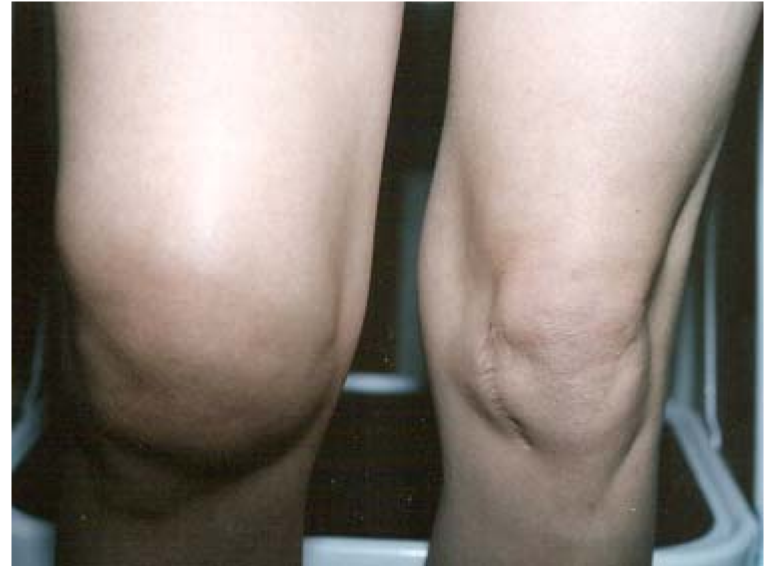
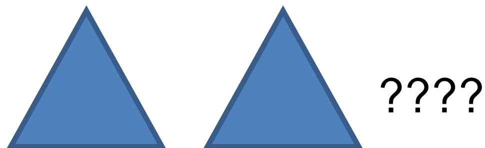
Rheumatology Masterclass January 2011

Dr Sarah Woodham
Consultant Rheumatologist

Clinical case

- 60 year old man
- DM on Gliclazide
- RA on Methotrexate
- Swollen R. knee x 5/7
- ↓ ROM
- Low grade pyrexia 37.8 degrees
- WCC -15, neutrophilia





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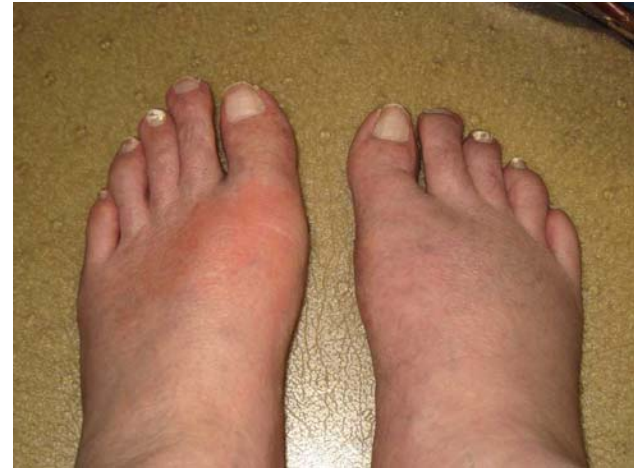
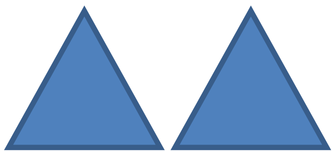
Clinical case

40 year old man

- 4 day h/o pain, swelling, redness of forefoot
- Unable to weight bear
- Previous gout
- Recent alcohol binge
- CRP 120





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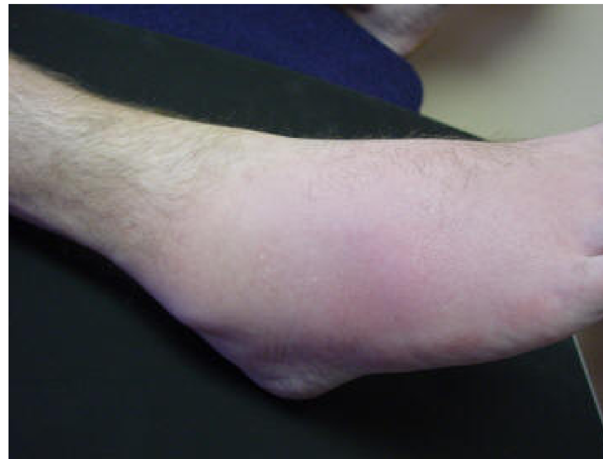

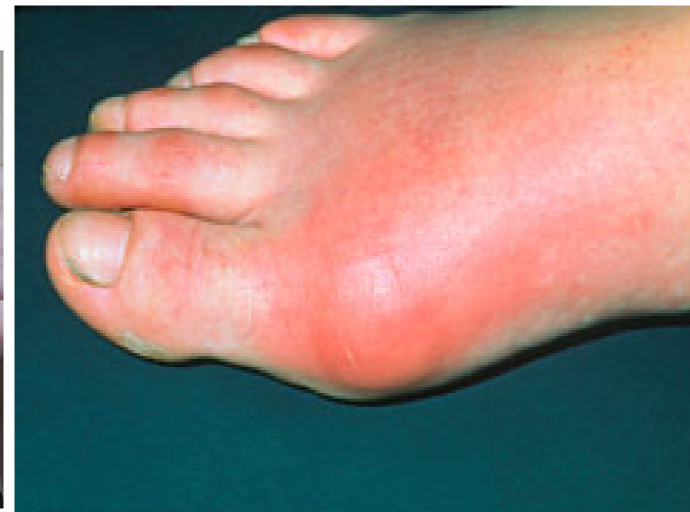

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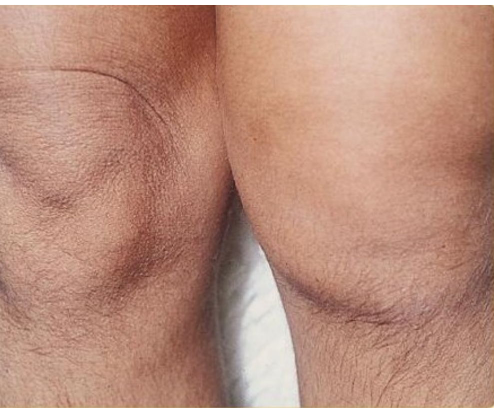
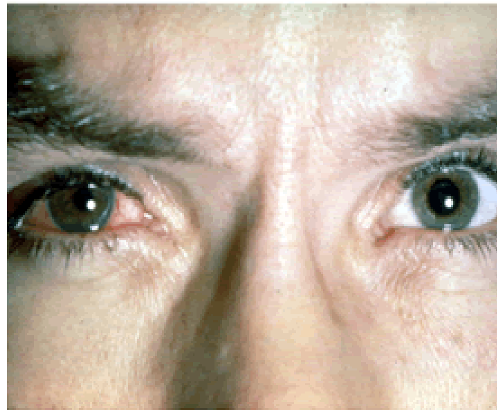
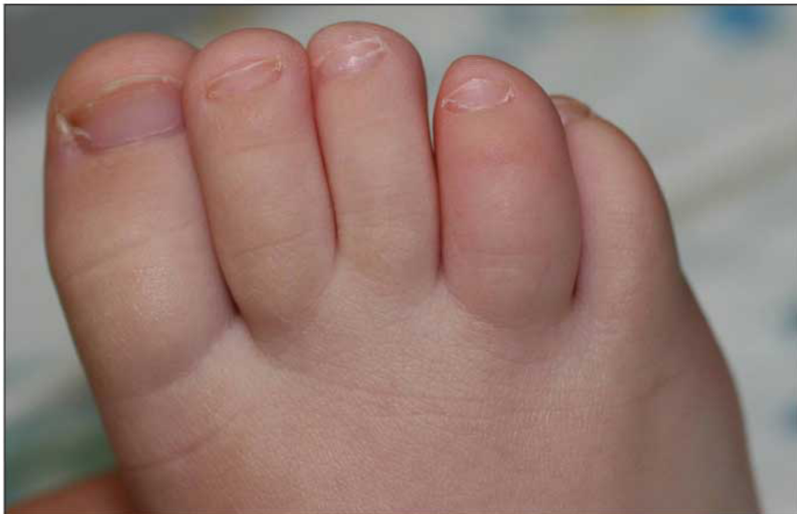
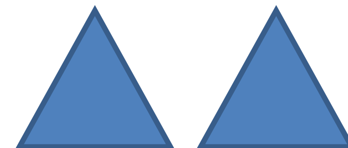




45 year old man
Recent holiday in Spain
Gastroenteritis – Salmonella
Treated 2 weeks ago
Last 5/7 c/o swollen L. knee
R. eye painful & red
Swollen R. 4th toe





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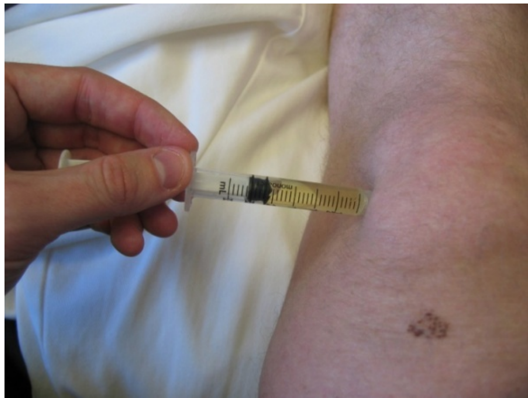
BSR guidelines for managing the hot swollen native joint in adults / 1

Sympt & signs suggestive of septic arthritis

- Hot, swollen, tender jt/jts
- Suspect & treat for septic arthritis until proven otherwise



Investigations

- Aspirate – MC&S **pre antibiotics**
- Warfarin not CI to aspiration
- Possible inf prosthetic jt – orthopaed
- Bld cultures
- Wcc, ESR, CRP (monitoring)
- Urate not diag in acute gout
- Ues/LFTs – end organ damage
- Swabs & cultures for possible for non articular infection

BSR guidelines for managing the hot swollen native joint in adults / 2

Imaging

- X rays

Baseline only (usu N.)

- MRI – detects

osteomyelitis

- IV x 2 weeks

Oral x 4 weeks

- Sympts/signs/acute phase

responses helpful in deciding to stop antibiotics

Recommendations specific to primary care & emergency dept

- Commonest hot jt seen in primary care is 1st mtp jt

- If unexpectedly cloudy fluid aspirated from jt – send pt & jt aspirate to A&E for assessment
  - don't inject steroid

- GPs & A/E drs should refer pts with suspected septic arthritis for jt aspiration

- Admit pts with suspected septic arthritis

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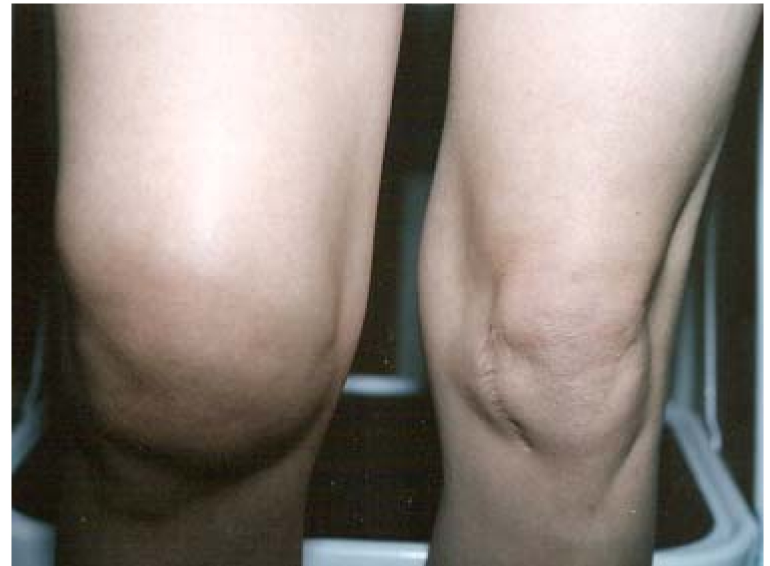
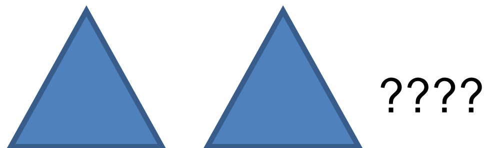
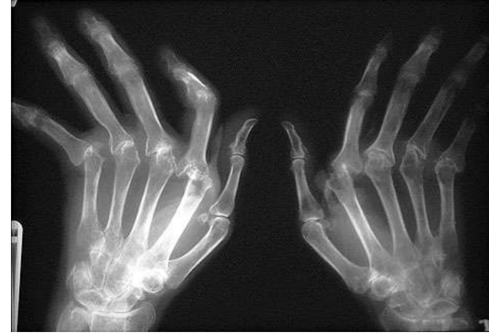
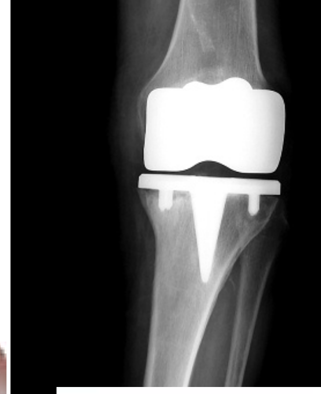




Who gets septic arthritis?

•Pre existing jt disease (RA)

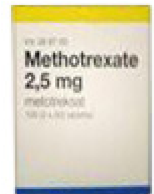
•Prosthetic joints

•Social set up - low socio-ecom status, IV drug abuse, alcoholism

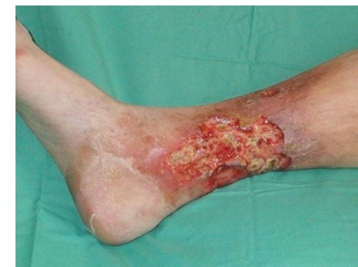
•Medical conditions - DM, steroids, immunosup, >80yrs

•Previous IA steroid / recent jt surgery

•Skin lesions / ulcers - source of infection eg RA



•Poor prognostic features - older age, pre-existing jt disease, presence of synthetic material in jt



Presentation

Typical presentation (85% pts)

- Fever
- Joint - hot, red, painful, distended, ↓ ROM
- Diff weight bearing
- Mono articular (10-15% > polyarticlar)
- Suspected prosthetic jt - refer orthopaedics

Neisseria gonorrhoeae

- Fever
- Tenosynovitis
- Migratory polyarthritis
- Dermatitis

Laboratory investigations

- FBC - leucocytosis with left shift
- ESR / CRP ↑
- Blood cultures
  - + in 50% staph aureus infections
  - N gonorrhoeae - 10% cases +
- Urethral, cervical, pharyngeal & rectal cultures- higher yield for N gonorrhoeae
- Joint aspiration
  - diagnostic & therapeutic procedure

Medical treatment

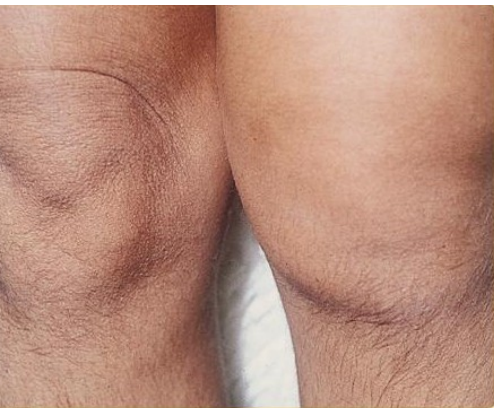
- Drainage & Lavage
- IV antibiotics

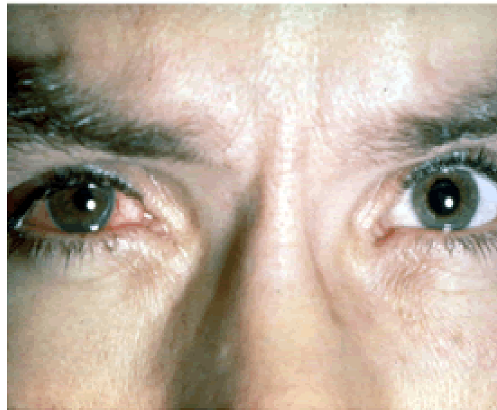
  - after synovial fluid & bld for mc&s
  - not oral /IA
- Duration of therapy
  - 14 days IV, 4wks oral

Empirical antibiotic regime

Patient group	**Antibiotic choice**
No risk factors for atyp orgs	Flucloxacillin 2g qds +/- Gentamicin
High risk of grm neg sepsis (elderly, frail, rec UTI, recent abd Sx)	2nd/3rd G Cephalosporin egCefuroxime 1.5g tds or 3rd G Cephalosporin + Flucloxacillin
MRSA risk (NH, leg ulcers, G catheters)	Vancomycin iv+2nd /3rd Cephalosporin
Susp gonococc/meningococ	Ceftriaxone IV

Clinical case





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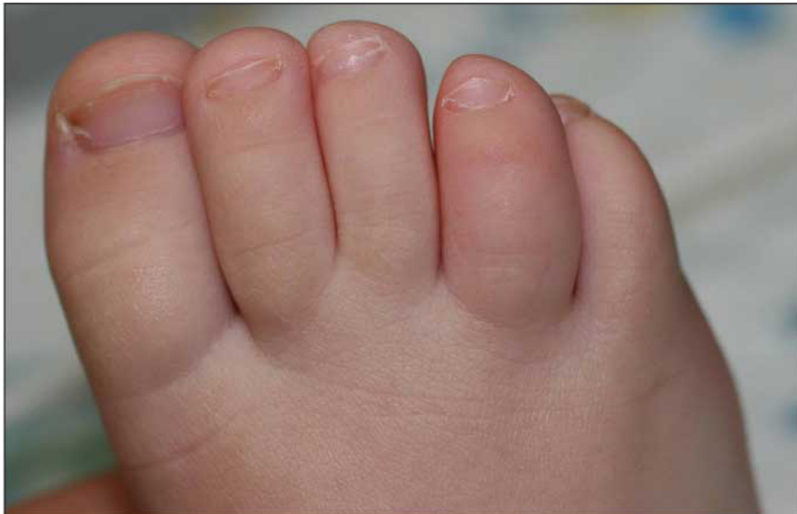

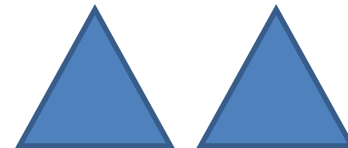

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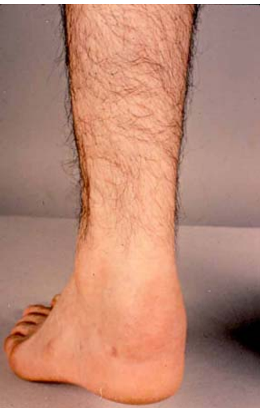
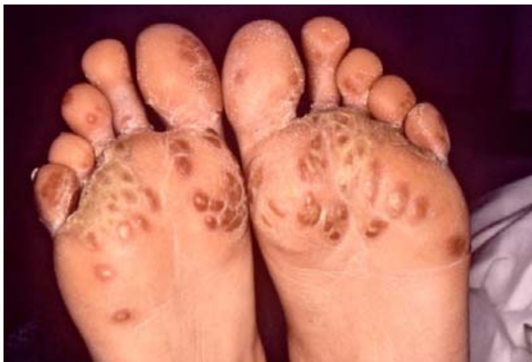
Classical Reactive arthritis

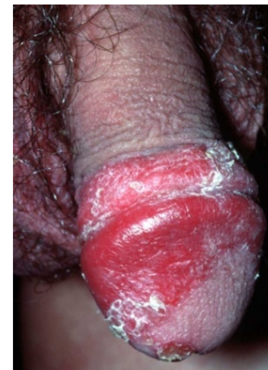
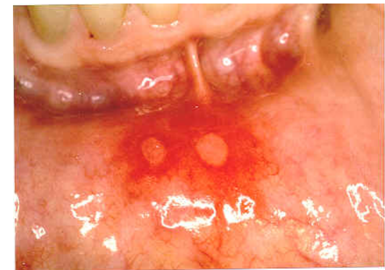
- Triad - arthritis, conjunctivitis, urethritis
- Infec at distant site
- Jt asp sterile
- HLA B27 + 80% cases
- Young males

- Arthritis – asym, lower limbs, effusion
- Plantar fasciitis
- Dactylitis
- Eyes – conjunctivitis, uveitis
- Skin – oral ulcers, keratoderma blenorrhagica, circinate balanitis, nail discolouration

Any organism eg virus etc can cause reactive arthritis

Rx:NSAIDs,IM Depomedrone +/- Sulphasalazine

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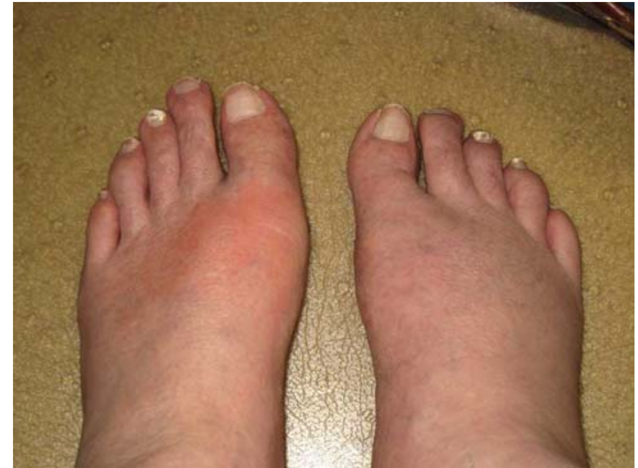

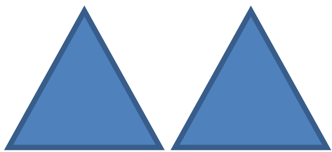

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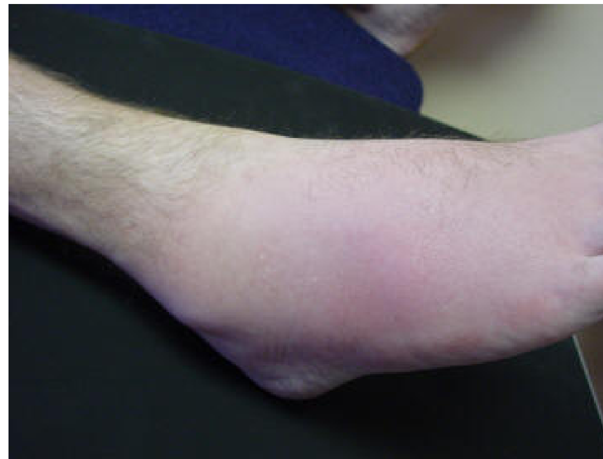
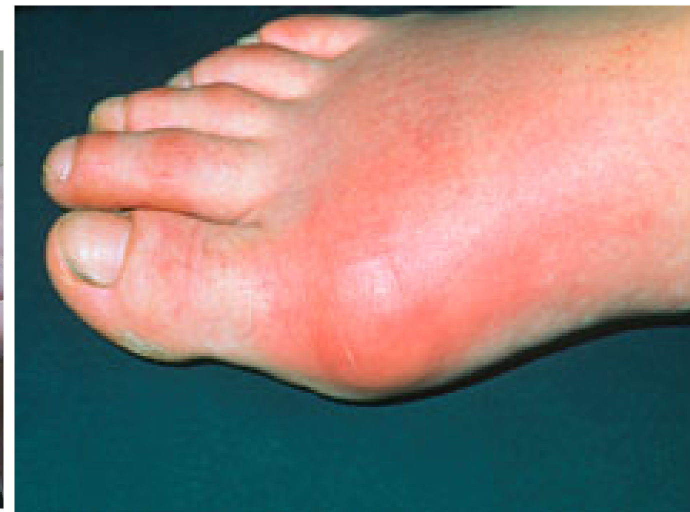
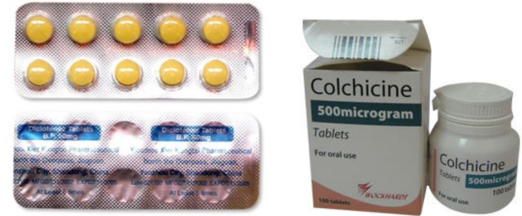




Management of acute gout

•Anti inflam drug x 1-2 wks

- NSAIDs / coxibs – max dose
- Colchicine – 0.5mg bd up to 6 mths



•Allopurinol –

- not de novo during acute attack
- con't if already on it

•Steroid

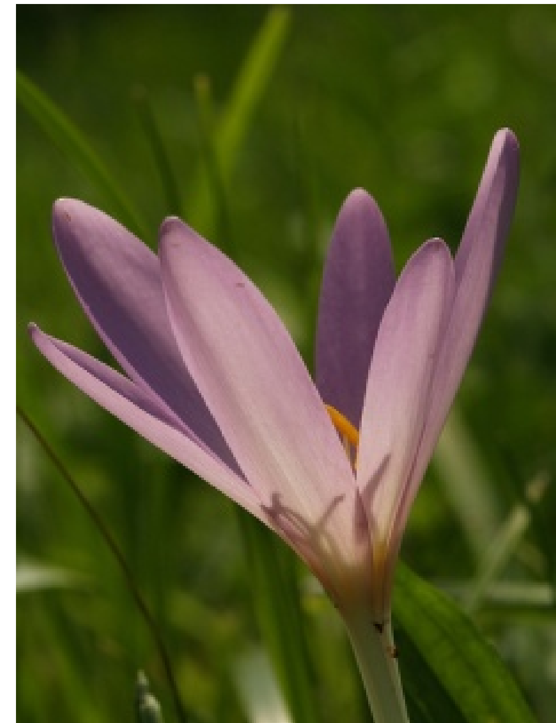
- IA – single joint
- IM / oral / IV – don't tolerate NSAIDs or refractory to other treatments

IM Depomedrone 120mg stat

Prednisolone 20 - 30mg po x 5 – 7 days

Colchicine

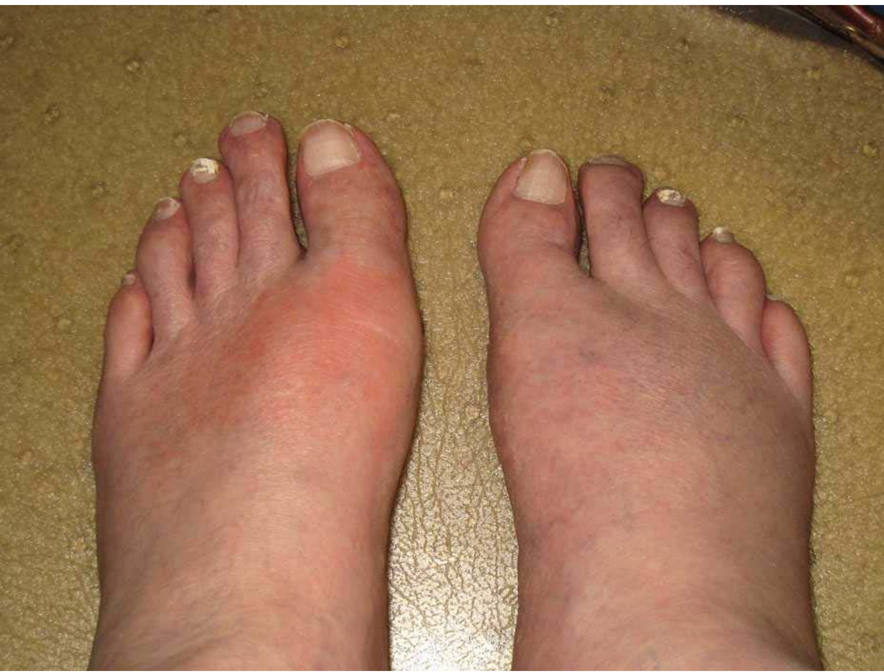
- Alkaloid derived from autumn crocus
- 1st used in gout – 6th C. AD
- SE – diarrhoea, neuromyopathy

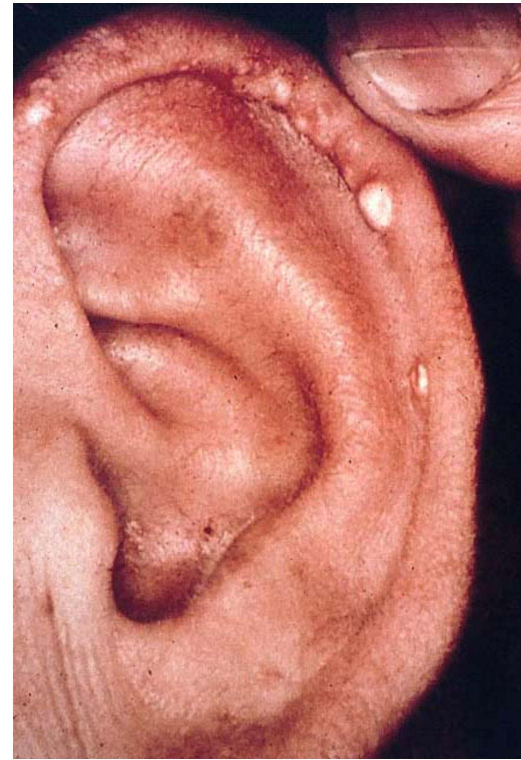


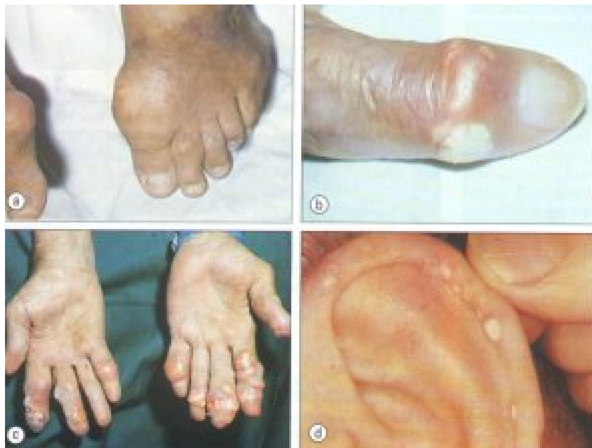
Inhibits microtubule assembly in neutrophils

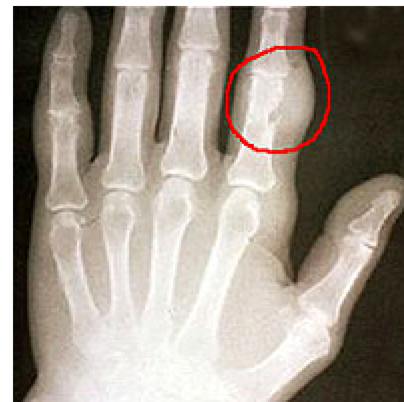
↓

phagocytosis & transport of serum urate









Treatment of chronic gout / 2

- Allopurinol - XO inhibitor
  - 100mg/day, ↑ by 50-100mg every few wks
  - Max Allopurinol dose 900mg
  - max 100mg in renal failure

- Febuxostat – selective XO inhibitor
  - 40 – 80mg / day
  - LFT monitoring
  - Avoid in active CV disease

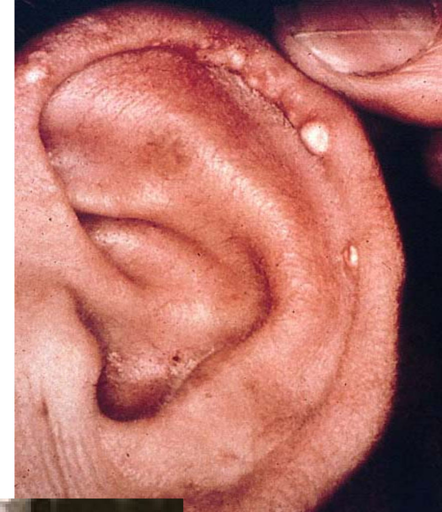
- Probenecid(uricosuric agent)500–1000mg bd/tds
- Benzbromarone – uricosuric agent for renal insuff

Don't forget NSAIDs, Colchicine or steroid to prevent acute gout

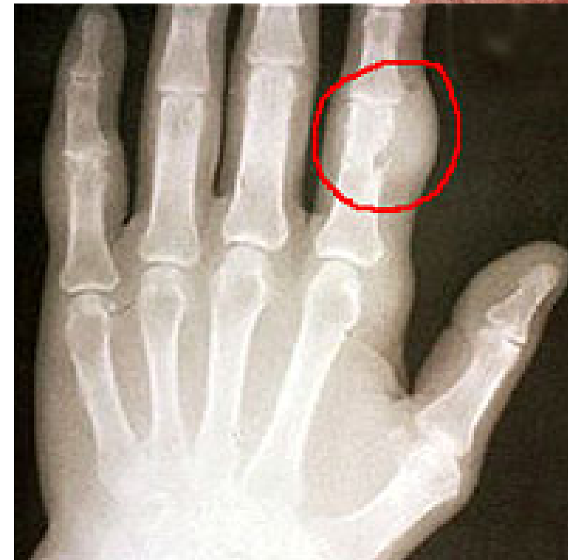
Avoid using XO inhibitors in patient who take Azathioprine (Aza in partly met by XO)

Treatment of chronic gout / 3

Indications for uric acid lowering drugs



- Recurrent attacks (>2 per year)
- Tophi
- Erosive changes on x ray
- Renal insufficiency due to gout
- Uric acid stones
- Continued treatment with diuretics
- Disability due to gout



Aim to keep urate levels low

- EULAR $\leq$ 0.36 mmol/l
- BSR $\leq$ 0.30 mmol/l
- Lower than N. range of UK labs (0.20-0.42mmol/l)

Dietary don'ts

- Purine rich **<u>diet</u>**–red meat, sea food, marmite

- Alcohol(beer/lager) – accel purine met, ↓ renal urate excretion (Mod wine intake not assoc) **<u>drink</u>**

- Fructose (soft **<u>drinks</u>**, fruit juice)

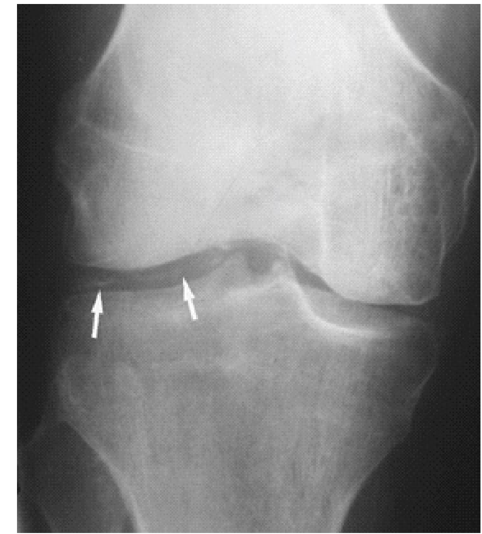
- Obesity - wt reduction – can improve hyperuricaemia

- **<u>Dehydration</u>**
- **<u>Diuretics</u>**

Dietary do's

- *Skimmed milk*
- *Low fat yoghurt*
- *Soy beans*
- *Veg sources of protein*
- *Cherries*
- *Vitamin C - uricosuric*
- *Fluid > 2 l/day*

Pseudogout



- Ca pyrophosphate crystals in jt synovium
- Acute inflam arthritis
- Self limiting acute / subacute arthritis
- Mono / oligo arthritis
- Attacks resemble gout
- Precipitating factors – Trauma, sx, severe illness
- Knee – 50% cases
- Ca pyroPO crystals can form masses like tophi locally destructive & compressive symptoms (rare)

Associated disorders

- Haemochromatosis
- Hyperparathyroidism
- Hypomagnesemia
- Hypophosphatasia
- Hypothyroidism
- Familial hypocalciuric hypercalcemia

Screening tests

- Calcium
- PTH
- Phosphorus
- Magnesium
- Alkaline phosphatase
- Ferritin
- Iron
- Thyroid-stimulating hormone

Treatment of Pseudogout

Acute Pseudogout

Single joint

- Jt aspiration (diagnosis & treatment)
- + I/A glucocorticoid injection

>2 joints affected

- Joint aspiration – impractical
- NSAIDs / oral Colchicine
- Systemic glucocorticoids

Recurrent Pseudogout

- Daily oral Colchicine

Chronic Pseudogout

- No proven treatment to prevent progression

- Treat underlying cause

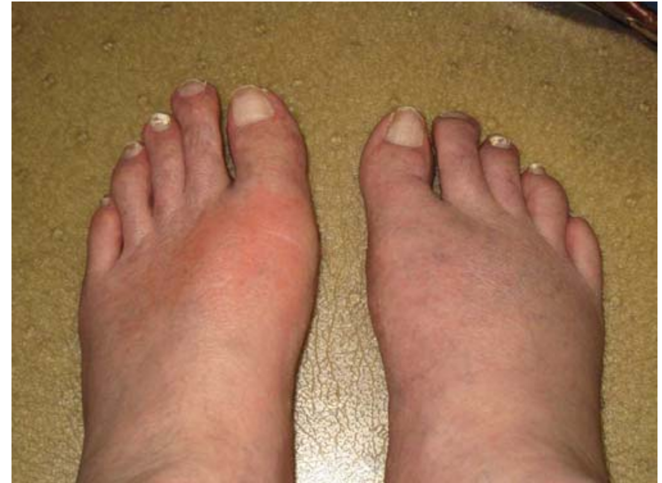
Case

76 year old lady

- H/o HTN & AF
- Dh Diuretics, warfarin
- Prone to diarrhoea
- c/o pain in small joints of hands

with swelling of several mcp joints and right ankle

- Recalls previous episode of 1st mtp joint pain
- Difficulty walking
- Urate – 0.50
- Creatinine – 140
- INR – 1.6

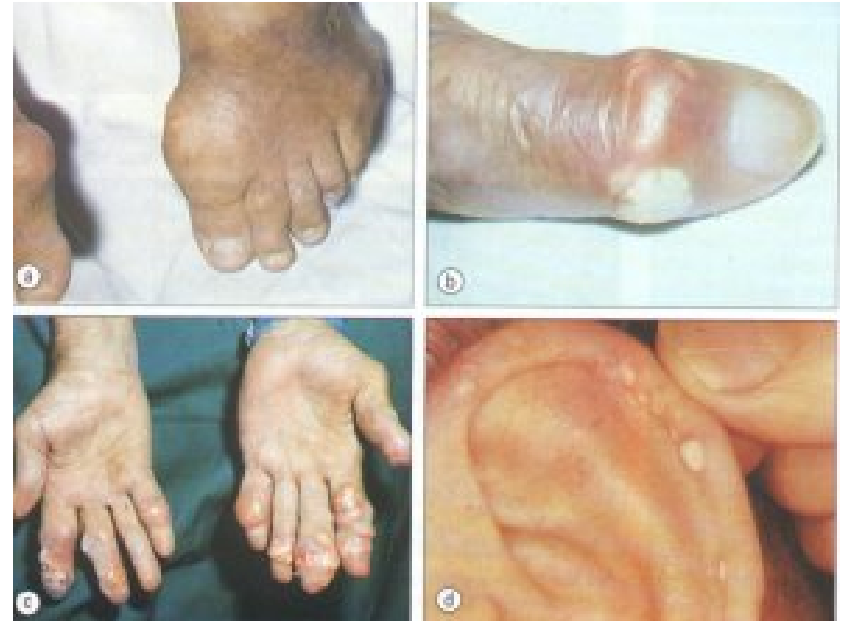


Management

- Polyarticular gout
- Colchicine 500mcg bd (avoid NSAIDs)
- Or IM Depomedrone 120mg stat
- Or Prednisolone 20 – 30mg x 5-7 days
- Allopurinol 100mg (in view of renal disease) or Febuxostat
- Change diuretic to other antihypertensive

Case

- 66 year old man
- 20 year h/o gout
- Poor compliance with medication
- Past h/o significant alcohol intake
- Now alcohol occ
- c/o discharging lesions on hands with swellings of small jts of hands
- Takes Ibuprofen to relieve pain
- Urate 0.66
- Creatinine 160



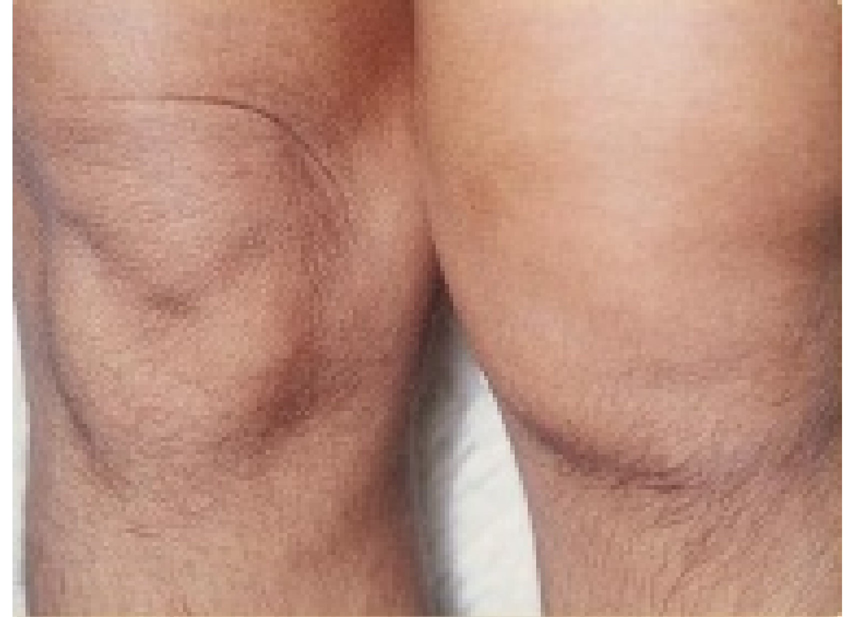
Management

- Allopurinol but max 100mg/day

  or Febuxostat
- Aim to get urate < 0.3 – 0.35
- Colchicine to prevent an acute attack of gout
- Stop predisposing factors
- Stop Ibuprofen in view of renal failure

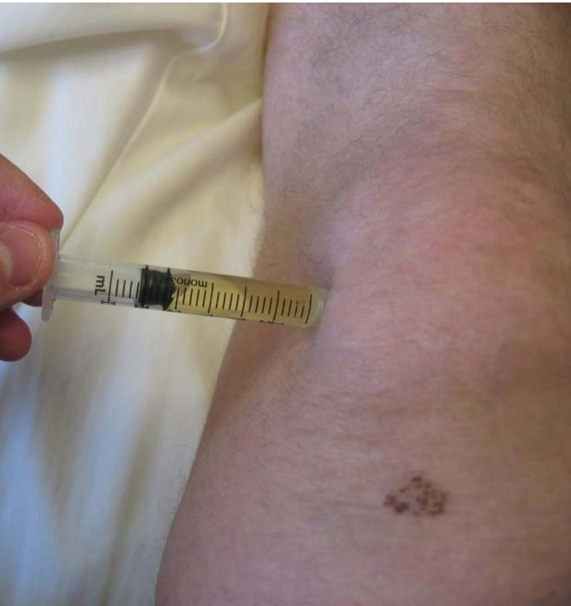
Case

- 70 year old man
- 2 week h/o pain & swelling of left knee
- Warm, tender
- Reduced ROM
- Reduced mobility & walking
- CRP 200
- Hb 15
- Urate 0.34
- Admitted to hospital



Management

- Aspirate left knee
- Jt aspirate for MC&S / crystals
- To exclude infection ie septic arthritis
- I/A steroid – Triamcinolone or
  Depomedrone
- NSAIDs / Colchicine
- Diff diagnosis – Gout / Pseudo gout

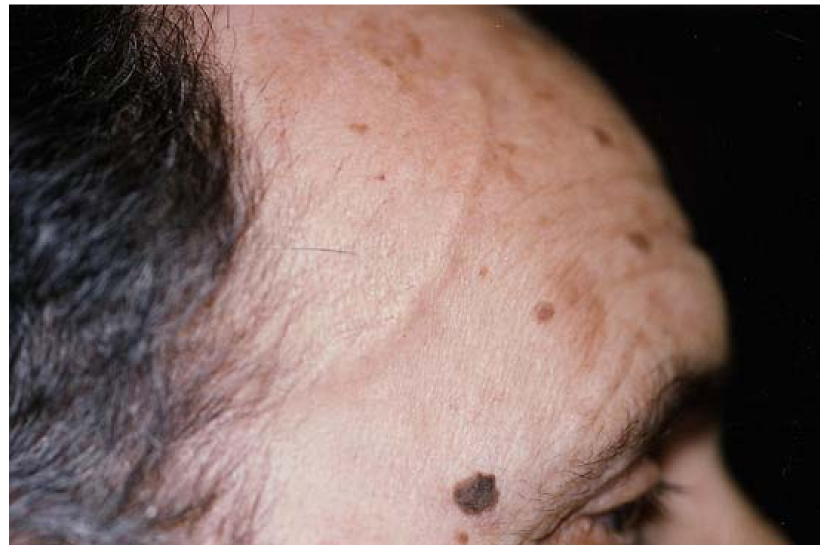


Other Rheumatological Problems

Clinical case

- 70 year old female
- 3/7 h/o headaches, soreness of scalp
- R. Sided jaw pain
- R. Temporal artery pain / tenderness
- Vision not affected
- ESR 90, CRP 50

- **Diagnosis** – Possible Temporal arteritis



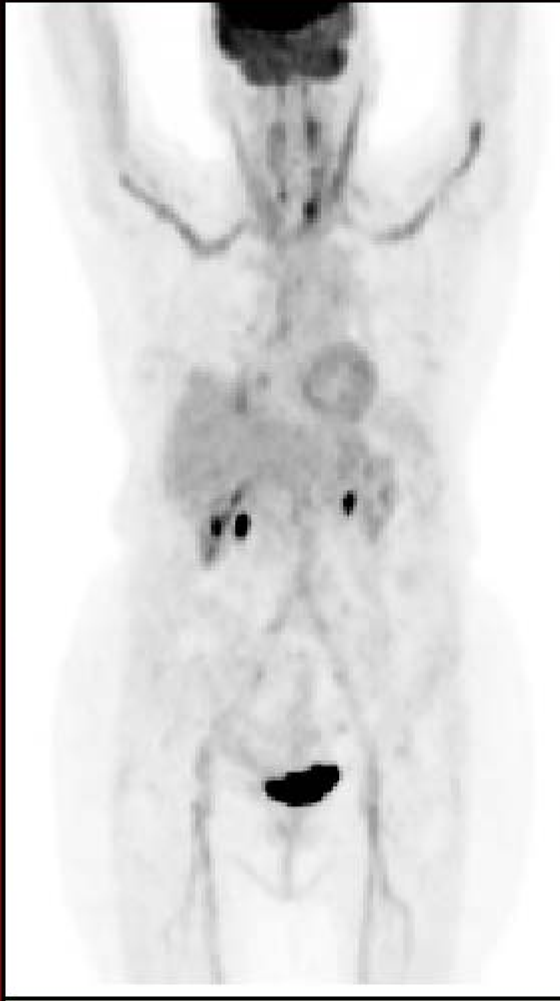
Clinical case

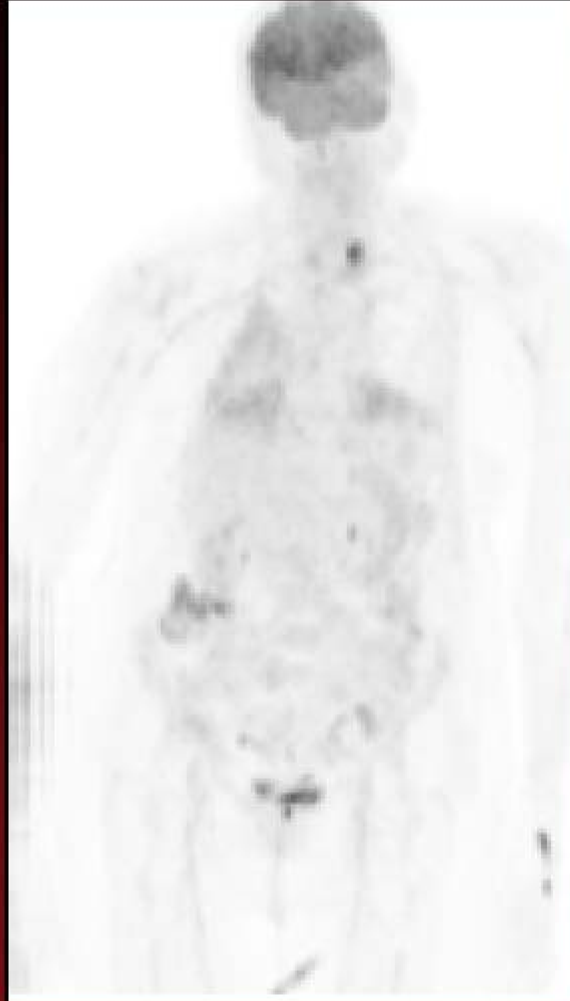
- 72 year old lady
- H/o PMR – 2 yrs ago
- 18mth course of steroid – compl 6 months ago
- Intermittent headaches x 2 wks
- Frontal headaches x 2days
- ESR 75, CRP 40

Diagnosis – Possible Temporal arteritis

Case

70 year old man
- c/o feeling generally unwell
- Weight loss 1 stone in 3 months
- Loss of appetite
- Low grade pyrexia
- Prominent Temporal arteries
- FBC – Hb 10 N/N, normal WCC differential
- CRP 80, ESR 99
- CXR – N.
- Mantoux negative
- Temporal artery biopsy - negative

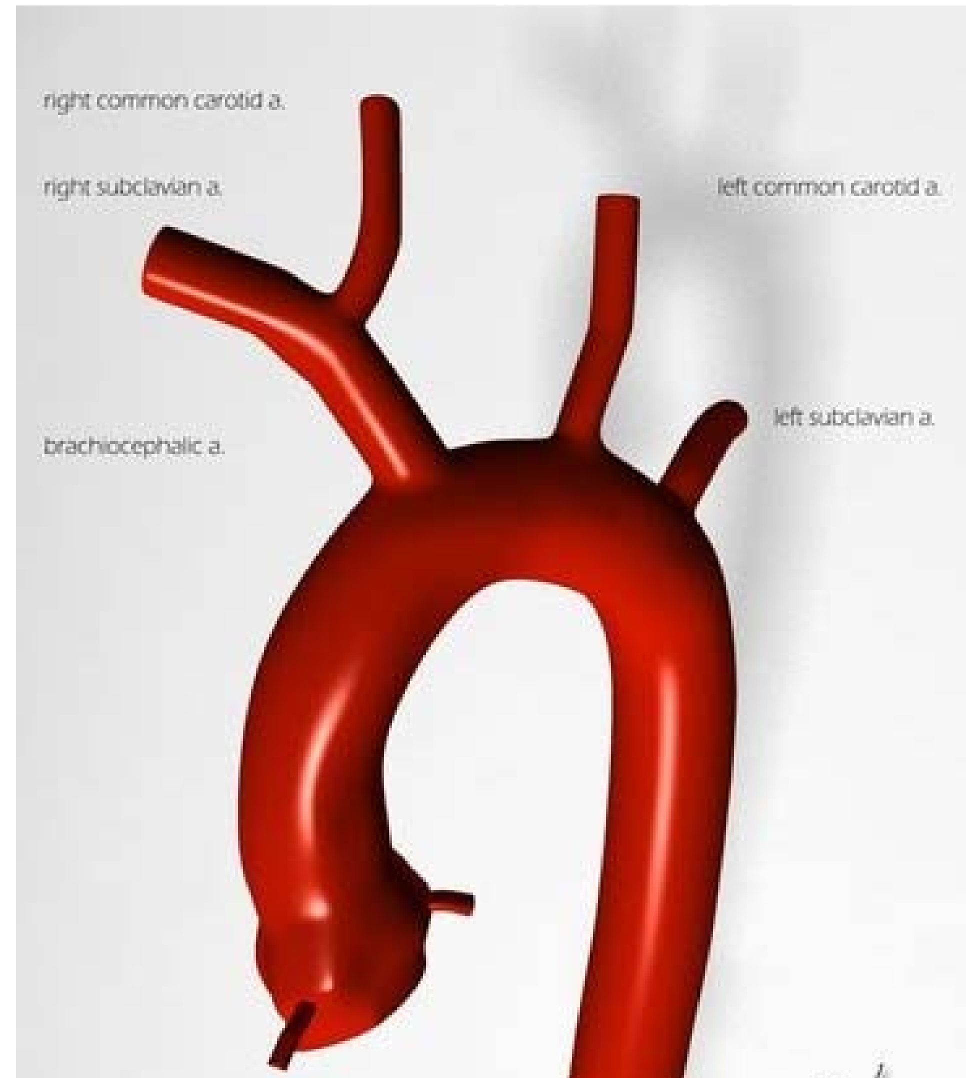




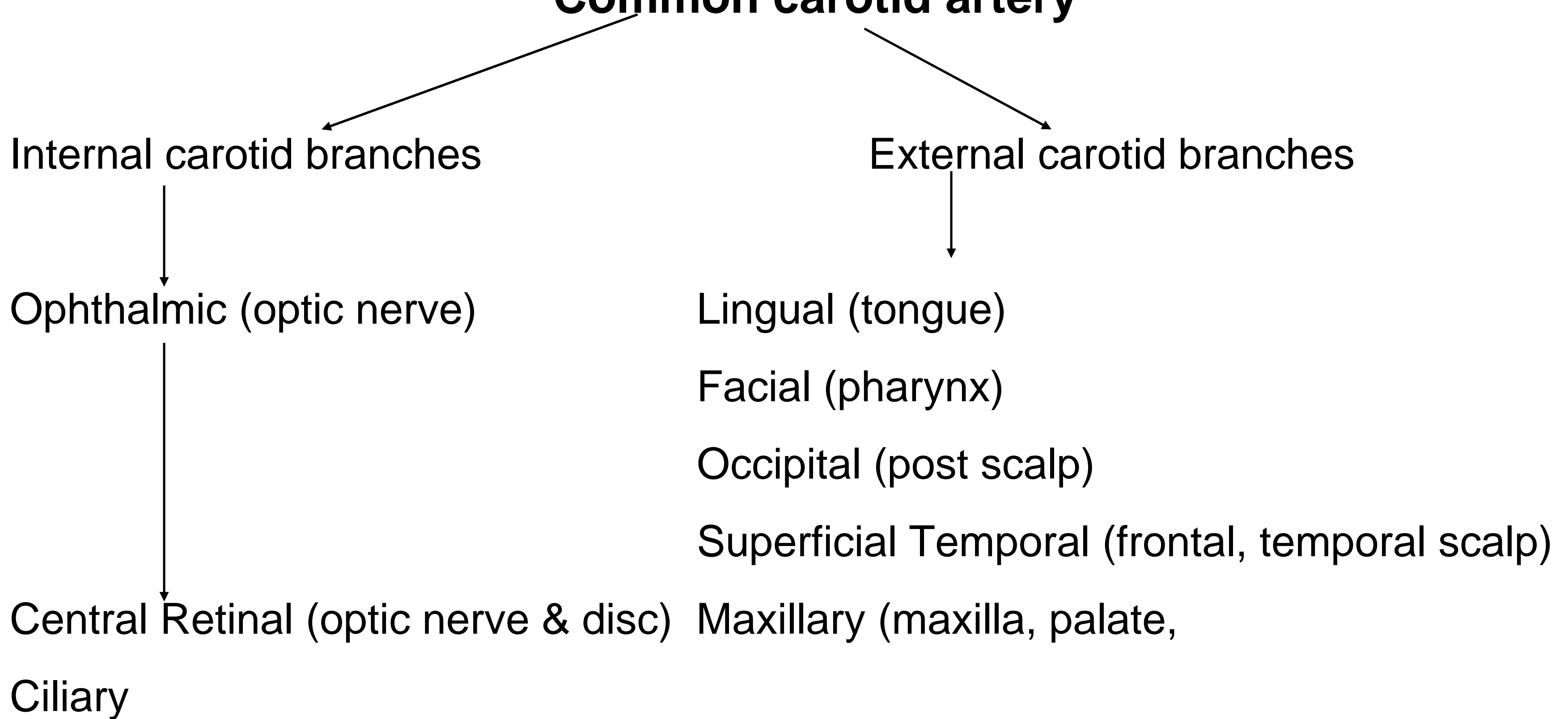
UCL
INM/UCL

Giant cell arteritis

- Chronic vasculitis of large and medium sized vessels
- Commonest vasculitis in elderly
- Prompt recognition & treatment
- > 50 years (mean age 72 years)
- Systemic and vascular involvement
- Branches of arteries originating from aortic arch



Common carotid artery



Suspect GCA

Symptoms

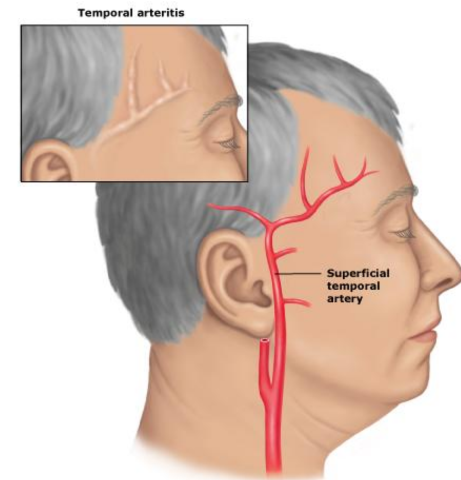
- Abrupt headache (unilat temporal area,
  +/- frontal, occipital or gen)
- Scalp tenderness
- Jaw & tongue claudication
- Visual sympt (+/- diplopia)
- Constitutional sympt
- PMR sympt
- Limb claudication

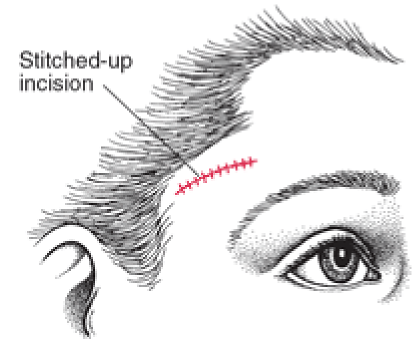
Examination

- Abn superf temporal a.
  – tender, thickened ,abn pulse, prominent
- Scalp tenderness
- Trans/perm visual loss
- Visual field defects
- AION
- CRAO
- Upper CN palsies
- Features of large vessel invol – vasc bruits, asym pulses

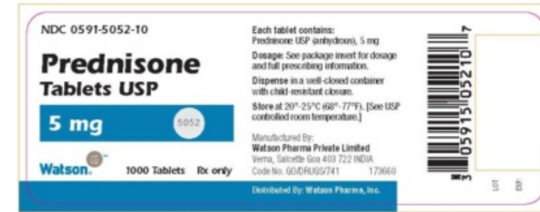
Temporal artery biopsy

- Suspected Temporal arteritis
- Should not delay prompt institution of high dose steroid
- Diagnosis - Gold standard – granulomatous inflam, intimal hyperplasia
- Prognosis –
  - + Bx - ↑ risk of neuro-ophthalmic Cx
  - id severity of intimal hyperplasia
- At least 1cm Bx, taken from symptomatic side





Treatment /1



- High dose steroid – started immediately on suspicion
  - **Uncomplicated gca** - no jaw claudication/visual distur
    - Prednisolone 40-60mg /day
  - **Complicated gca** - evolving visual loss or amaurosis fugax
    - IV Methyl Prednisolone 500mg – 1g x 3 days, before oral steroid
  - **Established visual loss**
    - Prednisolone 60mg / day (to protect contralat eye)
- Bone protection
- PPI – GI protection (to be considered)
- Low dose Aspirin – if no CI – reduce rate of visual loss & CVA

Treatment / 2

- **Steroid reduction** – if no clinical features, lab abn sug of active disease
  - Prednisolone 40-60mg until symp & lab abn resolve
  - Reduce by 10mg every 2 (– 4) weeks to 20mg
  - Reduce by 2.5mg every 2-4 weeks to 10mg
  - Reduce by 1mg every 1-2 months provided no relapse
- **Steroid sparing agent (Leflunomide / MTX)**

In favour of GCA / TA

- Headache & other symptoms respond (~100%)
- ESR / CRP – improve
- Positive TA biopsy

FB, 80 years, male

- 3/12 - unwell, pain base of neck and shoulders
- Unable to get off bed
- CRP 90, ESR 97
- ?? PMR
- Prednisolone 15mg x 2/12
- 50% improvement in symptoms, CRP 25, ESR 86

Progress

- Pitting oedema up to knees
- Loss of appetite, weight loss, fever, rigors
- Systolic murmur
- No splinter haemorrhages
- N/N anaemia (Hb 10)
- ESR 86
- Creatinine 156

- Features atypical of PMR - Refer Cardiology

Cardiology review

- Blood cultures - alpha haemolytic streptococcus (Penicillin sensitive)
- TOE - vegetation, moderate AS
- Infective Endocarditis
- Vancomycin (allergic to Penicillin) & Gentamicin x 4 weeks
- Further cardiac investigations - coronary angiogram

MB, 74 years, Female

- Generalised aching
- Stiffness in the shoulders, occ hips
- Malaise
- ESR 90
- Rx – Prednisolone for ?? PMR
- No improvement after 6/52
- Progress
- SPE - Paraprotein
- Referred Haematology

AA, 75 years, Female

- Generalised aching and stiffness
- Difficulty getting out of bed, malaise
- ESR 70, Hb 10
- ?? PMR
- Urinalysis + dipstix for blood
- Urine microscopy - microscopic haematuria
- USS abdomen - renal cell carcinoma
- Referred urology

ES, 70year, male

- Malaise, stiffness arms & legs, difficulty getting out of bed
- ESR 80, CRP 70
- SPE, TFTs, Ues, etc N.
- Treated with Prednisolone ?? PMR
- 100% improvement in symptoms
- But CRP 30, ESR 40 x several months
- Headaches, sudden loss of vision L. eye
- Ophthal AION - Repeat CRP 70, ESR 85
- Temporal artery biopsy positive

RS, 40 years, F

- 5 year h/o generalised aching, stiffness, poor sleep
- Gave up work
- Numerous trigger point tenderness
- ESR 15, CRP <5, other blood tests N.
- Imaging - USS - joints, Isotope bone scan N.
- ?? PMR
- Probably not PMR
- Fibromyalgia

GG, 65 year female

- Pain stiffness shoulders & hips
- ESR 70, CRP 55
- Prednisolone 15mg
- 80% improvement
- 6/12 later - swelling & pain in hands and feet - synovitis
- Prednisolone 30mg
- RF + / anti CCP +
- Rheumatoid arthritis
- Methotrexate

Polymyalgia Rheumatica

Epidemiology

- Older people, rarely <50 yrs
- GCA - 50% pts have PMR
- PMR - only 15% develop GCA
- Prevalence 1% (like RA)
- Incidence: N. Europe > South
  113/100,000 vs 13/100,000

Investigations

- Anaemia
- ↑ ESR, CRP, IL6
- 20% - N. ESR but ↑ CRP
- Auto antibodies - negative

Symptoms and signs

- Subacute or chronic onset
- Symmetric aching, pain & morning stiffnes
- Shoulders, hip girdles, neck, and torso
- 50 yrs of age
- Synovitis (non erosive)
- Bursitis
- Muscle strength usu normal (subj weakness)
- Syst features - malaise, fatigue, depression, anorexia, weight loss & fever

Differential diagnosis of PMR

- Early seronegative arthritis
- Rheumatoid arthritis
- RS3PE syndrome (remitting seroneg sym synovitis with pitting oedema)
- Bursitis/tendinitis
- Spondyloarthropathy
- CPPD disease
- Hypothyroidism
- Fibromyalgia
- Malignancy
- Multiple myeloma
- Infective endocarditis
- Inflammatory myopathy
- Vasculitis
- Parkinsons disease
- Hyperparathyroidism
- Drug-induced myalgias
- Depression

Investigations to exclude differential diagnoses

- TFTs
- Calcium
- Igs / SPE
- PSA
- CK
- RhF / CCP
- ANA / ENA / ANCA
- Urinalysis
- CXR

Treatment of PMR

- Prednisolone 15mg / day (20mg / day) x 4 wks

  12.5mg / day x 4 weeks
  10mg / day x 4 – 8 weeks
  9mg / day x 4 - 8 weeks
  (by 1mg every 4 – 8 wks)

- Bisphosphonate
- Adcal D3
- +/- PPI

Points in favour of diagnosis of PMR

- Response to steroid in 24 – 48 hrs
- Low dose steroid
  Prednisolone 10 – 15mg / day
- Bld tests for differential diagnoses - negative

Summary

- Rheumatological emergencies

  - Septic arthritis

  - Temporal arteritis / Giant cell arteritis

- Common monoarthritides – gout, pseudogout, reactive arthritis

- Polymyalgia