in 3/7 or sooner to ensure IOP is controlled
- Do **NOT** stop the topical corticosteroid but can taper to BD if appropriate
- Seek assistance

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Pan/Posterior/Intermediate Uveitis New Patient Management Guidelines

- **MUST EXCLUDE AN INFECTIVE PROCESS**
- Dilate **BOTH** pupils and check **BOTH** fundi
- Treat any anterior uveitis with potent topical corticosteroid and dilating drops
- Sight threatening disease: defined as…
  - Significant vitritis/ CMO / retinal vasculitis / optic nerve involvement
- Seek assistance

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