

Rheumatology Notes

Synovial Fluid analysis ①

Week 25

① Normal

- clear / ~~clear~~ colourless.
- WBC ≤ 200

② Non inflammatory Degenerative diseases

- Clear
- WBC $\leq 5000 / \text{mm}^3$
- Neutrophils $\leq 25\%$
- \uparrow Viscosity.

③ Osteoarthritis.

- Clear / straw coloured
- WBC $\leq 1000 / \text{mm}^3$
- Neutrophils $\leq 50\%$
- \uparrow Viscosity

④ Hge, Tumor Trauma, Haemophilia

- Bloody fluid
- WBC $\leq 10000 / \text{mm}^3$
- Neutrophils $\leq 50\%$
- Varied Viscosity

⑤ Acute inflammation

- Turbid fluid
- WBC³ 1-50000/mm³
- Neutrophils ~~2~~ 60%.
- ① ↓ viscosity

⑥ Sepsis/infection

- Turbid yellow fluid
- WBC³ 10-10000/mm³
- Neutrophils ≤ 90%.
- ↓ viscosity.

	Normal	Degenerative diseases	Osteoarthritis	Hge/human Trauma	Acute inflammation	Sepsis
Color	clear	clear	clear or straw colored	Bloody (xantho) chromatic	Turbid yellow	Turbid yellow
WBC	≤ 200	≤ 5000	≤ 1000	≤ 10000	1-50000	10-10000
Neut	—	≤ 25%	≤ 50%	≤ 50%	≥ 60%	≤ 90%
Visc	—	↑ viscosity	↑ viscosity	Altered (varied)	↓	↓

Arthritis

Def Inflammation of the joints

- Redness
- Warmth
- Pain
- Stiffness
- Swelling
- Loss of function

Classification

1 Monarthritides

Involving one joint only

Causes

- Trauma
- Osteoarthritis
- Septic arthritis
- Gout

2 Polyarthritides

Involving more than one joint

Causes

- Osteoarthritis
- Psoriatic arthritis
- Reactive arthritis
- Rheumatoid A.
- SLE
- Viral arthritis

3 Oligoarthritides

- Osteoarthritis
- Psoriatic arthritis
- Reactive arthritis
- Ankylosing spondylitis
- Crystal arthritis

Week 25

17

16

15

14

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1942 171

Ix Blood tests

- ②. ↑ ESR, CRP, platelets
- ①. ↓ Hb, WBC count
- ③. Rheumatoid factor +ve in 70%.

④. ANA factor +ve in 30%.

X-Ray

- ↑ Soft tissue swelling
- ↓ Joint space = narrowing
- Bone erosions in Late Stage ± subluxation

Week 25

Rx Oral drugs

- ②. NSAIDs
- ③. Oral steroids + PPI
- ④. Disease modifying drugs
 - ③ Sulphasalazine / methotrexate
 - ① azathioprine / cyclosporin

③. Intraarticular steroids

①. Physiotherapy.

④. Surgery joint replacement to relieve pain

2 Osteoarthritis

Features

- ① Commonest joint condition.
- ② F:M 3:1 ③ > 50 years
- ④ x Monoarthritis involving the big joints e.g. hip usually hip joint DIP swelling knee
- ⑤ Bouchard's node and Heberden's node are present
- ⑥ pain which worsens by the end of the day.

Symptoms

monoarthritis

polyarthritis

- pain on movement
- worsens by the end of the day accompanied by stiffness and joint instability.

- Heberden's node
- DIP
- MCP
- Thumb
- Cervical, lumbar V.
- Knee

Involved

Ix

- X-Ray → Marginal osteophytes
- Normal ESR → Subchondral sclerosis of cysts

Rx

1 Lifestyle modifications

- Exercise
- Weight reduction
- Physiotherapy, walking aids

2 Drugs

- regular paracetamol
- Topical NSAIDs
- intraarticular joint steroids
- Low dose TCA for night pain

3 Surgery

Joint replacement in end stage osteoarthritis



JUNE 23

1 Gout

2 Pseudogout or (CPPD)

3 Crystal Arthritis

a) GOUT

② Acute inflammation of the joint.

④ Intermittent joint pain

③ monoarthritis usually. ① M:F = 5:1

Causes

↑ Serum uric acid . Hereditary.

↓
gets into joints
and cause crystals.

Tumor lysis syndrome
Break down of cancer cells
with Rx of chemotherapy
and radiotherapy

It can occur in the absence of high serum Uric acid.

Risk factors

Alcohol abuse

Cytotoxics

diuretics

Infection

Leukemia

polycythemia
rubra vera

Surgery

steroid use

Trauma

Symptoms

① Sudden onset of joint pain with redness and swelling.

② monarthritis causing intermittent joint pain

③ most common sites ^{Tars} metacarpal pharyngeal of the big toe or ear pinna.

⑤ accumulation of uric acid in the urinary tract → stone formation

④ Urate deposits in pinna, tendons and joints.

Microscopy

Sensitivity

-ve Birefringent Crystals

- Unine
Blood
- ③ Joint aspiration for culture and
 - ② 24 hours urinary urate
 - ① Serum uric acid.

Rx

- NSAIDS e.g Endomethacin "Acute gout"
- if NSAIDS are contraindicated give Colchicine.
- if renal failure -ve NSAIDS
Colchicine

Use Steroids

Prevention

- Avoid certain Foods which contains a lot of uric acid e.g red meat tomatoes
- Avoid dehydration
- Avoid excess alcohol

- Avoid prolonged fasting.
- Lose weight

Allapurnal prophylaxis

if recurrent attacks

25

JUNE

2011

Saturday

14/6/2011

189 > 176

171 < 189

15/6/2011

السبت

10

CCPP



Pseudogout

Calcium
Pyrophosphate
 CaC_2O_4

- Acute inflammation of the joint.
- It could be acute or chronic

Risk factors

• Dehydration

• Illness

Week 26

hypocalcaemia

• Old age

• Osteoporosis

• Surgery

Acute

- monoarthritis
- Self limited

Chronic

- Polyarthritis
- cause destruction of the joints.

• Involves different joints wrist, hip, Knee

Ix

Joint aspiration for microscopy +ve Birfringent crystals
culture and sensitivity

Rx

Acute

Chronic

- NSAID
- Steroids

- methotrexate
- Hydroxychloroquine
- may prevent attack

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17/11/2019

sacrospinal
arthritis

[4] Spondylarthritis

Def

Chronic inflammatory disease of the spine and sacroiliac joints.

①

Classification

- psoriatic arthritis.
- Reactive arthritis.
- Ankylosing spondylitis.
- Enteropathic Spondyloarthropathy.

a) psoriatic arthritis

- It can present before the skin features of psoriasis.

Features

- Asymmetrical polyarthritis.
- Rheumatoid factor -ve unlike RA which is +ve

Sites

- 80% of the cases have nail changes (onycholysis)
- Sausage shaped fingers ✓✓✓
- Extensor aspects of the joints
- Spine.

Visual problems + GIT + urinary problems + Back pain

(b) Reactive Arthritis

- It is a sterile arthritis (1:4 patients)
- There is no inflammation but a reaction.

Causes

1. 4 weeks after Sexually transmitted diseases (Chlamydial arthritis), Urethritis, gastroenteritis (Shigella, Salmonella)

• part of Reiter's syndrome conjunctivitis
arthritis
Urethritis

Risk factors

- Chlamydia trachomatis
- Salmonella - Shigella
- Campylobacter • Yersinia.

Symptoms

- Iritis
- Affects large joints eg Lower Limbs
- GIT symptoms Back pain

Ix

- Serology
- Stool culture if diarrhea.
- ↑ CRP and ESR

X-Ray Periostitis with effusion

Rx

- NSAID's
- if failed > 6 months
- Steroids
- methotrexate
- Sulfasalazine.

Visual problems + GIT + urinary problems

Large joint + ↑ ESR

CRP = reactive arthritis

Tuesday

JUNE 28

2011

seronegative
arthritis

c) Ankylosing Spondylitis

Features

- Young male < 30 years
- Associated with HLA B27 gene

SS ①. Recurrent iritis (Ant uveitis) //

②. Carditis ③. IBD

④. Hip and Knee involvement.

⑤. Low back pain + morning stiffness //

⑥. progressive loss of spinal movements.

⑦. Kyphosis later

Ix . Clinical diagnosis

. X Ray

②. irregularity ①. erosion

③. Sclerosis ④. Squaring of vertebrae
(Bamboo spine)

Rx

• Exercise

• NSAID^s

• Autoimmune suppressant drugs

②. methotrexate ①. Cyclosporin

③. Sulphasalazine

d) Enteric Spondyloarthritis

- Related to IBD diseases.
- Resolves with the Rx of IBD.

⑤ Viral arthritis

- Preceded with viral infection eg URTI
- ± Rash on the body dt. viral infection.

⑥ Septic arthritis

Staph. aureus

- ① NB
- Infective of the joint.
 - Acute onset monoarthritis
 - Any acutely swollen joint is septic arthritis until proven otherwise.

- ③ SS
- Fever
 - Acute onset of joint pain
 - Redness - hotness
 - Tenderness
 - Softness - swelling
 - Loss of function

- ② Risk factors
- ① preexisting infection
 - ③ preexisting joint disease
 - ① Immunocompromised pt.

High Fever → Blood culture
Joint aspiration for microscopy culture and sensitivity

Rx IV antibiotics Flucloxacillin

Thursday

JUNE

30

2011

Autoimmune Connective Tissue disease

- 1) SLE
- 2) Scleroderma
- 3) Sjogren's disease
- 4) Idiopathic inflammatory myopathy
- 5) polyorchiditis
- 6) Bechet's disease.

SLE

Features

- F:M \approx 1
- Remission and relapse course

Risk factors

- Afrocaribbean and Asian race.
- 30-40 years
- Pregnancy.

SS

- CNS
- Face

Psychosis & Seizures

③ Malar Rash

② Discoid Rash.

① Butterfly rash of the face

⑤ photosensitivity

④ Oral ulcers.

• pleuritis/pericarditis

• Renal disorders proteinuria.

• Serositis / Arthritis.

• Haematological disorders

② \uparrow platelets

③ ~~Lymphoma~~ Lymphopenia

④ ~~Leukemia~~ Leukopenia

① haemolytic anaemia.

Ix

• AntiDNA antibodies +60%
Specific for SLE

• Drug induced
SLG
Antihistone
Ab

• ANA +ve 95%.

• Anti sm ^{smooth} Ab 20-30%.

• FBC • ^{hemolytic} Anaemia • ↑ platelets
• ↓ Blood cells

- Rx
- ①. Refer to haematologist
 - ②. NSAID^s and Sun creams
 - ③. High dose Prednisolone
 - ④. Hydroxychloroquine
 - ⑤. Cyclophosphamide if renal involvement
 - ⑥. Azathioprine for steroid sparing.

CREST Syndrome

- Calcinosis
- Raynaud's phenomenon
- Oesophageal dysfunction
- Sclerodactyly.
- Telangiectasia = reddish spots on the body.

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Scleroderma - Hard skin

Etiology

- Autoimmunity.
- Collagen excessive production and deposition
- Inflammation ① • Vascular damage

Types

	Limited Scleroderma	Diffuse Scleroderma
Incidence	70% of the cases	30% of the cases
Onset	Slow onset Slow progression	Rapid onset Rapid progression
Distribution	• Face • Forearm • Lower leg up to knee	• Face ① • Forearm ② • upper arm ③ • Lower leg ④ • Thigh ⑤ • Trunk ⑥ up to knee
Features	• milder disease • Slow onset • slow progression Symptoms are relatively unnoticed until internal complications occur • Less skin involvement	• more severe disease. • Rapid Onset • Rapid progression Skin involvement + Raynaud's Thickening phenomenon Skin changes can reemit within few years with skin softening and significant impairment in mobility. • more common int. organ involvement

Internal organ involvement

2011

JULY

2

Features

b/ Common Symptoms

- Skin hardening
- Oesophageal symptoms
- Raynaud's phenomenon

a/ Non specific symptoms

- Fatigue
- Musculoskeletal pains
- Hand swelling

General features

- Fatigue
- Weight loss
- musculoskeletal pain

1 Skin features

Face and mouth

- Tightening of facial skin

- Dry or itchy skin

↓ hair distribution over affected skin

- Salt and pepper appearance

dt. areas of hypo. and hyperpigmentation

- Telangiectasia
- Tight Lips (microstomia)

swelling of the fingers and toes (Common early sign)
= sausage like fingers

- Pitting oedema and ulcers at the finger tips

Sclerodactyly

Joint contracture and Limiting of movement

→

- pt is unable to make fist or
place the palmar surfaces together

• Raynaud's phenomenon

- most common symptom

- Raynaud's phenomenon

+ Butterfly Eggs

= Scleroderma
Cardinal sign

Calcosis

Lumps or nodules of chalky materials that can break through the skin

② Musculoskeletal features

- Joint pain and swelling
- Myalgia dt. inflammatory myopathy.
- Restriction of joint movement
- Contracture and muscle atrophy dt. skin sclerosis
- Tendon friction rubs palpable over the flexor and extensor surface.

③ GI features

Oesophagus

- heartburn, oesophagitis
- Oesophageal Scarring, dysphagia

Stomach

delayed gastric emptying
Leading to fullness
after meals

Intestine

- ↓ Colonic mobility Constipation
- ↓ Small intestine mobility
- bloating
- Bacterial overgrowth.
- diarrhoea
- malabsorption • malnutrition

③ Pulmonary Features

- pulmonary hypertension 10-15% of patients
- pulmonary fibrosis

• 75% of patients

• Causes restrictive lung disease

SS • Cough • dyspnea • Coarse basal
Crackles

I_x Antibodies

- ANA 95% of the cases
- Non specific

John Birps

Other Antibodies

1) Anticentromere antibody (Localized Scleroderma)

- Specific for Localized Scleroderma
- ↑ risk of pulmonary HTN

2) Antifibrillain antibody

associated with

- Pulmonary HTN • Heart involvement
- Kidney involvement • myositis

3) Anti PM-Scl antibody

in pt. with Myositis + Scleroderma

④ Anti RNA polymerase III antibodies Diffuse scleroderma

- specific for diffuse Scleroderma
- Kidney involvement

⑤ Antitopoisomerase (Scl 70) diffuse scleroderma
with Lung fibrosis + Renal disease

⑥ Anti-U1RNP (nRNP)

with joint involvement + overlap syndromes

Rx

- Oral steroids eg prednisone
- Cyclophosphamides
- Nifedepine Raynaud's phenomenon

N.B

Drug induced
Lupus
Symptoms

SLE

= Symptoms

+ Drug intake
history

Dx Anti histone antibody

Polymyositis and Dermatomyositis

Fractures

- ④ Proximal muscle weakness + facial oedema
- ① Dysphagia
- ② Respiratory muscle weakness
- ③

SS

Systemic Signs

- Retinitis
- Dysphagia
- Lung involvement
- Myocarditis
- Arrhythmias
- Gut dysmotility
- Polyarthritides
- pr. is unable to stand up from chair
- Calcification
- Fever + Raynaud's phenomenon

Skin signs (Dermatomyositis mainly)

Hand

- Rough cracked skin on the lat. palmar aspect of hands and fingers.
- Red papules over extensor surface of phalanges

Back Macular rash over back (shawls sign) and shoulder

Ix

- Muscle Biopsy
- muscle enzymes ↑ ALT, CK
- unlike in case of giant cell arteritis
- Polymyalgia Rheumatica

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Friday

Antibodies Anti MI-2, Jo



Rest - prednisolone

Immunosuppressive drugs

cyclosporin
methotrexate
Azathioprine

2011

JULY

8

Vasculitis

Inflammation of the vessels' wall.

Classification

① Small vessels vasculitis

② Medium vessels vasculitis

- polyarteritis Nodosa (PAN)
- Kawasaki disease

③ Large vessels arteritis

- Giant cell arteritis
- Takayasu disease

Features

- Can affect any age

SS

General

- Fever - malaise - Arthralgia
- Weight Loss - muscle pains (myalgia)

CNS

- psychosis - confusion - ↓ cognition
- Fits - hemiplegia

Eye

episcleritis, visual loss

18/03/21

ENT Epistaxis, Deafnesspulmonary Dyspnea, HaemoptysisCardiac • Loss of pulse

• Angina and myocardial infarction

• Cardiac failure

GIT • Abdominal pain • malabsorptionRenal • Haematuria • proteinuria
• Acute or chronic renal failureSkin • purpura • ulcer • digital gangreneDi Clinical + Histological + AngiographicalRx • High dose prednisolone

• Cyclophosphamide

• Methotrexate, Azathioprine major organ
involvement

Giant cell Arteritis

Features

- Common in elderly (♀ pt.)
- pt > 50 years (rare before 55 years)
- Large vessel arteritis
- Usually associated with polymyalgia Rheumatica (25%)

Symptoms

- Unilateral sudden loss of vision if not Rx pt may lose other eye
- Unilateral headache worsening on hair combing
- pain on chewing
- Weakness in the upper limb
- Weight Loss

Ix

- ↑ ESR - Temporal a. Biopsy
- initial Definitive

Rx

- Admit
- Do ESR
- IF ↑ start Rx with IV methylprednisolone immediately then do temporal a. Biopsy For 3 days
- Once Rx is confirmed with oral temporal a. Biopsy start pt on high dose prednisolone for 2-3 years
- Give Bisphosphonates to guard against osteoporosis
- Reduce the dose gradually once recovery is complete

N.B

Aspirin can be used with steroids

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N.B] Side Effect of Long term High dose steroids

1] DM Rx Short acting insulin

Once in the morning
if pt is given
steroids once in
the morning

Twice a day
if steroids are
taken more than once
in the day

2] Hypertension Rx monitor the Blood p. + proper Rx

3] Osteoporosis Rx Biphosphonides

4] Cataract Rx Regular eye check - Surgery

5] GIT Bleeding Rx PPI
(peptic ulcer)

6] Suppressed immune system → ↑ risk of fungal inf.

7] Addison's disease.

8] Cushing disease.

Takayasu disease

Aortic Arch Syndrome

Features

- ♀ pt. . 20-40 years
- Large vessel vasculitis
- Idiopathic narrowing of carotid a.^s, subclavian a.^s, renal a.^s

Week 28

Symptoms

② CNS

- Vertigo
- Syncope
- Fits
- hemiplegia

③ Eye

- Atrophy of iris
- cataract
- visual loss

① General

- Weight loss
- fatigue

④ Heart

- Hypertension
- Systolic murmur

Ix

- ESR ↑ (> 40 mm/hr)
- Arteriography

Rx

- prednisolone
- methotrexate

Criteria

- ≤ 40 years
- Claudication of extremities
- ↓ pulsation on one or both brachial a.
- Difference of larmg p. between 2 arms
- Bnwt

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(Polyarteritis Nodosa) PAN

Features

- middle vessels vasculitis
- Causes ~~aneurysms~~ and thrombosis of middle sized vessels leading to infarction of the supplied organ.

Symptoms

General : Fever . Weight Loss . Arthralgia

CNS : psychosis . fits . stroke

Heart : Angina, myocardial infarction

Renal : Glomerulonephritis

Skin changes : Urticaria, Livedo reticularis

Ix : ESR . Angiography . ANCA

Rx : Steroids . cyclophosphamide

N.B

ANCA +ve

- Glomerulonephritis
- Wegener's granulomatosis
- Microscopic polyangiitis
- Churg Strauss Syndrome

ANCA -ve

- Henoch Schonlein purpura (HSP)
- Good Pasture's Syndrome

PLASMA ANTIBODIES AND THEIR COMMON CONDITIONS

1. Rheumatoid Factor

- Scleroderma
- Sjogren Syndrome
- Rheumatoid arthritis
- Juvenile Arthritis

- SLE

1. ANA (Anti Nuclear Antibodies)

- SLE
- Sjogren
- Scleroderma

1. Anti Histone: Drug induced SLE

1. Anti- Double Stranded DNA → very specific for SLE

1. Anti- Phospholipid Antibodies: Anti-phospholipid Syndrome and SLE

1. Anti-Centromere Abs: Limited Systemic Sclerosis

1. Anti- Ro: SLE, Sjogren, Systemic Sclerosis

1. Anti-SM: SLE

1. Anti-Jo and Anti MI-2: Polymyositis and Dermatomyositis

1. Anti SLE 70: Diffuse Systemic Sclerosis

JULY



N.B

① Pain and swelling
of both knees
and ankles

+

② Nodular rash
over the shin
(Erythema Nodosum)

= Sarcoidosis

Ex X-Ray Bilat. hilar lymphadenopathy ③

① + ② + ③ = Löfgren's Syndrome

Churg-Strauss syd
+ trad of vasculitis
← eosinophilia
Asthma

Good pasture disease! Ass with lung & kidney involvement
Anti GBM antibodies present at glomerular BM

CK ↑ → Polymyositis

CK N → Polymyalgia Rheumatica

Rheumatology Rx

RA

- ① physiotherapy
- ② Drugs
 - Avoid work
 - NSAID's
 - steroids + PPI
 - Disease modifying drugs
- ③ Intraarticular steroids inj.
- ④ Surgery Joint replacement

• Azathioprine
• cyclosporin
• methotrexate
• Sulphasalazine

OA

- ① Life style modifications
 - Exercise
 - weight loss
 - physiotherapy
 - walking aids
- ② Drugs
 - Long term paracetamol
 - Topical NSAID's
 - Intraarticular steroids
 - Small dose TCA for night pain
- ③ Surgery Joint replacement

Gout

- NSAID's if contraindicated Colchicine
- Renal failure → Steroids

Pseudogout

- Acute NSAID's, steroids
- chronic steroids, methotrexate, hydroxychloroquine

Reactive Arthritis

- NSAID's No response → Steroids
- 6 months
- methotrexate
- Sulphasalazine

Anchylising spondylitis

- physiotherapy
- NSAID's
- steroids
- Disease modifying drugs

Sepsis arthritis

Antibiotics e.g. Flucloxacillin

SLE

- Refer to haematologist
- Azathioprine
- high dose prednisolone
- Biphosphonates if renal involvement
- NSAID's + sun creams

Scleroderma

- High dose steroids
- cyclophosphamide
- Nifedipine for Raynaud's phenomenon

Polymyositis Dermatomyositis

- Rest
- NSAID's
- prednisolone
- Disease modifying drugs

Vasculitis

- High dose prednisolone
- Cyclophosphamide
- Disease modifying drugs