In the chat, answer:

1. What year you are in
2. Favourite colour
3. Make a choice: never hear music again or lose the ability to read?

PIPs, DIPs and Optic Discs: Rheumatology + Ophthalmology Histories

Aribah Naveed - Stage 3 Year 5

April 4, 2024

MSA GKTeach OSCE Series 2024

MSA Education

Learning Outcomes

By the end of this session, students should be able to:

01. Recognise common symptoms and signs associated with rheumatological and ophthalmological disorders.

02. Demonstrate rheumatology and ophthalmology history taking.

03. Formulate differential diagnoses for rheumatological and ophthalmological presenting complaints based on the history.

04. Justify further examinations and investigations that should be performed following history taking.

5. Reflect on the impact of rheumatological and ophthalmological diseases on patients' physical, emotional, and social well-being.

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Before we start...

Please interact! ☺️.

Use the chat/unmute if you would like to contribute/ask a question.

We are all students (so don't worry if you get things wrong).

Unfortunately, will <u>not</u> be able to cover absolutely everything rheum and ophthalm!

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OSCE History Taking Set-Up

Read instructions

- 2 minutes

History station

- 8 minutes total
  - 6 minutes to take history
  - 2 minutes to summarise and propose further plans

Rheumatology Presenting Complaints

PRISMS

Immune (systemic sclerosis, SLE, Sjogren's syndrome)

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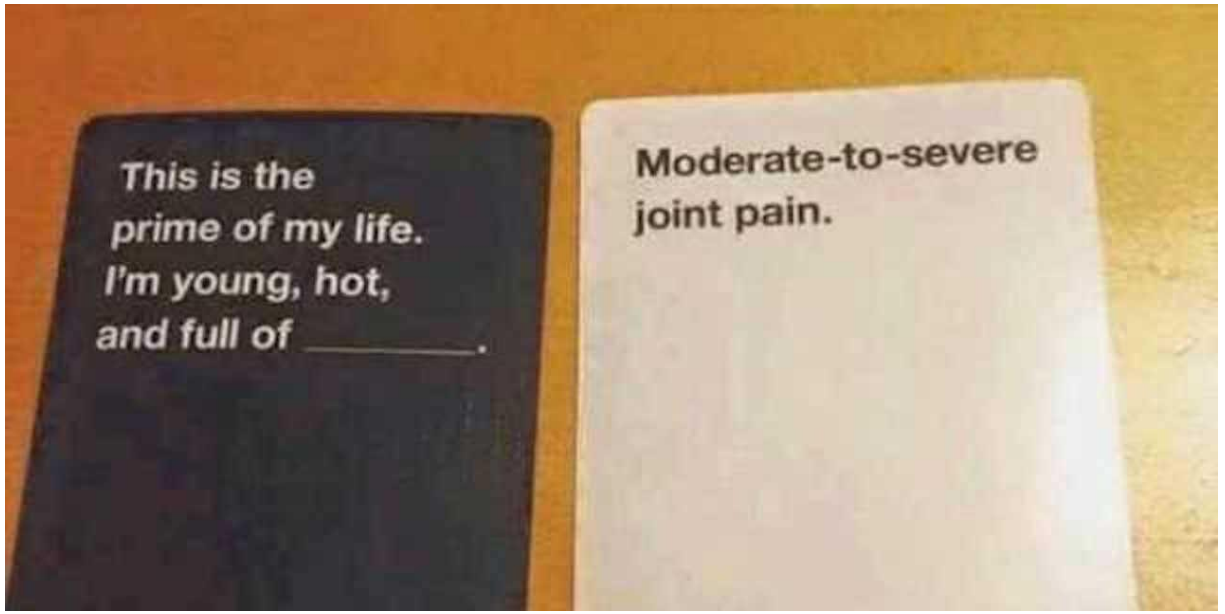

Case 1 – Joint Pain and Swelling

You are a medical student in General Practice.

You are asked to see a 54-year-old female who has presented with joint pain and swelling.

What questions are particularly important to ask in the history?

Joint Pain/Stiffness/Swelling History Tips

Exploring symptom

Pain

- SOCRATES

Stiffness/swelling

- Worse in morning?, how long for (>30 mins can indicate inflammatory)
- Better or worse after exercise (better can indicate inflammatory)
- Sleep disturbance
- Loss of function

Relevant systems review

General

- Fever, rashes, weight loss

Rheumatological

- Joints: pain, stiffness, swelling

Work down body:

- skin (rashes, ulcers, Raynaud's)
- hair loss
- eyes (redness, dryness)
- mouth (dryness)
- chest (breathlessness, SOB)
- GI (IBD symptoms),
- genitourinary (discharge)

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Joint Pain/Stiffness/Swelling History Tips

Past medical history

Conditions relevant to rheumatological disease include:

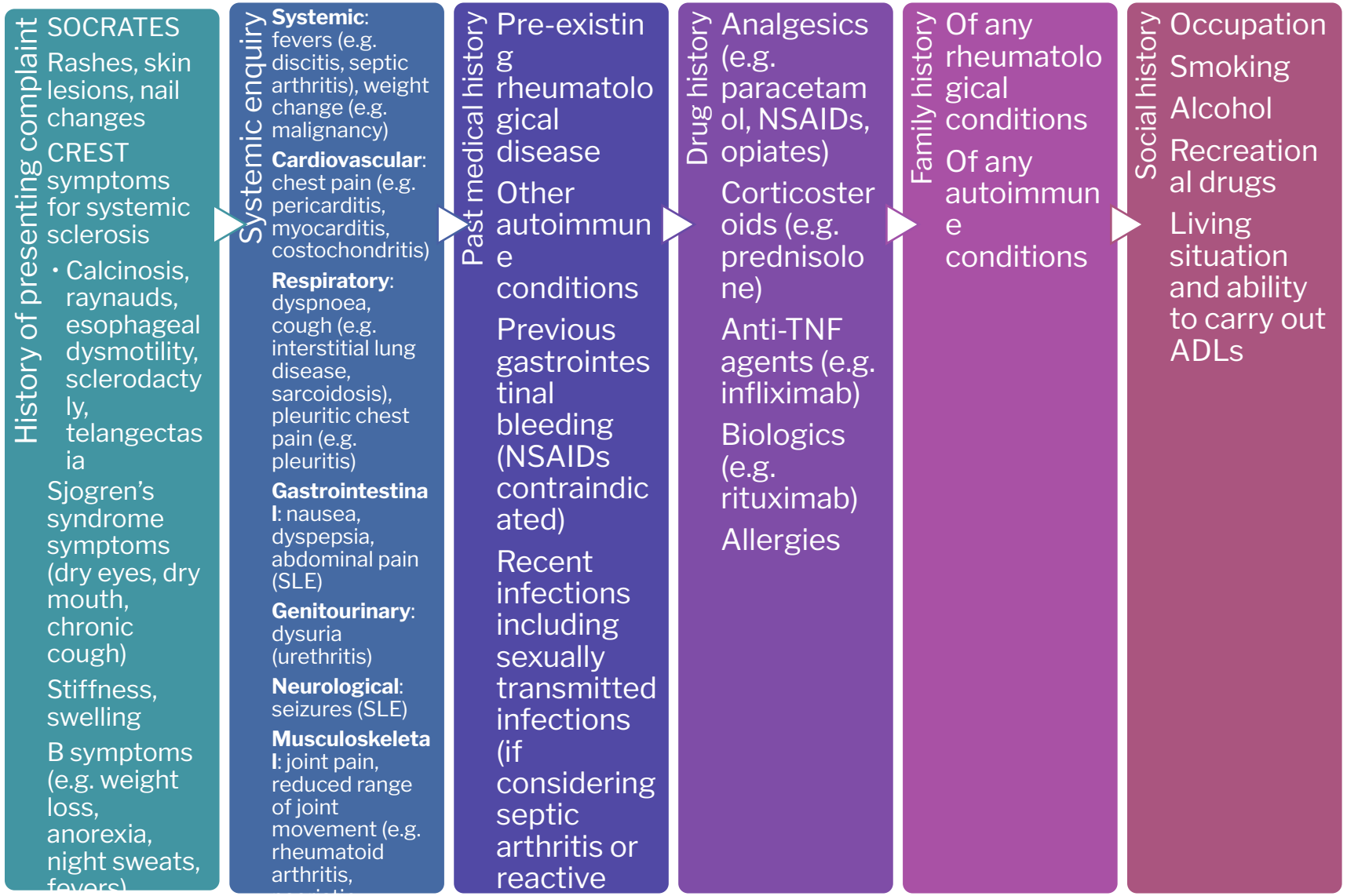
- Pre-existing rheumatological disease
- Other autoimmune conditions
- Previous gastrointestinal bleeding (NSAIDs contraindicated)
- Recent infections including sexually transmitted infections (if considering septic arthritis or reactive arthritis)

Drug History

Medication that can be prescribed in rheumatological conditions include:

- Analgesics (e.g. paracetamol, NSAIDs, opiates)
- Corticosteroids (e.g. prednisolone)
- Biologics (e.g. rituximab, infliximab)

Rheumatology history overview



Case 1

A 54-year-old woman presents to her GP surgery after noticing worsening pain, stiffness and swelling in multiple joints in her hands and feet. Her symptoms are worse in the morning and affect the same joints bilaterally. She notes that she had several weeks of similar pain last year. This subsided for a few months but has recently flared up again.

What autoimmune disease is she most likely suffering from?

A) Graves' disease
B) Osteoarthritis
C) Rheumatoid arthritis
D) Myasthenia gravis
E) Systemic lupus erythematosus

Graves' disease

- This is incorrect. Graves disease is an autoimmune hyperthyroid condition. Joint pain is not a characteristic feature of Graves disease

Osteoarthritis

- This is incorrect. Although joint pain could be explained by osteoarthritis, osteoarthritis is not an autoimmune condition and joint pain tends to be worse at the end of the day after use of the affected joints

Rheumatoid arthritis

- This is the correct answer. Rheumatoid arthritis (RA) is an autoimmune condition targeting citrullinated proteins in the synovial fluid of joint. It particularly affects the peripheral joints - in the hands, feet and limbs. RA is a peripheral, symmetrical (affects both sides of the body) polyarthritis, which means that it affects multiple (>5) joints, and it is typically worse in the morning. It presents with joint pain due to inflammation because of the autoimmune process. It can be relapsing (as in this case), in which the symptoms can disappear before flaring up again. In terms of epidemiology, it affects more women than men, and is most commonly diagnosed in 40-50 year olds. Therefore, this diagnosis illustrates a typical case of RA

Myasthenia gravis

- This is incorrect. Myasthenia gravis is an autoimmune condition characterised by the presence of autoantibodies directed against the acetylcholine receptor at the neuromuscular junction. It typically presents with muscle weakness. Joint pain is not a characteristic feature of Myasthenia Gravis

Systemic lupus erythematosus

- This is incorrect. Systemic Lupus Erythematosus (SLE) can cause arthritis in the peripheral joints, but it is less likely given the lack of other SLE symptoms such as renal involvement, rashes and photosensitivity

Joint pain/swelling differentials

Rheumatoid arthritis

- Slowly progressive symmetrical polyarthropathy
- Small joints (commonly of hand)
- Deforming
- Early morning stiffness

Lupus

- Systemic illness with intermittent fevers
- Photosensitive rash
- Generalised myalgia and arthralgia
- Other systemic symptoms (e.g. psychiatric, pleurisy, ulcers)

Gout

- First MTP joint most affected
- Isolated swollen, hot, painful joint
- Hyperuricaemia risk factors, e.g. diuretics, alcohol excess (esp. beer), renal disease

Septic arthritis

- Isolated hot, red, swollen joint
- Agonisingly painful
- Systemically unwell with fever

Psoriatic arthritis

- Associated skin plaques and nail changes
- Early morning stiffness
- Many patterns of joint involvement

Osteoarthritis

- Increasing age is a risk factor
- Worse on movement (rest helps) and at end of day, night pain common

Case 1

A 54-year-old woman presents to her GP surgery after noticing worsening pain, stiffness and swelling in multiple joints in her hands and feet. Rheumatoid arthritis is suspected. To expedite the diagnostic process, bloods are to be requested. Which of the following is associated with rheumatoid arthritis?

A) Raised urate

B) Anti-cyclic citrullinated peptide autoantibody (anti-CCP)

C) Anti-double stranded DNA (anti-dsDNA) antibodies

D) Raised calcium

E) HLA-B27

OSCE History taking – summarising and suggesting

- 54-year-old female
- worsening pain, stiffness and swelling in multiple joints in her hands and feet
- Symptoms are worse in the morning and affect the same joints bilaterally.
- Had several weeks of similar pain last year which subsided for a few months but has recently flared up again.
- Noted night sweats over the past month and lost 5kg weight in past month

Summarisation

1. Most likely differential diagnosis supported by information obtained from the history
2. Most serious differential diagnosis that you would like to exclude
3. (Another possible differential diagnosis)
4. What you would like to do next
    1. Relevant examinations
    2. Bedside investigations
    3. Bloods
    4. Imaging
    5. Referrals
    6. *(Management – not really expected for stage 2)*
        1. *Conservative/supportive*
        2. *Medical*
        3. *Surgical*

Rheumatology investigations

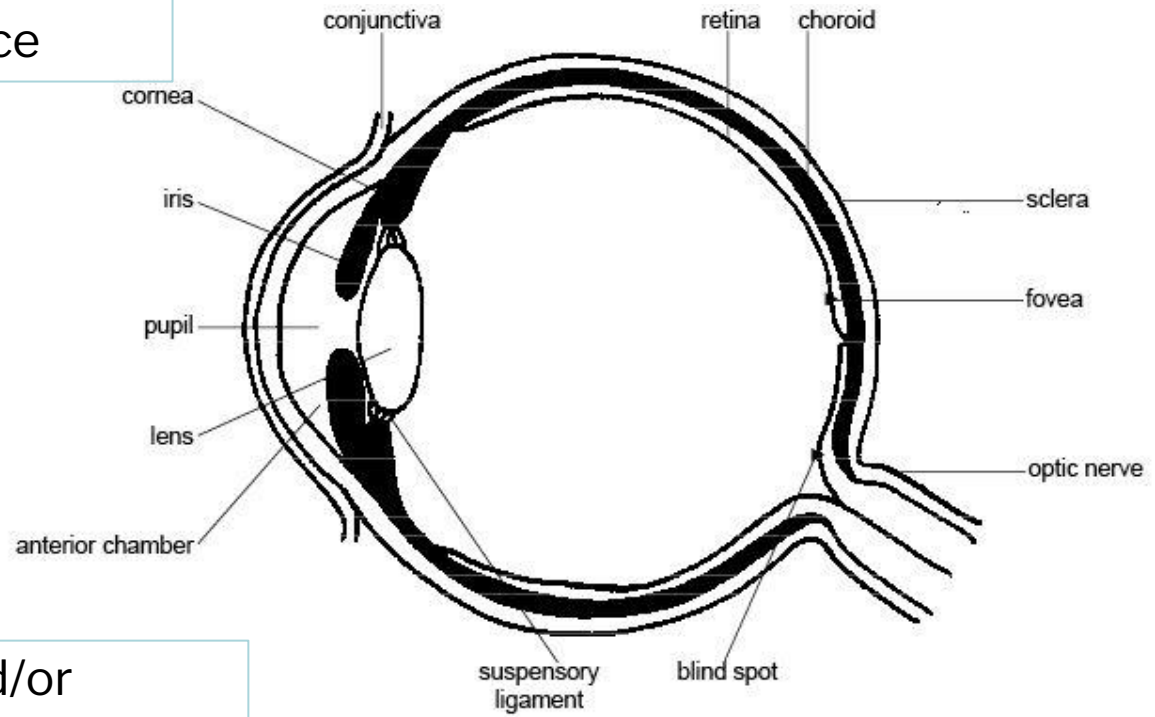
1. Examination of the joints affected as well as above and below
2. Urine dip for proteinuria
3. Joint aspiration if ?infection
4. Bloods: FBC, U&E, LFTs, CRP, ESR (blood cultures if ?infective), autoimmune screen
5. Imaging: xrays, ultrasound

Ophthalmology
Presenting Complaints

Pain

Photophobia

Visual disturbance



Itching

Red eye

Dryness

Eye discharge and/or watering

Grittiness

Case 2 – Visual loss

You are a medical student at the emergency ophthalmic clinic.

You are asked to see a 70-year-old male who has presented with loss of vision.

What questions are particularly important to ask in the history?

Visual Loss History Tips

"Has there been any change in your vision recently?"

Modified SOCRATES

- Site, onset, associated symptoms, time course, exacerbating/relieving, severity

Near vision, distant vision or both affected?

Central/peripheral vision?

Double vision

'Positive' symptoms

- Flashing lights, floaters, curtain over vision, halos around lights

Visual distortions

- Straight lines appearing wavy, shimmering lights across visual field, objects appearing bigger/smaller than what they are

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Ophthalmology History Tips

Past ocular history

Previous episodes like their current presenting complaint.

Other eye problems/diagnoses including amblyopia ('lazy eye').

History of previous eye trauma.

History of ocular surgery (if recent, there is a risk of post-op endophthalmitis).

Prescription glasses and if these are used for distance or near vision.

Contact lenses and if so, clarify the following details:

- Daily disposable, monthly disposable or extended wear lenses
- If the patient sleeps, showers, or swims with lenses on
- Hygiene regimen

Past medical history

Medical conditions relevant to ophthalmic disease include:

- Diabetes mellitus
- Hypertension
- Autoimmune conditions (e.g. rheumatoid arthritis, ankylosing spondylitis, SLE): dry eyes and uveitis tend to be the most common presentations
- Atopy (asthma, allergic rhinitis, eczema): relevant to allergic conjunctivitis and keratitis

Ophthalmology history overview

History of presenting complaint

Systemic enquiry

- **Systemic**: fevers, weight loss, malaise (e.g. temporal arteritis)
- **Cardiovascular**: scalp pain and jaw claudication (e.g. temporal arteritis)
- **Gastrointestinal**: nausea/vomiting (e.g. acute-angle-closure glaucoma), diarrhoea (e.g. ulcerative colitis)
- **Neurological**: headache (e.g migraine, hypertension, raised intracranial pressure, temporal arteritis), weakness, ataxia and sensory disturbances (e.g. multiple sclerosis, diabetes, stroke)
- **Musculoskeletal**: joint pain/stiffness (e.g. rheumatoid arthritis, ankylosing spondylitis), myalgia (e.g. polymyalgia rheumatica)
- **Endocrine**: polyuria/polydipsia (e.g. diabetes mellitus), feeling hot (e.g. hyperthyroidism)

Past ocular history

Past medical history

Drug history

- **Medications** frequently prescribed to patients with **ophthalmic disease** include:
- Lubricants
- Antimicrobials
- Corticosteroids (topical/oral)
- Glaucoma medications (prostaglandin analogues, beta-blockers, adrenergic agonists, carbonic anhydrase inhibitors, cholinergic agents)
- Analgesics
- Anti-histamines (topical and oral)

Family history

- **similar complaints** or formal **diagnoses** of **eye disease**
- family history of **hypertension**, **diabetes** or **rheumatological disease**

Social history

- Occupation
- Smoking
- Alcohol
- Recreational drugs
- Living situation and ability to carry out ADLs
- **Driving**

Case 2

A 70-year-old male patient presents to Ophthalmic Emergency clinic complaining of a one-day history of painless loss of vision in his right eye. He reports a complete absence of vision in this eye. He has a past medical history significant for hypertension, hyperlipidaemia and type 2 diabetes mellitus. On examination, the right retina is diffusely pale, except for the macula which has a bright red colour. Visual field assessment showed a complete monocular scotoma in the right eye. Examination of the left eye is unremarkable.

Which of the following is the most likely diagnosis?

A) Central retinal artery occlusion

B) Acute glaucoma

C) Central retinal vein occlusion

D) Vitreous haemorrhage

E) Retinal detachment

Case 2

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Which of the following is the most likely diagnosis?

A) Central retinal artery occlusion

B) Acute glaucoma

C) Central retinal vein occlusion

D) Vitreous haemorrhage

E) Retinal detachment

Case 2

Which of the following clinical features suggest a diagnosis of central retinal artery occlusion?

A) Photopsia and floaters

B) Carotid bruit

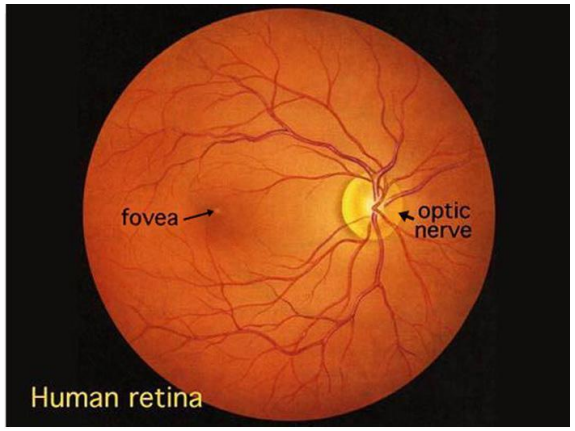
C) Jaw claudication

D) Painful ocular movement

E) Retinal hyperaemia and haemorrhages

Sudden, painless loss of vision lasting > 24 hours

normal



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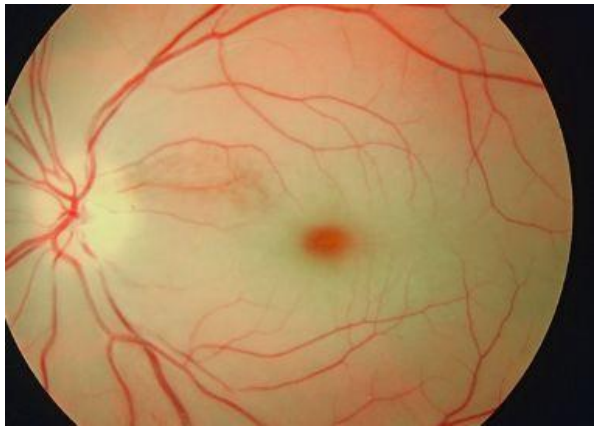
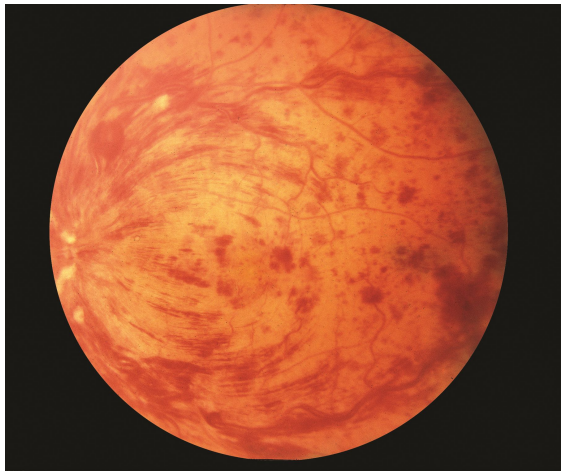


- Cardiovascular risk factors
- ‘Cherry red spot’ at macula on fundoscopy

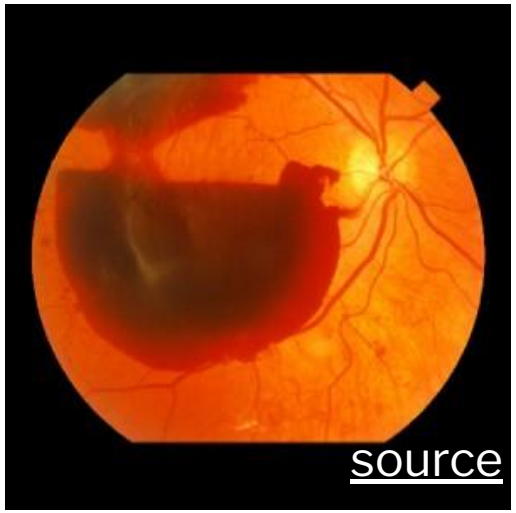
Central retinal artery occlusion



- Cardiovascular /haematological risk factors (prothrombotic)
- ‘Stormy sunset’ appearance on fundoscopy

Central retinal vein occlusion

Sudden, painless loss of vision lasting > 24 hours



- Can complain of floaters
- Difficult to visualise retina on fundoscopy

Vitreous haemorrhage

- Also features of scalp tenderness, jaw claudication and headache
- Associated with polymyalgia rheumatica

Giant cell arteritis / temporal arteritis

- Floaters, flashers
- ‘Curtain over vision’

Retinal detachment

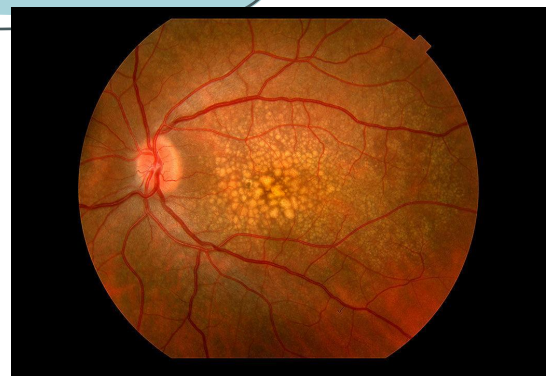
Gradual, painless loss of vision lasting > 24 hours

- Elderly
- Clouding of vision
- Difficulty driving at night
- Haloes around lights

Cataract

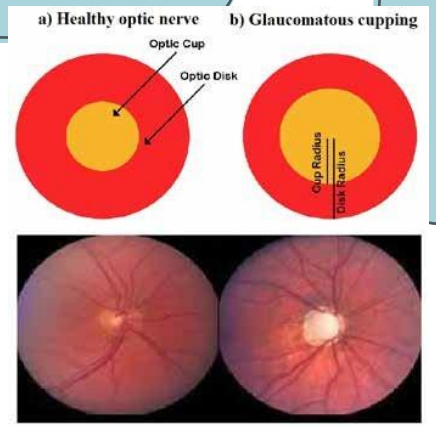
- Progressive loss of central vision over years/decades
- Difficulty in reading text, recognising faces and problems with vision in dim light
- Day to day fluctuation in vision
- Fundoscopy shows drusen at the macula

Dry age-related macular degeneration



- Progressive loss of central vision over months
- Difficulty in reading text, recognising faces and problems with vision in dim light
- Day to day fluctuation in vision
- Fundoscopy may show macular oedema

Wet age-related macular degeneration



- Affects peripheral visual fields first
Fundoscopy may reveal optic disc cupping

Chronic open angle glaucoma

Case 3 – Eye pain

You are a medical student in the Emergency Department.

You are asked to see a 51-year-old female who has presented with severe right eye pain.

What questions are particularly important to ask in the history?

Eye Pain History Tips

History of presenting complaint

- **Site** - under the eyelid, within the eyeball, behind the eye, frontal headache radiating to eye
- **Onset** – how and when
- **Character** – on movement, grittiness, foreign-body sensation
- **Radiation**
- **Associated symptoms** – N+V, unilateral headache, visual disturbance, red eye, discharge/watering, grittiness/dryness, itching, photophobia, swelling
- **Time course**
- **Exacerbating** - blinking, touching the eye, moving the eye, bright light
- **Relieving** - analgesia, cool water, warm compress, removing contact lenses, dimming the lights
- **Severity**

Red flags

Eye pain: moderate to severe pain should always be treated as a red-flag symptom.

Photophobia

Visual disturbances

Red-eye: marked redness especially if associated with pain and/or loss of vision should be referred for a specialist opinion.

Trauma

Case 3

A 51-year-old female presents to Accident & Emergency complaining of a painful right eye. She reports onset of a dull aching pain over the space of hours associated with a severe headache and nausea. She has no medical history and wears reading glasses.

On examination, you note a red eye with a fixed dilated pupil.

Which of the following is the most likely diagnosis?

A) Anterior uveitis
B) Corneal abrasion
C) Scleritis
D) Acute angle closure glaucoma
E) Cluster headache

Case 3

What is the most important investigation to confirm the diagnosis of acute angle closure glaucoma?

A) Ultrasound B-scan
B) Goldman's tonometry
C) Fluorescein angiography
D) Serum autoantibody screen
E) Optical coherence tomography

Ultrasound B-scan

Incorrect - is a useful investigation in determining retinal detachment and lens subluxation, but this is not suggested by the history

Goldman's tonometry

Correct - is the gold standard test for measuring intra-ocular pressure, which will be significantly raised in acute angle closure glaucoma

Fluorescein angiography

Incorrect - is used in the assessment of retinal vascular disease. It may be useful in patients suspected of having a secondary/neovascular glaucoma, but not in acute angle closure glaucoma

Serum autoantibody screen

Incorrect - serum autoantibody screen may be useful if considering anterior uveitis secondary to an autoimmune disease, but not in this case

Optical coherence tomography

Incorrect - OCT is used in the evaluation of retinal diseases such as age-related macular degeneration and retinal dystrophies

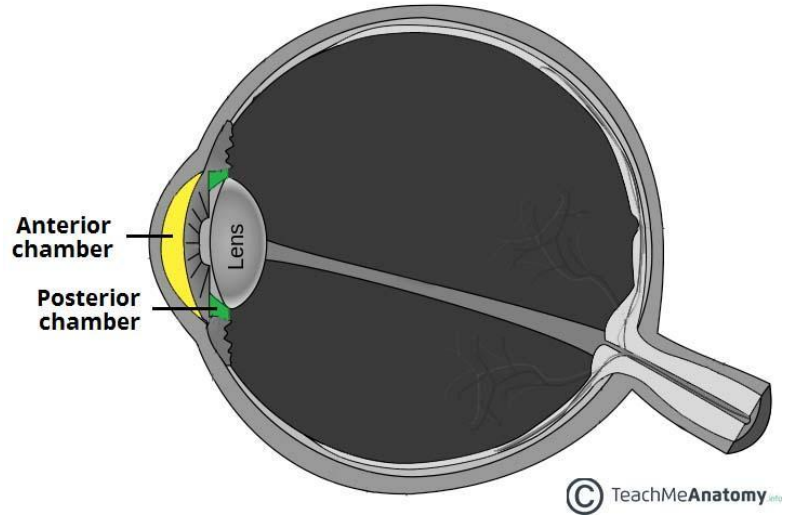
Eye pain differentials

- Affects adult women more than men
- Eye pain, visual loss, colour blindness
- Primary causes are demyelinating lesions (especially multiple sclerosis), autoimmune disorders, and infectious conditions

Optic neuritis

- Risk factors: elderly, Asian ethnicity, longsightedness
- Nausea, headaches, ocular pain, blurred vision, and a fixed-dilated pupil

Acute angle closure glaucoma



- Painful red eye, photophobia, blurred vision, and headache
- May have small and irregular pupil
- Associated with various autoimmune diseases and infections (e.g. HIV, herpes, TB, syphilis)

Anterior uveitis

Eye pain differentials

- Pain, photophobia and possibly reduced visual acuity
- obvious trauma/injury to the eye, or they may belong to a profession that puts them at risk – such as sheet metal working

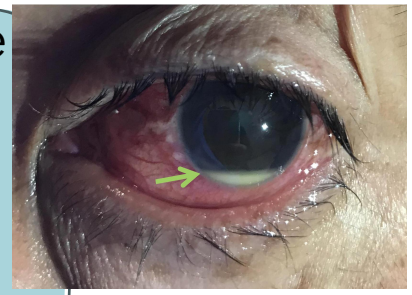
Corneal abrasion

- Severe pain in the orbit and pain on eye movement, red eye
- Can be associated with rheumatological conditions such as rheumatoid arthritis or granulomatosis with polyangiitis,

Scleritis

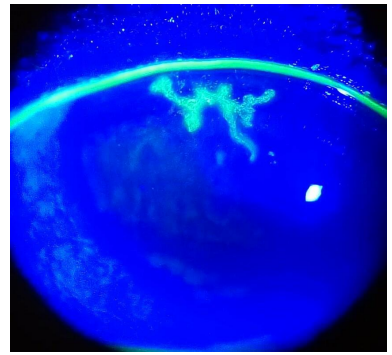
- Pain, photophobia and excessive lacrimation
- Slit lamp examination with fluorescein application is important
- Increased risk in contact lens wearers

Corneal ulcer



- Can be due to infective or non-infective causes
- Painful red eye with photophobia and a foreign body sensation
- White density may be visible on the cornea where white blood cells have collected
- Increased risk in contact lens wearers

Keratitis



- Redness, pain, decreased vision
- Often occurs a few days post-surgery

Endophthalmitis

OSCE History taking – summarising and suggesting

- 51-year-old female presents to Accident & Emergency complaining of a painful right eye.
- Dull aching pain over the space of 3 hours associated with a severe headache and nausea.
- Wears reading glasses.
- No past medical history or drug history, usually fit and well.
- Family history of open angle glaucoma

Summarisation

1. Most likely differential diagnosis supported by information obtained from the history
2. Most serious differential diagnosis that you would like to exclude
3. (Another possible differential diagnosis)
4. What you would like to do next
    1. Relevant examinations
    2. Bedside investigations
    3. Bloods
    4. Imaging
    5. Referrals
    6. *(Management – not really expected for stage 2)*
        1. *Conservative/supportive*
        2. *Medical*
        3. *Surgical*

Ophthalmology investigations

- Bedside ophthalmological examination (acuity, fields, reflexes, fundoscopy, eye movements etc.)
- Slit lamp examination
- Gonioscopy - assessing angle between iris and cornea (often routine procedure)
- Tonometry - measurement of intraocular pressure
- Corneal scrapes
- Culture of aqueous humour
- Optical coherence tomography (OCT)
- Fluorescein angiography
- Autoimmune blood screen, FBC, CRP, U&Es, LFT to identify anaemia of chronic disease, neutrophilia, renal function
- Urine dipstick to identify renal disease through proteinuria (rheumatological)
- MRI head and spine (MS)

Learning Outcomes

Students should be able to:

01. Recognise common symptoms and signs associated with rheumatological and ophthalmological disorders.

02. Demonstrate rheumatology and ophthalmology history taking.

03. Formulate differential diagnoses for rheumatological and ophthalmological presenting complaints based on the history.

04. Justify further examinations and investigations that should be performed following history taking.

5. Reflect on the impact of rheumatological and ophthalmological diseases on patients' physical, emotional, and social well-being.

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Write in the chat:

Something you will take away from this session?

Top tips for history taking stations!

1. Read the vignette several times – have a few differential diagnoses in mind.
2. Take a full history in the station.
3. Practise, practise and more practise in exam conditions.
4. Have at least a few symptoms in mind for each body system.
5. Gel hands at the start of the station.
6. Have a structure in mind, but don't be rigid.
7. Use a mixture of open and closed questions.
8. It's okay if your differentials are wrong – but common conditions are common.
9. ICE and empathy are your best friends.
10. Try your best ☺

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Please fill in the feedback form:
https://docs.google.com/forms/d/1AfR3nJI-FMpGctBGf-zU5rn9bSjInp90nFDxg3fLd-c/viewform?edit_requested=true

Contact the MSA:
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Tiktok: @gktmedics
Twitter: @gktmsa

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Resources used: Geeky Medics, OSCEstop, NICE, (image sources linked to image)

aribah.naveed@kcl.ac.uk

Thank you

Something to watch – Virtual Eye Professor
https://timroot.com/videos/
Something to listen to - Zero to Finals podcast - ophthalmology:
https://open.spotify.com/playlist/3GNbURFfdv5jxo03MlhCK2?si=76786d0a297440fa
Something to read – Mind The Bleep Ophthalmology
https://mindthebleep.com/ophthalmology/
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