COMMON RHEUMATIC DISEASES CONNECTIVE TISSUE DISEASES

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CONNECTIVE TISSUE DISEASES CTD

. Diseases which affect tissue that supports,binds,and protect organs .

. Two major proteins affected :

- **Collagen**
- **Elastin** major component of tendons , ligaments and skin

CTD

- >100 Diseases.
- Most body systems may be affected.
- Most share common symptoms[joint inflammation,fever, rash,weakness,etc]
- Etiology unknown [genatic,enviroment,autoimmunity]
- All male and females affected
- All countries.

Clinical presentation

APPROPRIATE RHEUMATOLOGIC HISTORY

- Pain [joint,muscles,limbs]
- Stiffness [morning]
- Loss of function [limbing]
- Systemic illnes [fever-rash-weakness-mucous membrane involement-etc]

EXAMINATION

- FULL CLINICAL EXAMINATION
- Vital signs
- Growth parmeter
- Arthritis[MSK]
- Rash [types]
- Other related systems.

Juvenile Idiopathic Arthritis
JIA

Abbreviations before : J.C.A. in Europe
J.R.A. in U.S.

Features:

. Onset under **16** years
. Persistent arthritis in one or more joints
. Duration
- three months or longer (Europe)
- six weeks or longer (U.S.)

4. Exclude other defined causes of arthritis in childhood .

Juvenile Idiopathic Arthritis: Common Exclusions

RHEUMATIC DISEASE	
Post-infectious reactive arthropathy	Psoriatic arthritis
Ankylosing spondylitis	Scleroderma
Reiter's syndrome	Mixed connective tissue disease
Vasculitis syndromes	Hepatitis B and C
Systemic lupus erythematosus	Inflammatory bowel disease [ulcerative colitis-crohn dise.,]
Rheumatic fever	Sarcoidosis

Juvenile idiopathic arthritis
common exclusions
non rheumatic causes of arthritis

Growing pains	**Neoplasm**
Benign hypermobility syndrome	Hematological
Fibromyalgia[fibrositis]	Psychogenic arthritis
Osteomylitis	Trauma
Pyogenic arthritis	Slipped capital femoral epiphysis
Osgood-Schlatter disease	Genatic disorders
Patellofemoral pain syndrome[chondromalacia patellae]	

Classification of Juvenile Idiopathic Arthritis[ILAR]

1. Systemic arthritic	10% - 20%
2. Oligoarthritis	50% - 60%
3. Polyarthritis (RF negative)	20% - 30%
4. Polyarthritis (RF positive)	5% - 10%
5. Psoriatic arthritis	2% - 15%
Enthesitis-related arthritis[ERA] [sites where tendons and ligaments insert into bone.]	1% - 7 %
7. Undifferentiated arthritis	-

* ILAR: International League Against Rheumatism

Systemic Arthritis (ILAR)

1. **Arthritis in ≥1 joint [for ≥ 6 weeks].**

   - with or preceded by

2. **Fever ≥ 2 weeks, quotidian (≥ 390 returns to ≥ 370C),documented daily for ≥3days**

   - with

3. **At least one of the following:**

   - **Evanescent[not fixed] erythematous rash.**
   - **Generalized lymph node enlargement.**
   - **Hepatomegaly and/or splenomegaly.**
   - **Serositis.**

Oligoarthritis

Arthritis in 1-4 joints in the first six months of oncet.

Types

-Persistent disease [1-4 joints throughout the disease]

-Extended disease [□5 joints after the first six months].

Polyarthritis (RF negative)

Arthritis affecting ≥ 5 joints in the first six months of disease;

- RF negative.

Polyarthritis (RF positive)

Arthritis affecting ≥5 joints in the first six months of disease;

-Positive RF in 2 readings 3 months apart, during the first six months.

Psoriatic Arthritis

Arthritis and psoriasis

OR

Arthritis and at least two of:

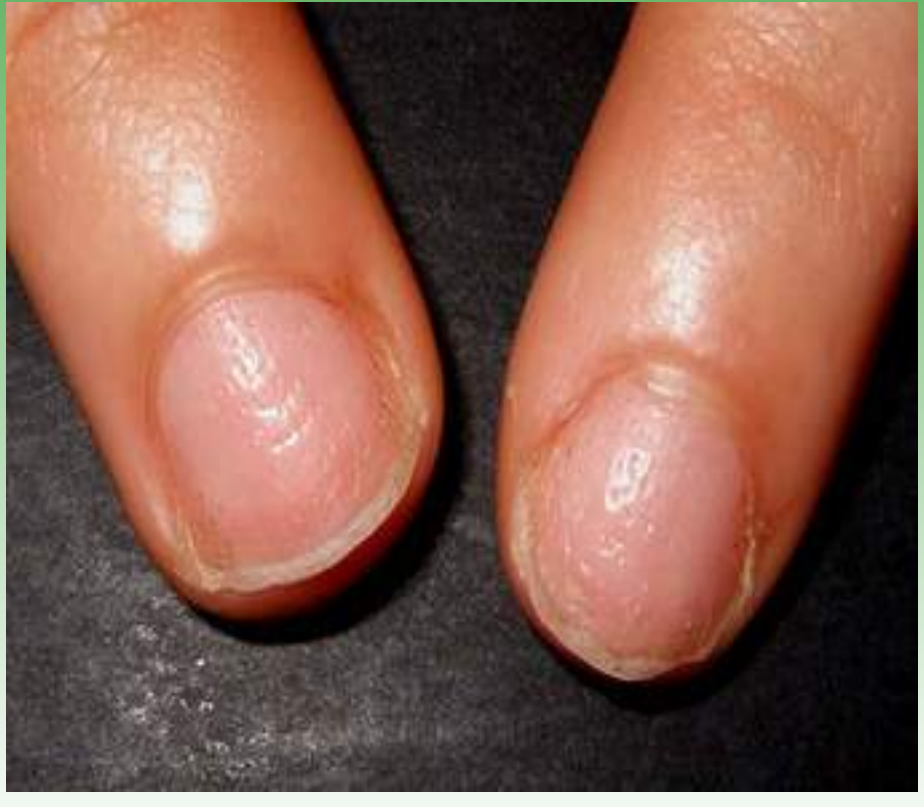
1) Dactylitis,

2)Nail pitting or onycholysis,

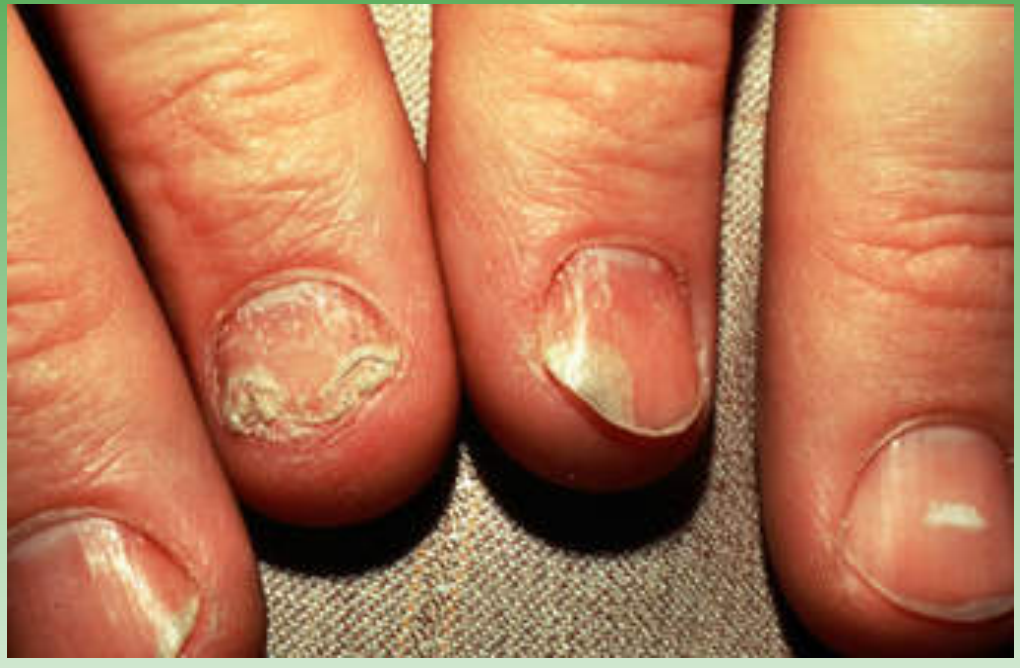
3) Family history of psoriasis.

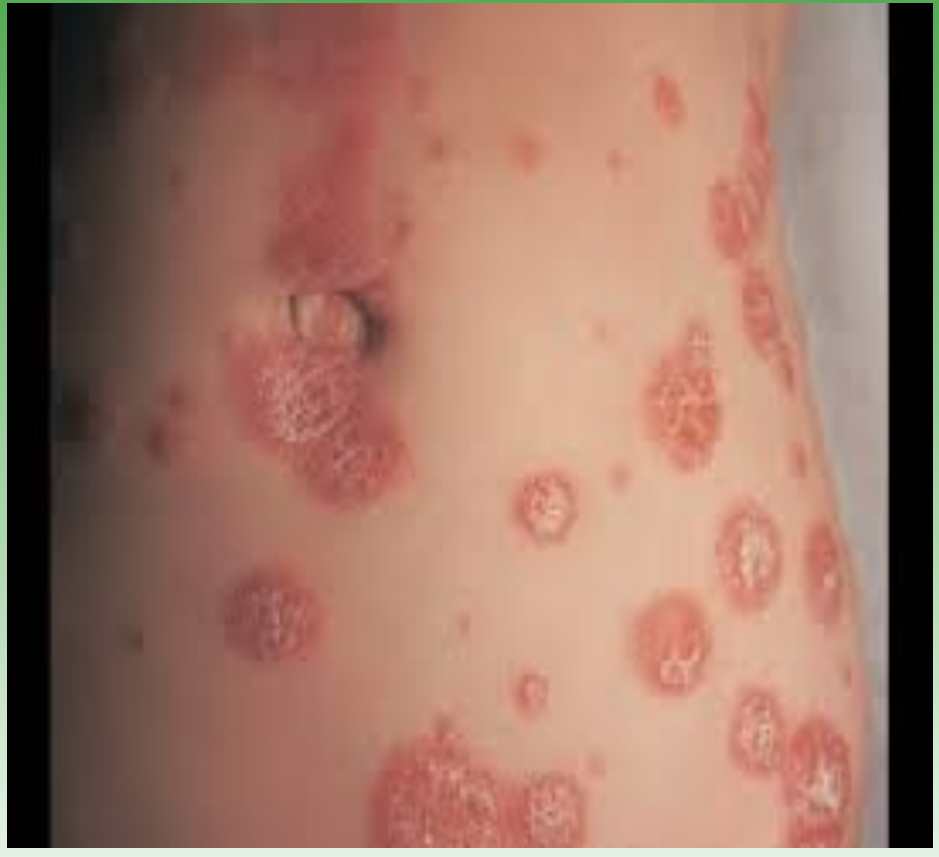
DACTYLITIS

Nail pitting



Onycholysis





Enthesitis Related Arthritis

Arthritis and enthesitis,

OR

arthritis or enthesitis with ≥ 2 of :

[1]Sacroiliac joint tendernes and/or inflammatory lumbosacral pain.

[2] HLA-B27

[3]Family history of HLA-B27associated disease

[4] Acute anterior uveitis

[5] Oncet of oligoarthritis in a boy aged ≥8 years.

Undifferentiated Arthritis

Arthritis that does not fulfills any criteria.

OR

Arthritis that fulfills two OR more criteria.

Pathology

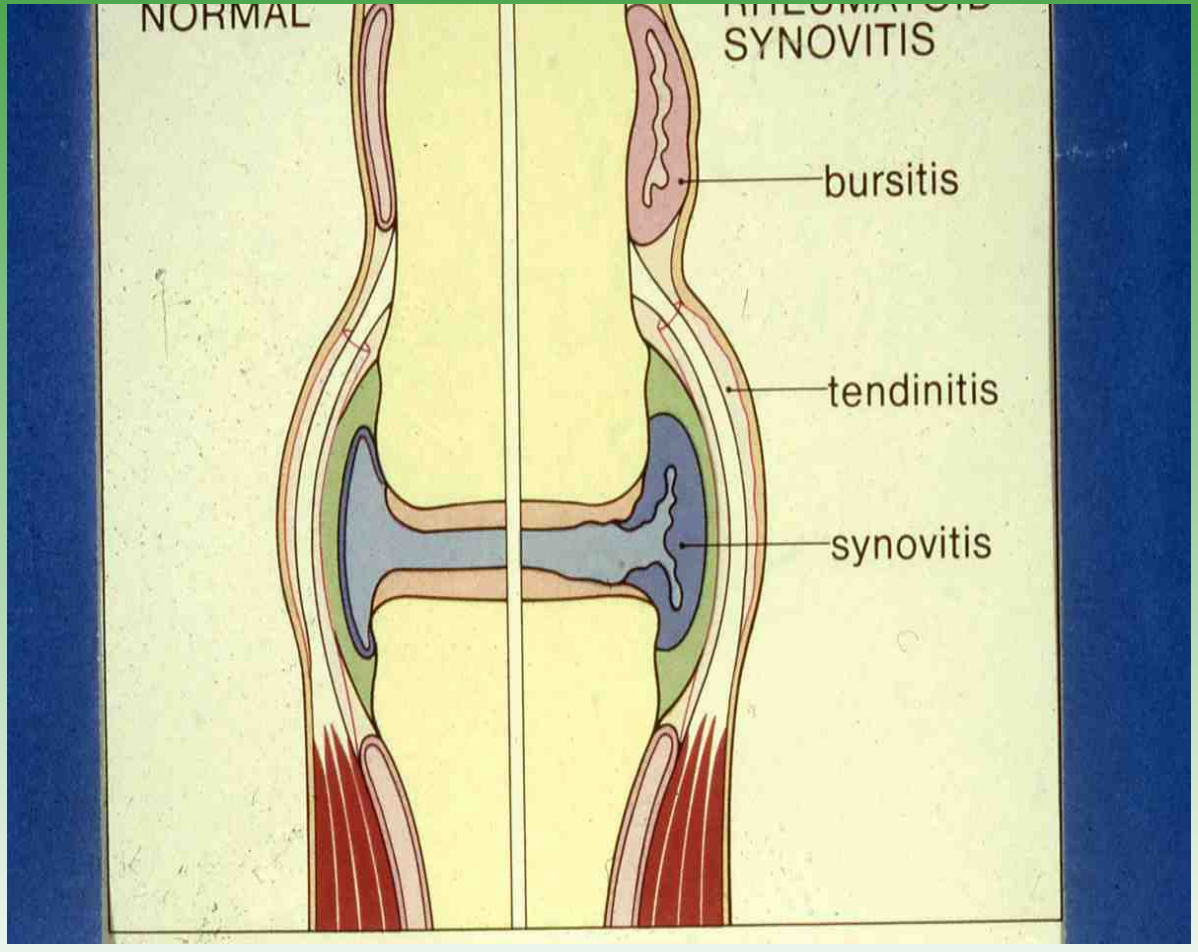
Serositis

1. Synovitis
2. Tendenitis
3. Bursae

Serositis of pleura and pericardium

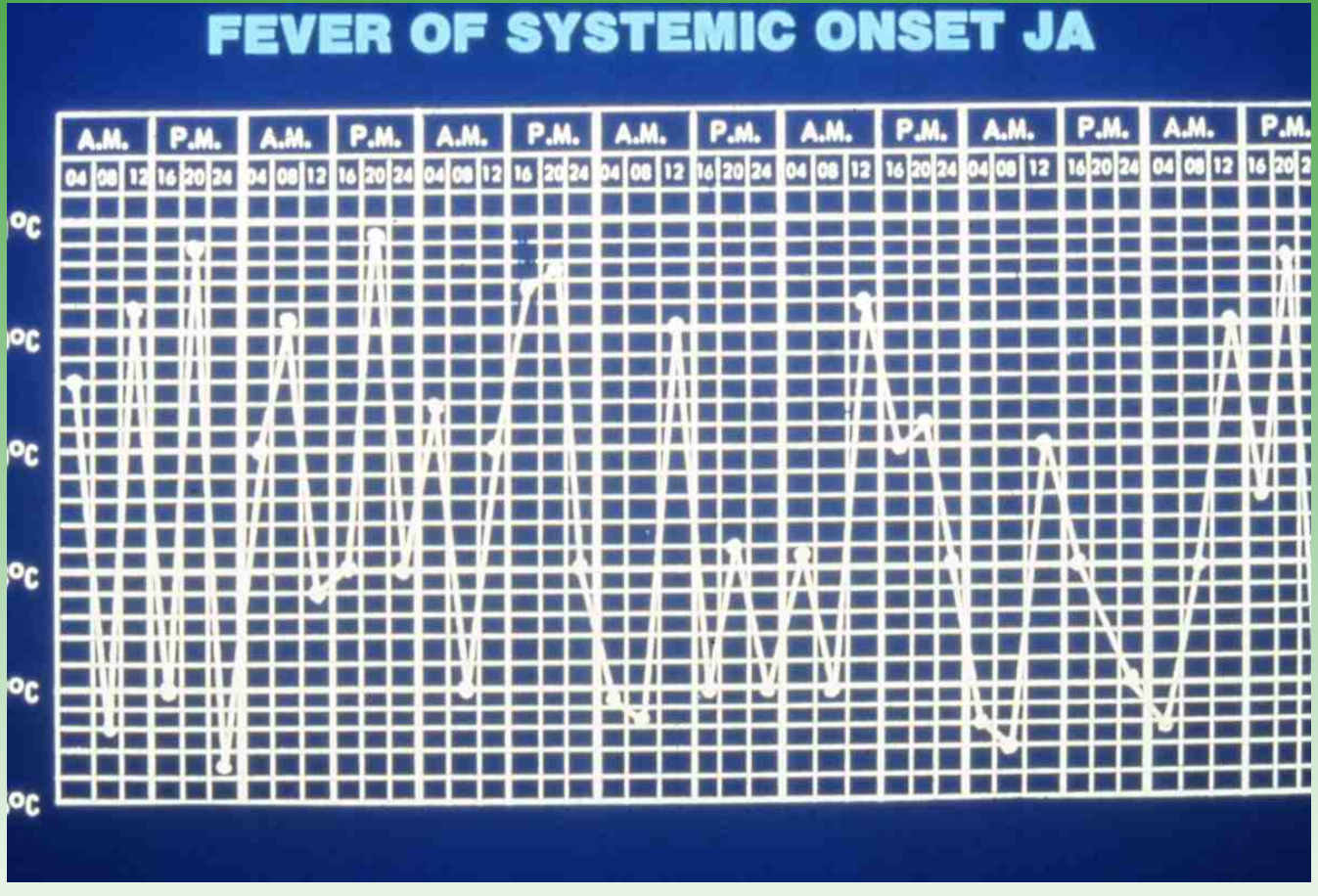
Subcutaneous Nodules

Vasculitis


NORMAL
SYNOVITIS
bursitis
tendinitis
synovitis

Systemic onset JIA 20%

Age at onset	**16** years or younger
Sex ratio	Equal or boys > girls
Articular manifestations	Early – arthritis that may be transient Later – chronic arthritis that is usually polyarticular
Extra-articular manifestations	High intermittent fever; rash;lymphadenopathy, myalgia; serositis; organomegaly;
Laboratory tests	leukocytosis:anemia
Prognosis	Severe arthritis in **25%**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P.M.
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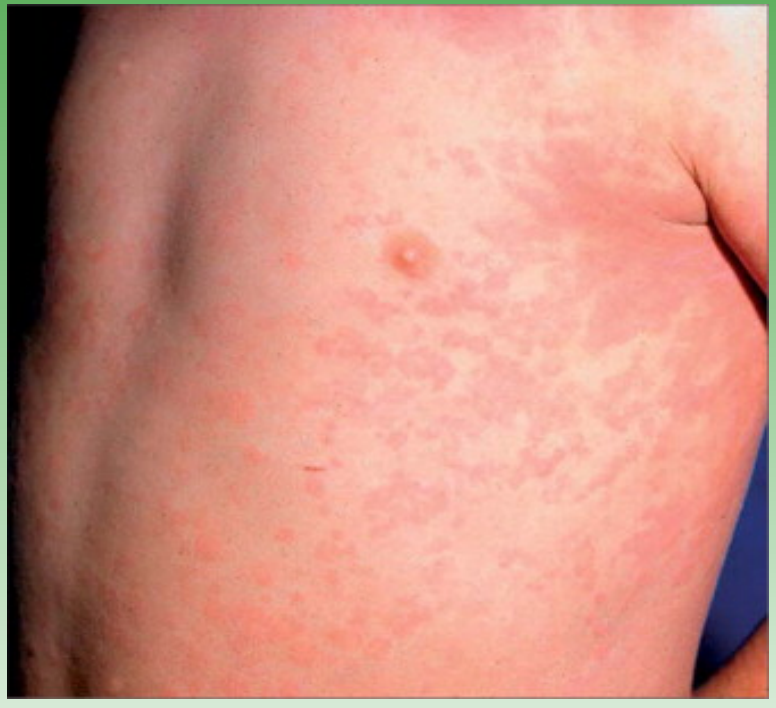

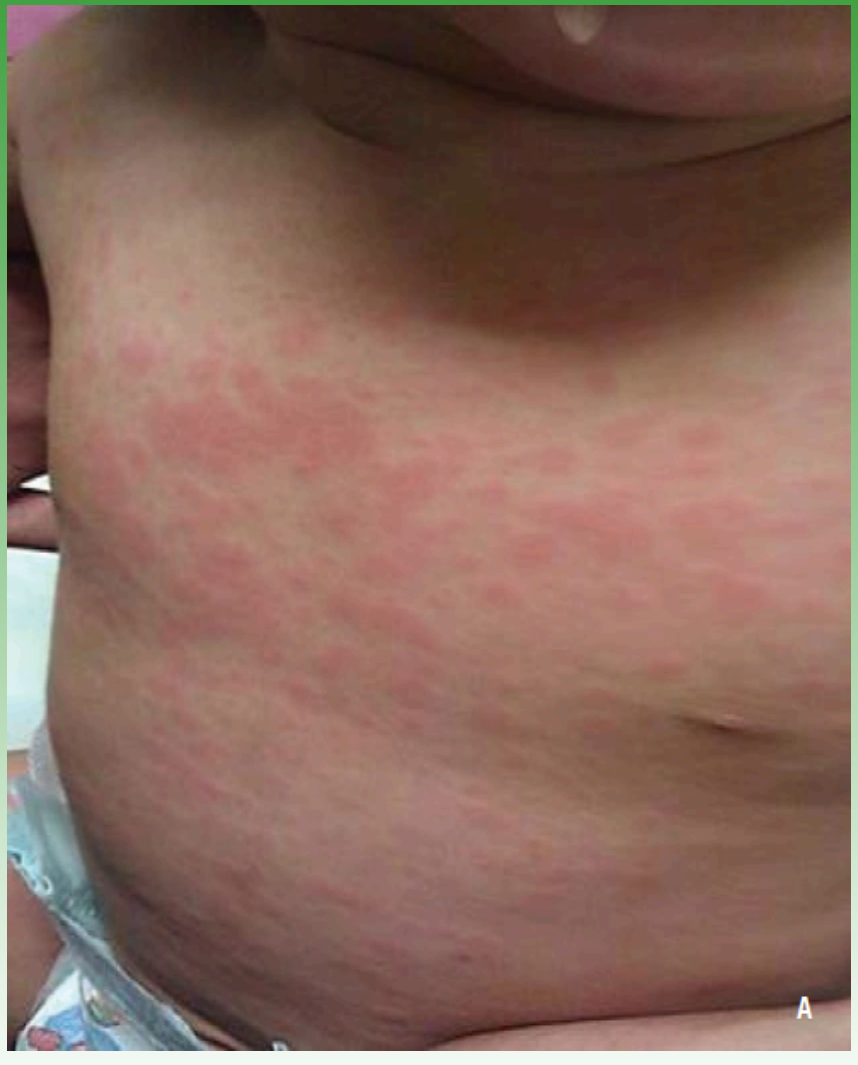
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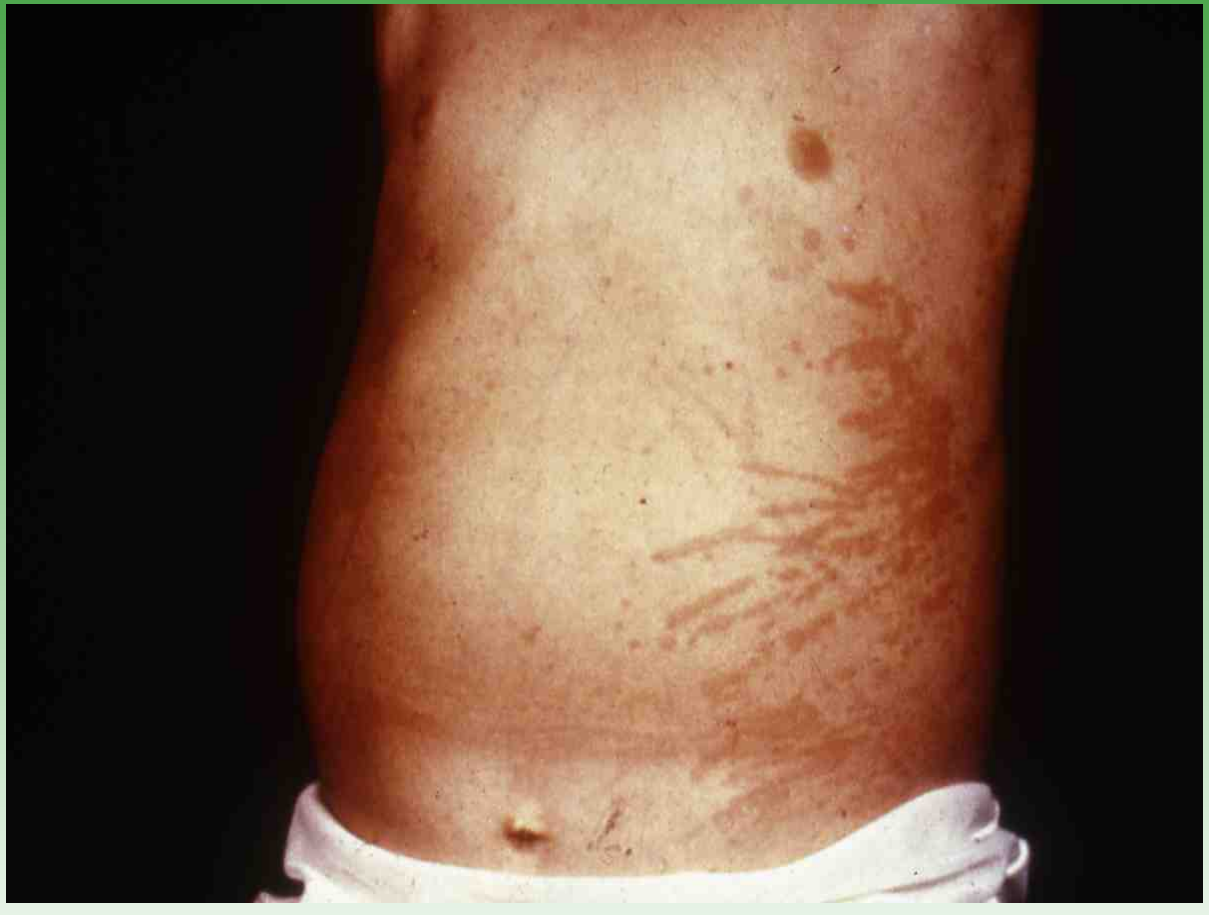
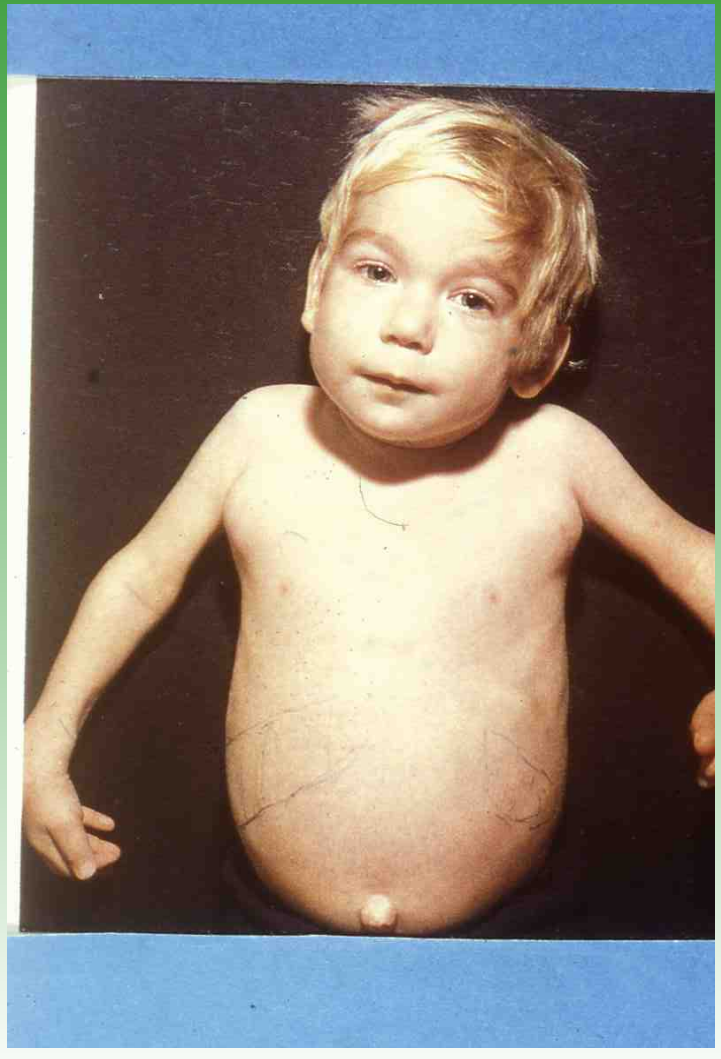
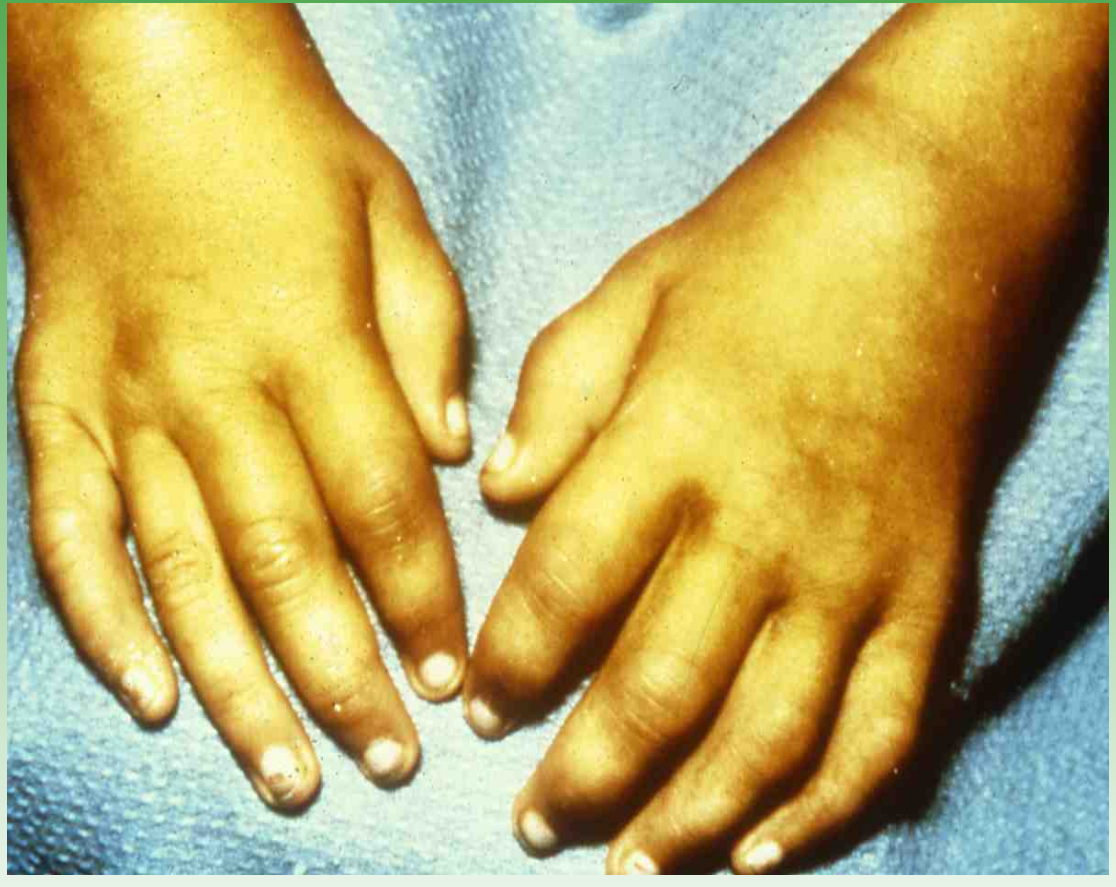
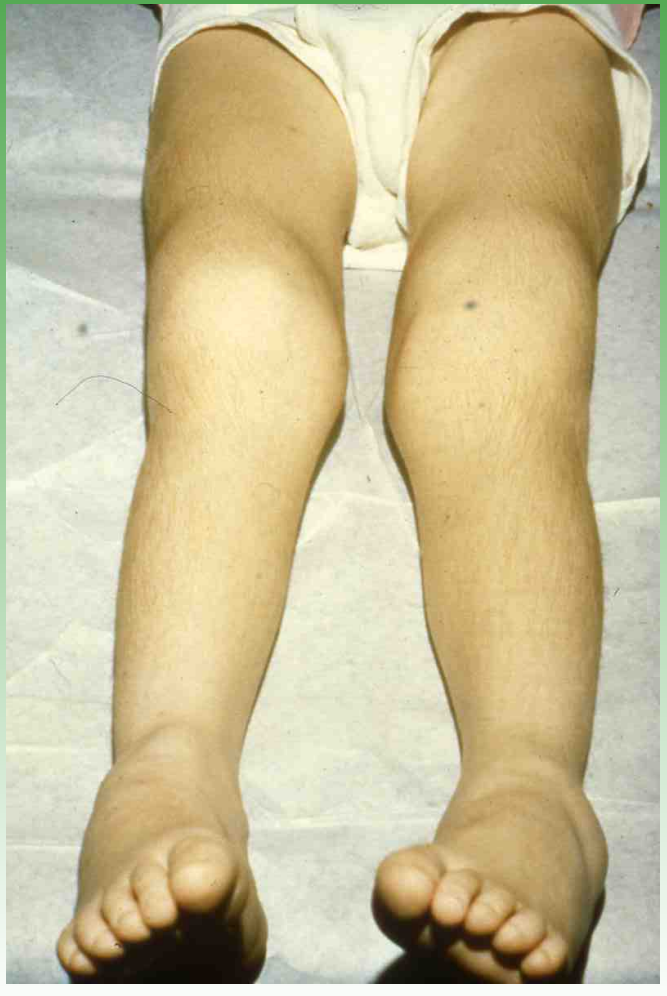


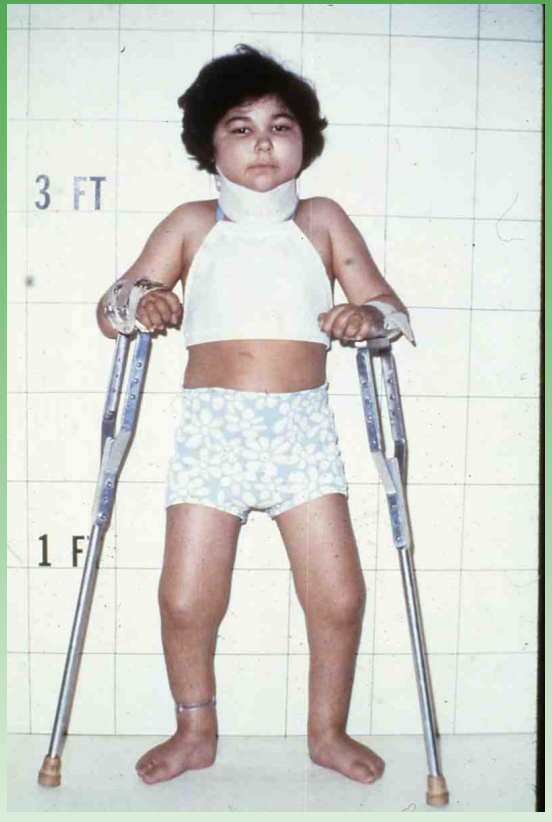


Polyarticular JIA 30%

RF-ve (25%)		RF+ve (5%)
16 years or younger	Age at onset	**8** through **16** years
Girls	Sex predominance	Girls
Few	Extra-articular manifestations	Nodules, vasculitis
25% of patients	ANA	**50%** of patients
?	HLA	DW4/DR4
Severe arthritis **10-20%**	Prognosis	Severe arthritis **>50%**



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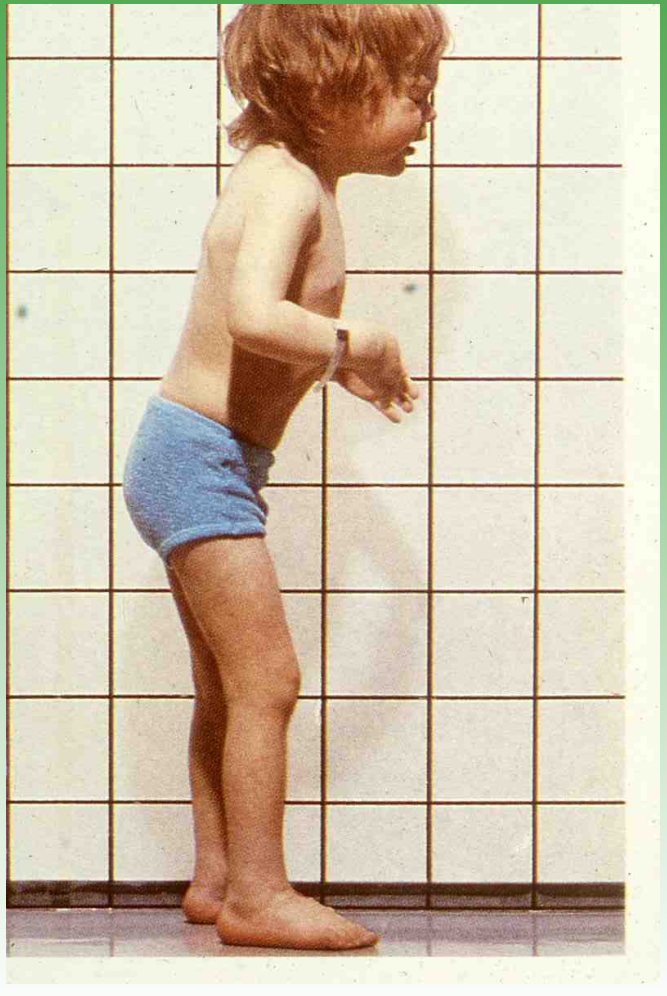

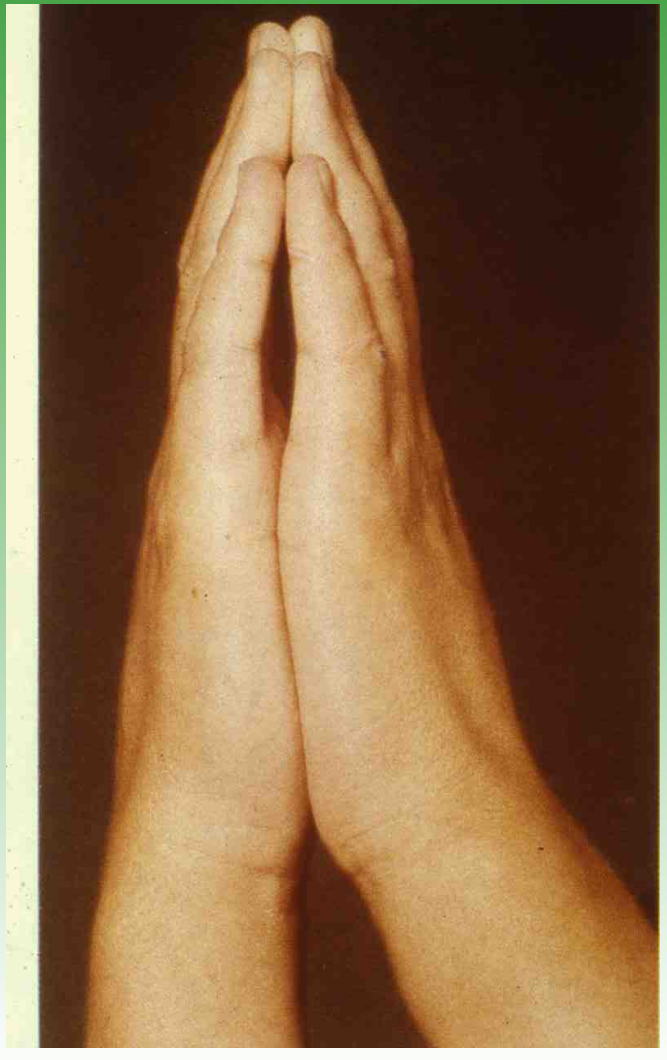

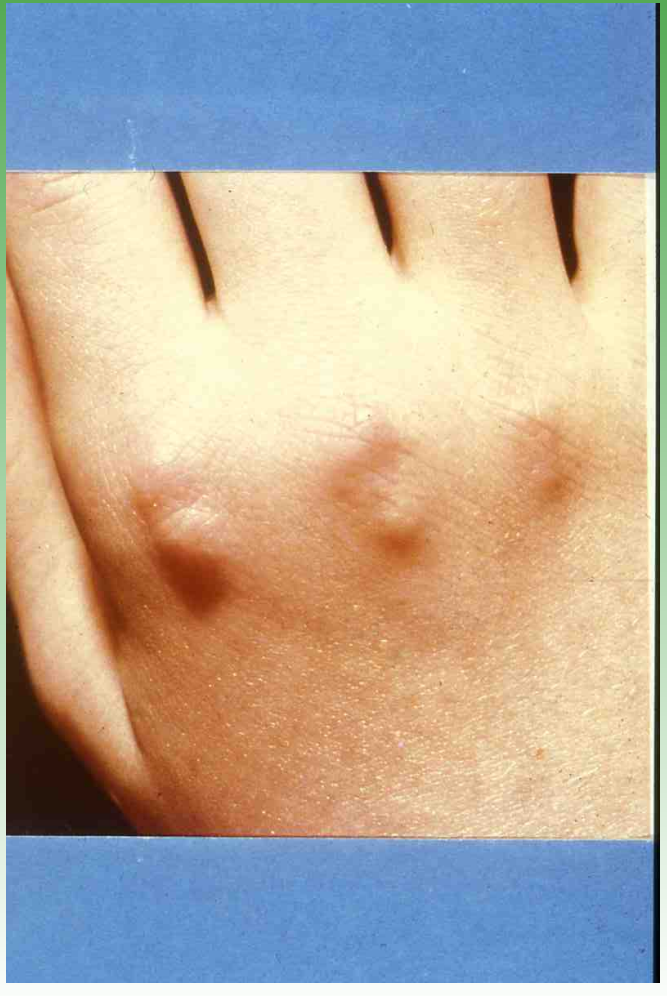

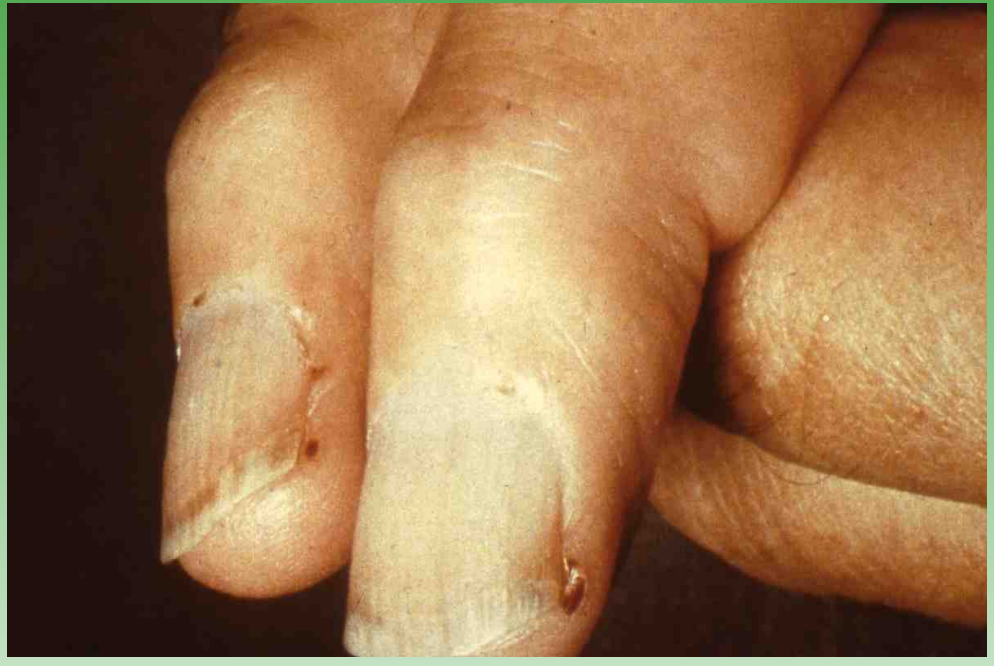

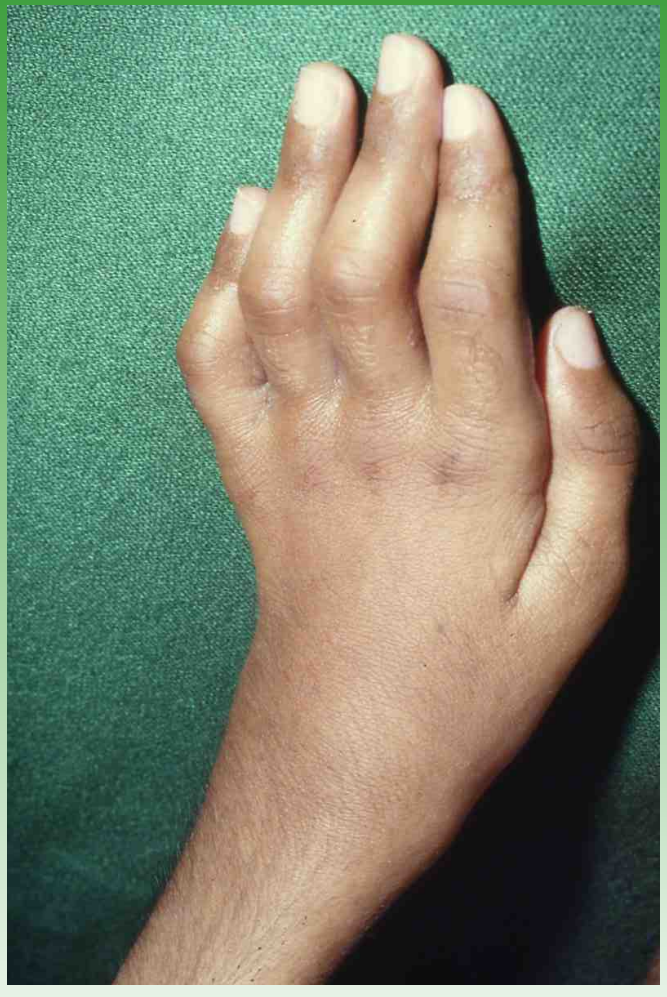

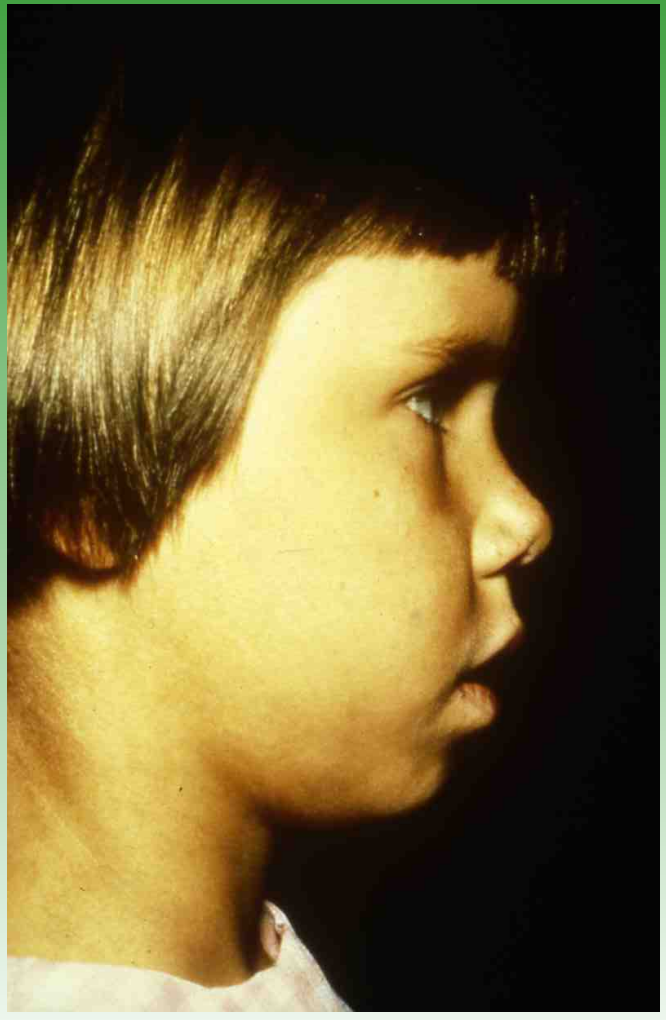

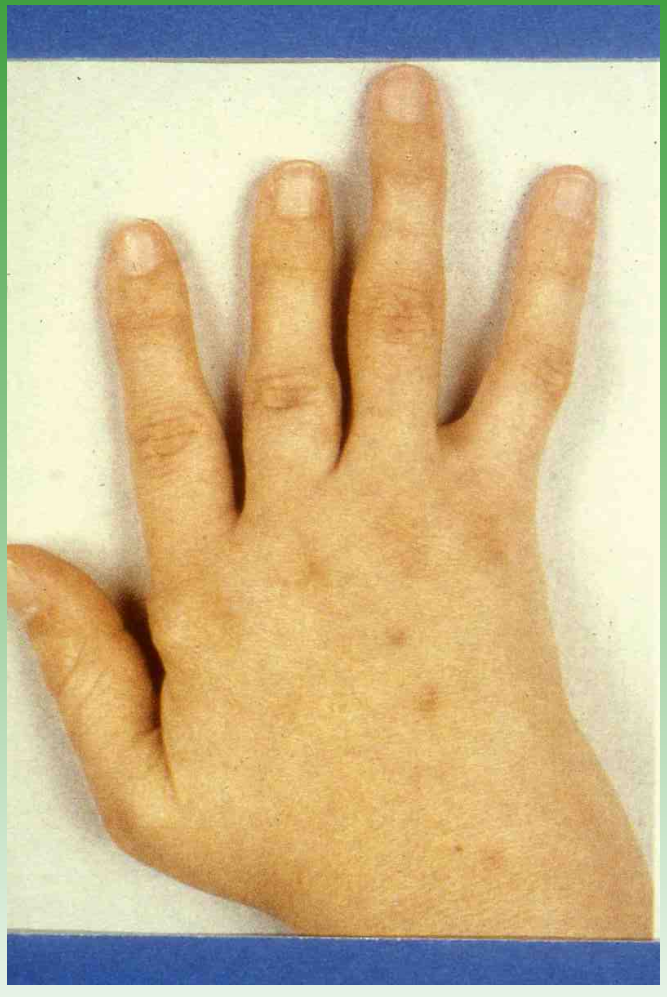

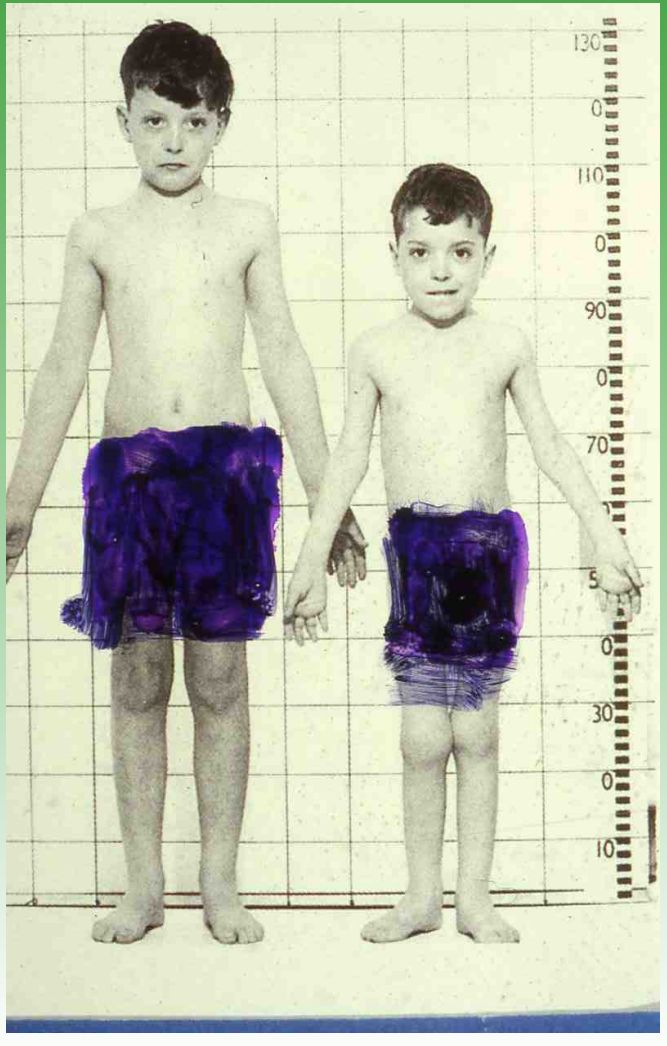
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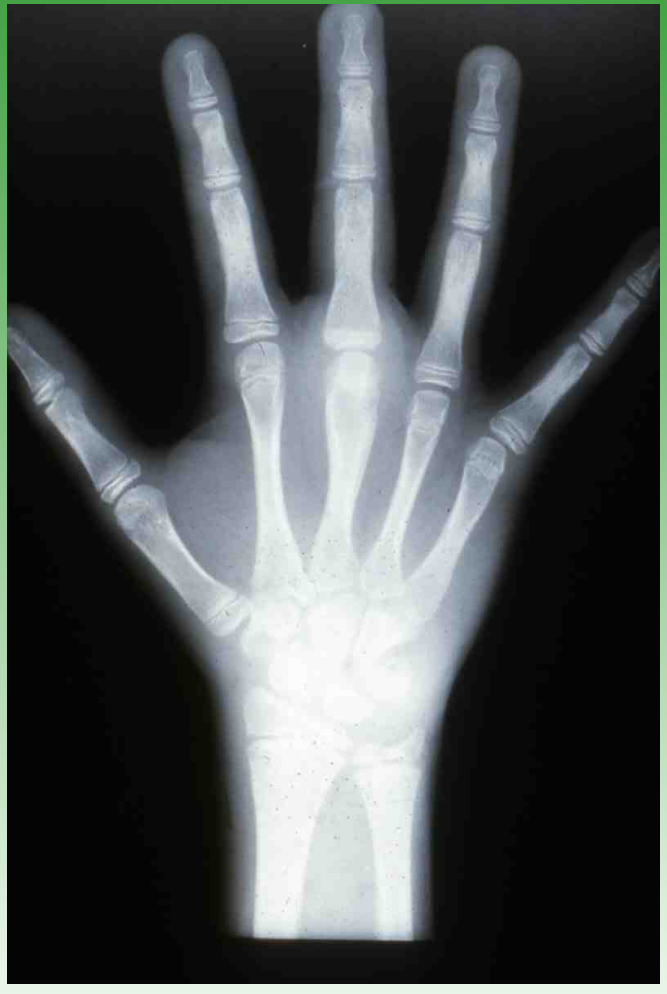
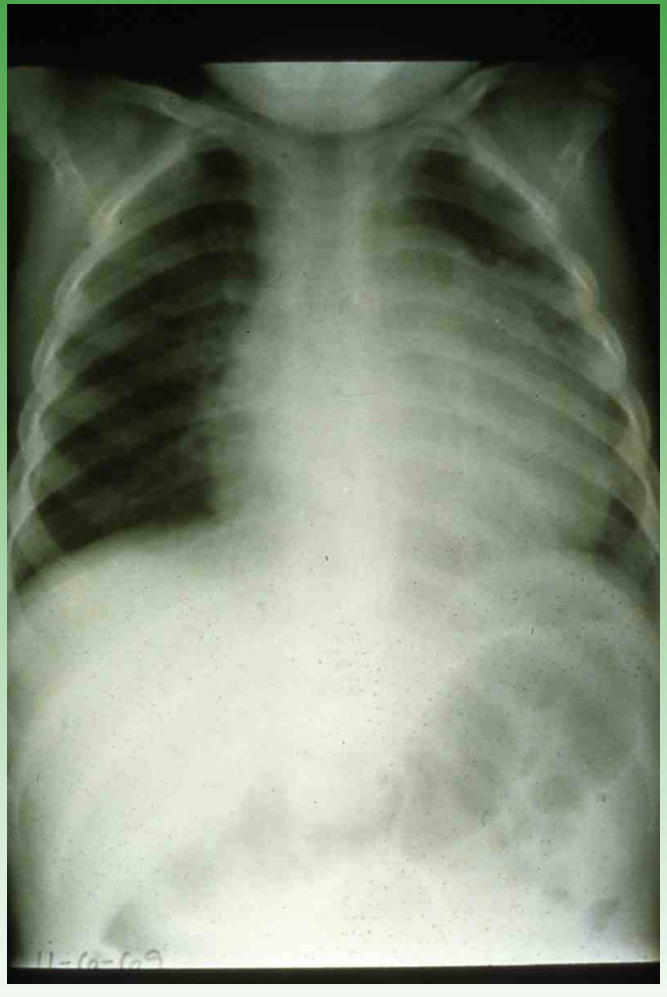
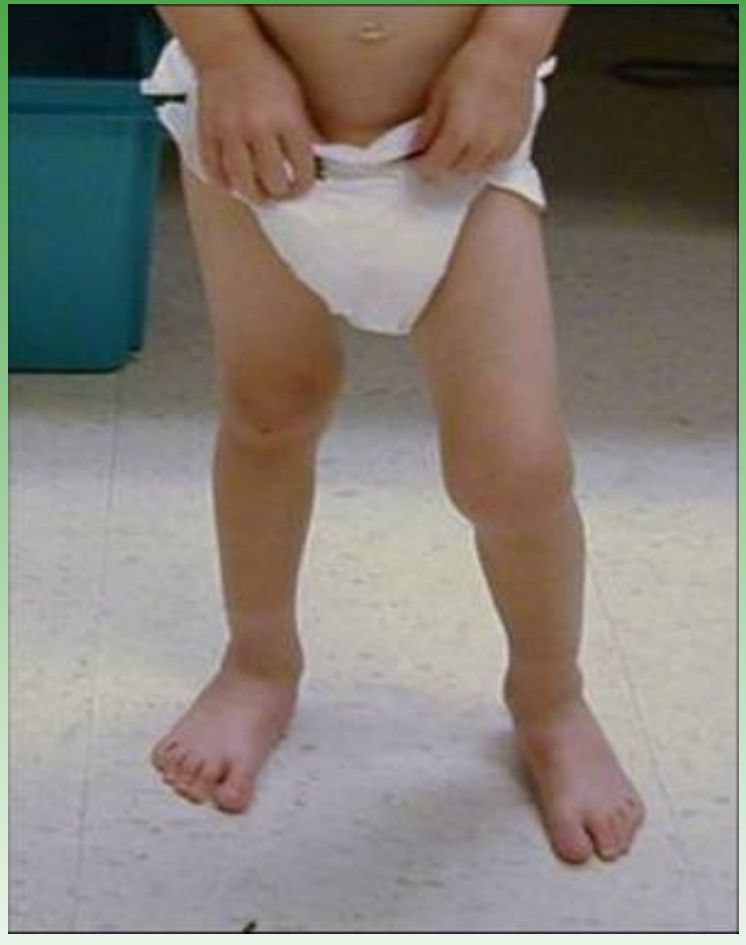
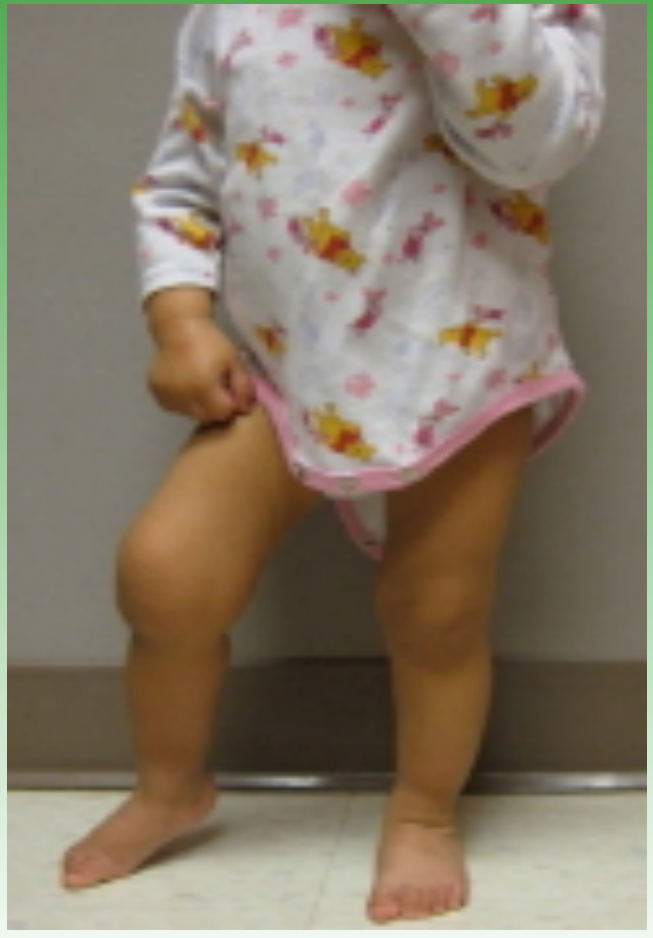




Pauciarticular JIA (50%)

SUBGROUP 35%		SUBGROUP 15%
Early childhood	Age at onset	Late childhood
Girls	Sex predominance	Boys
Knee, ankle, elbow	Typical joints	Lower limb
Chronic iritis	Extra-articular manifestations	Acute iritis, bowel disease, features of Reiter's syndrome
Negative	Rheumatoid factor	Negative
>50%	ANA	0
DR5, 6, 8	HLA	B27
Severe arthritis 10%; severe iridocyclitis possible	prognosis	Chronic spondyloarthropathy possible 0





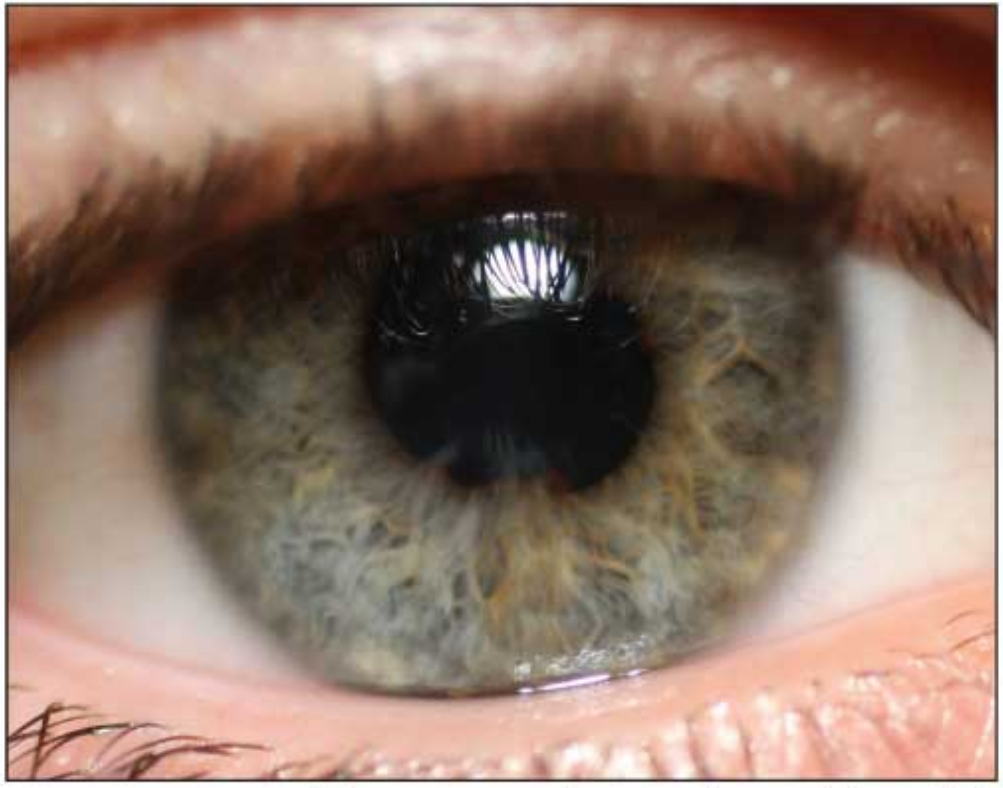
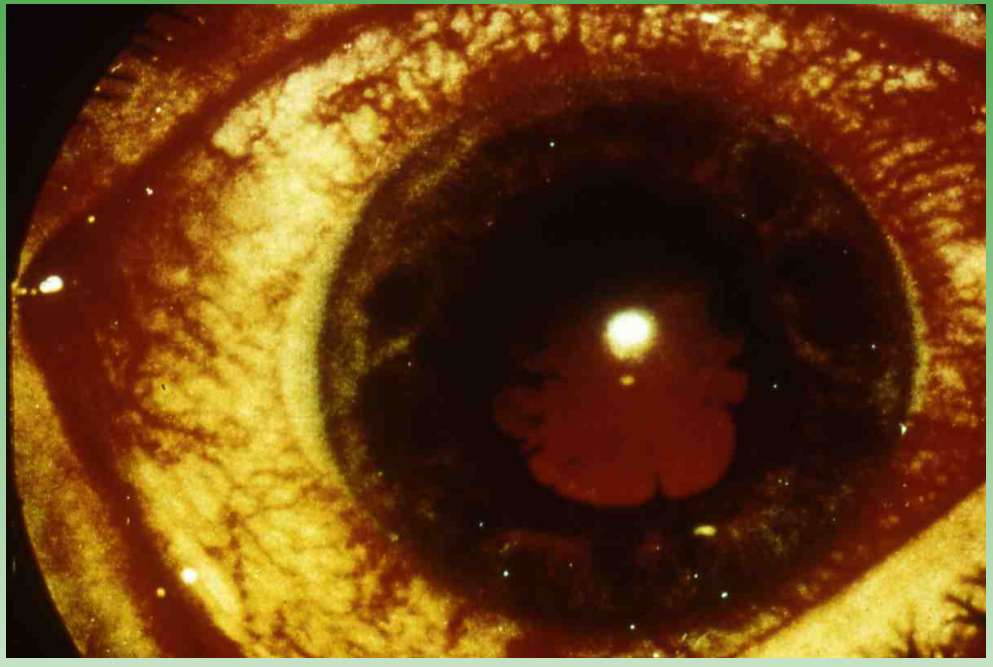


Figure 1 – *Synechiae are seen in a patient with uveitis who has juvenile idiopathic arthritis. Other complications of uveitis include keratotic bands, cataracts, and vision impairment.*



Management of Juvenile idiopathic Arthritis

TEAMWORK

PEDIATRIC RHUMATOLOGY

PHYSIOTHERAPY

OCCUPATIONAL THERAPY

PEDIATRIC ORTHOPEDIC

SOCIAL WORKER

CLINICAL PHARMACOLOGY

Treatment for JIA

SUBTYPE	first-line therapy	Severe or refractory
Oligoarticular		
- Persistent	IAS injection ± NSAID; may repeat IAS injections up to 4 per year	MTX; Anti-TNF-α agent may be needed
- Extended	If fewer than 8 joints, manage as persistent; if more, manage as polyarticular	
Polyarticular	MTX ± IAS ± NSAID	Add Anti-TNF-α agent; may need different DMARD (leflunomide, SSZ) ± IAS injection ± prednisone, rituximab
Enthesitis-related	IAS injection and NSAID	MTX or SSZ; Anti-TNF-α agent may be needed
Systemic		
Active systemic	Anti-IL-1 agent; prednisone (IV pulse/daily oral) may be needed	Cyclosporine, thalidomide
Active arthritis	Manage as polyarticular or oligoarticular, depending on number of joints involved	Manage as polyarticular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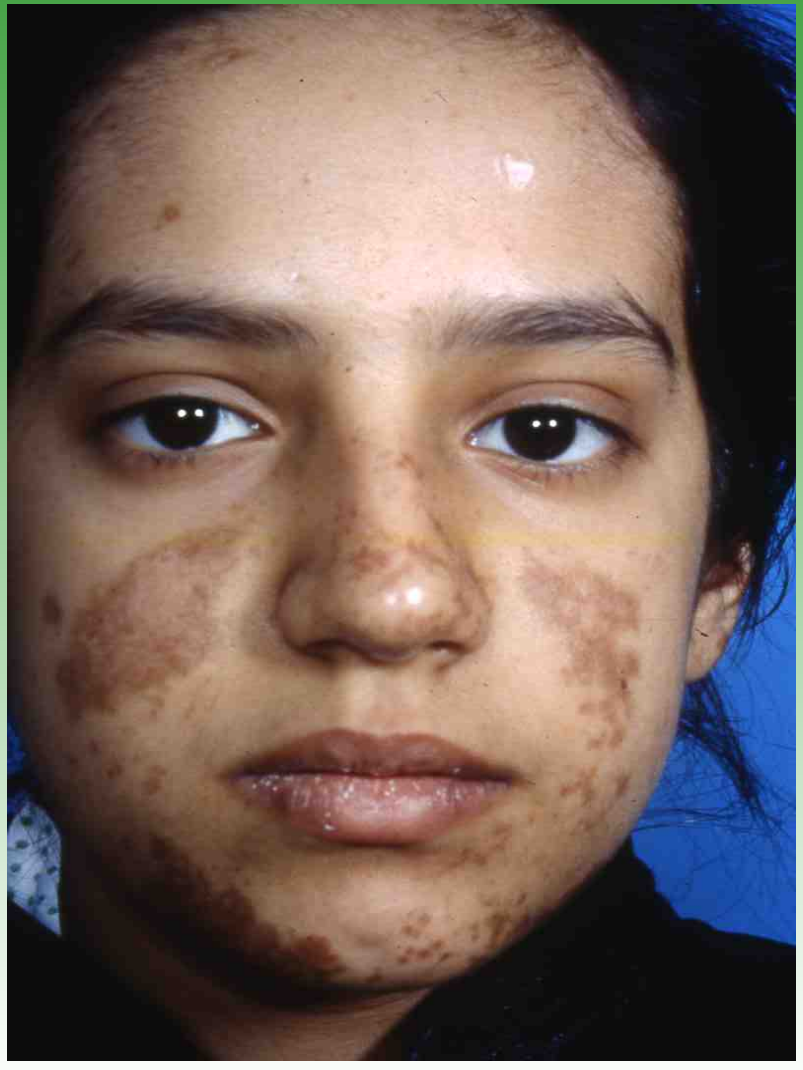


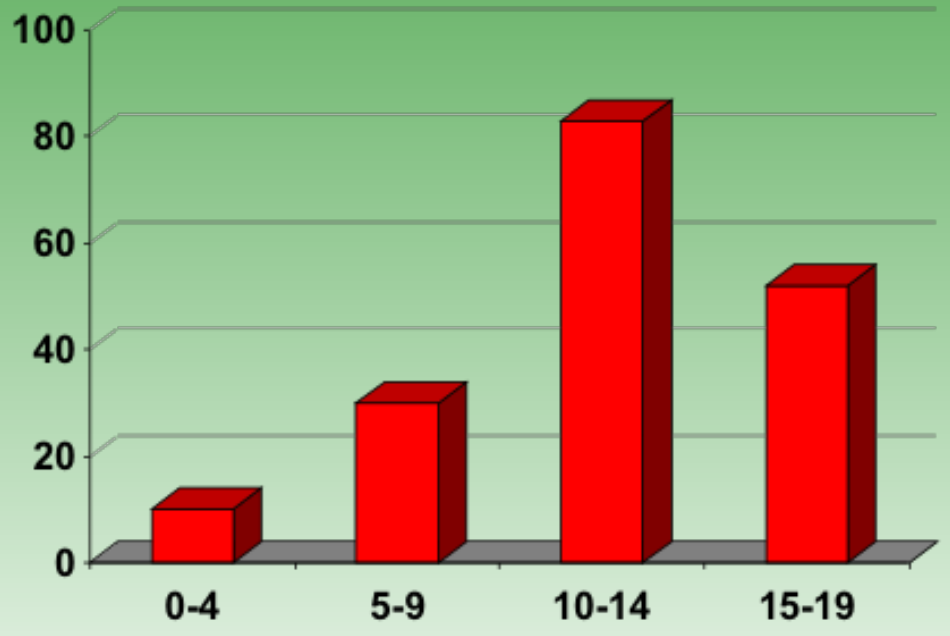
Juvnile systemic lupus erythematous JSLE

- Autoimmune disease
- Autoantibodies,immune complex formation,immune dysregulation leading to tissue damage.
- Etiology unknown[Enviromental and Hormonal trigger to a genatically susceptible person].
- Natural history unpredictable.
- All races affected
- Females>males
- Incidence in children <15years 0.5-0.6 per100,000

JSLE

- Rare before 5 years.
- Neonatal lupus
- More common in adolescence.
- JSLE in the first decade: 3.5 – 15% of all SLE cases.
- More renal involvement in JSLE
- More sever in the first decade

AGE AT ONSET IN JSLE



Classification criteria of SLE

Malar (butterfly) rash
Discoid-lupus rash
Photosensitivity
Oral or nasal mucocutaneous ulcerations
Nonerosive arthritis
Nephritisb
- **Proteinuria > 0.5 g/day**
- **Cellular casts**

Encephalopathyb
- **Seizures**
- **Psychosis**

Pleuritis or pericarditis
Cytopenia
Positive immunoserology
- **Antibodies to nDNA**
- **Antibodies to Sm nuclear antigen**
- **Positive LE-cell preparation**
- **Biologic false-positive test for syphilis**

Positive antinuclear antibody test

0

a Four of 11 criteria provide a sensitivity of 96% and a specificity of 96%.

SEROLOGICAL TESTS

Test	% positive of SLE
ANA by indirect immunofluorescence	95 – 100
Antibody DNA	60
Antibodies to soluble ribonucleoproteins	80
Anti nRNP	30
Anti SM	20
Anti Ro (SSA)	30
Anti La (SSB)	10

CLINICAL PRESENTATION
Mucocutaneous

Malar rash, Butterfly distribution. 25% of cases.

Photosensetivity.

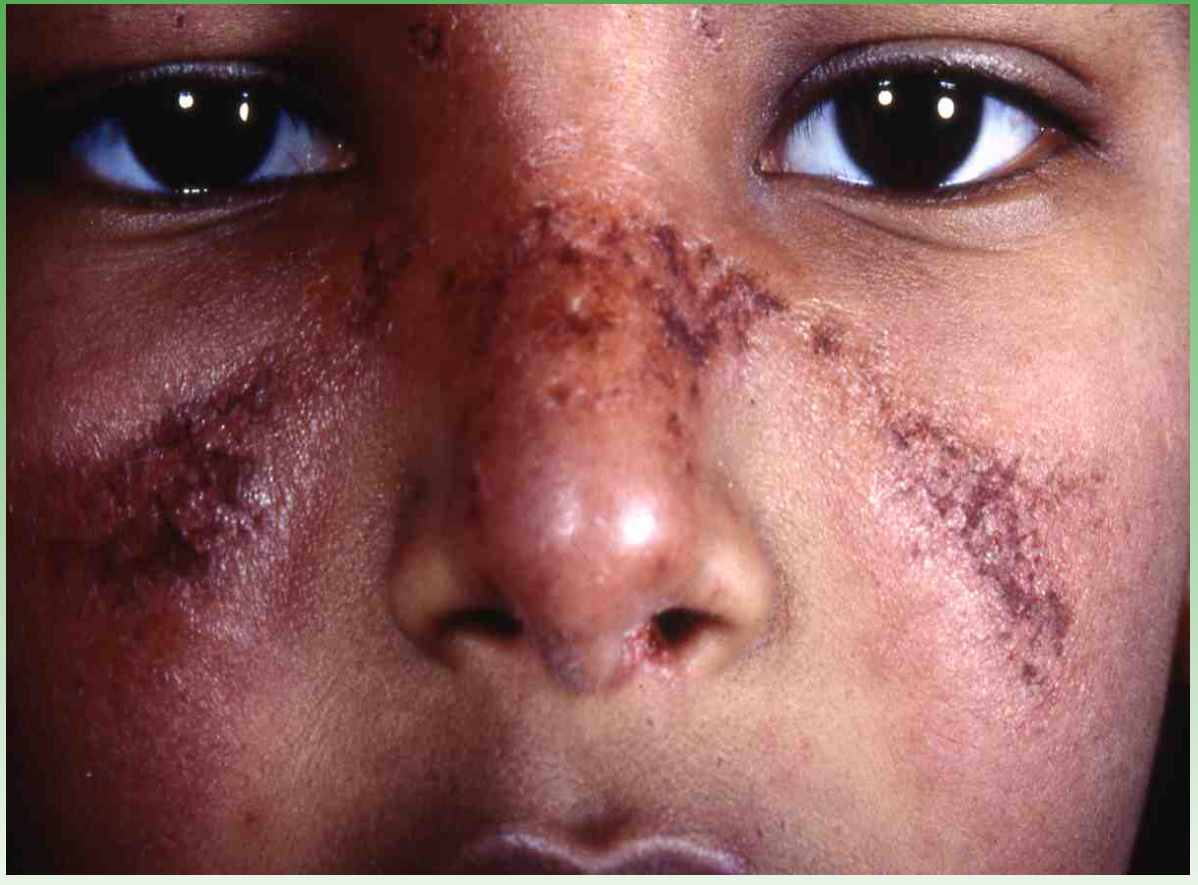
Discoid rash

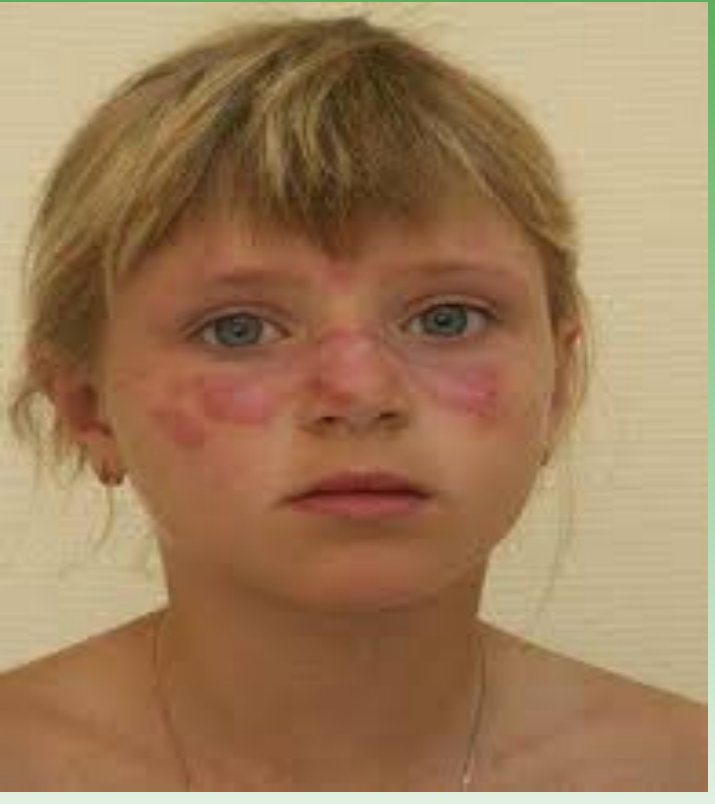
Nasal and oral ulceration [painless may perforate]

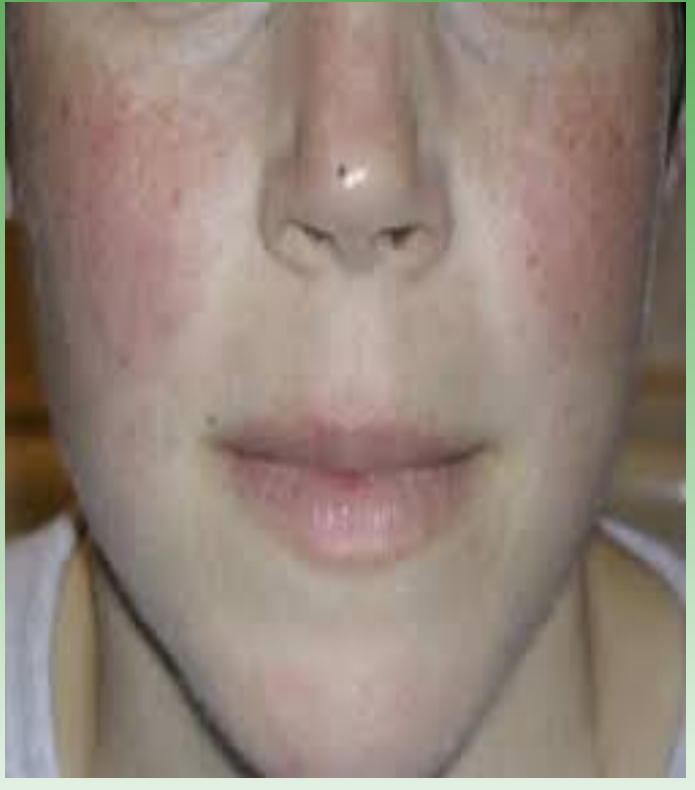
Small vessel vasculitis [digital ulcer,livedo-reticularis,raynauds phenomenon]

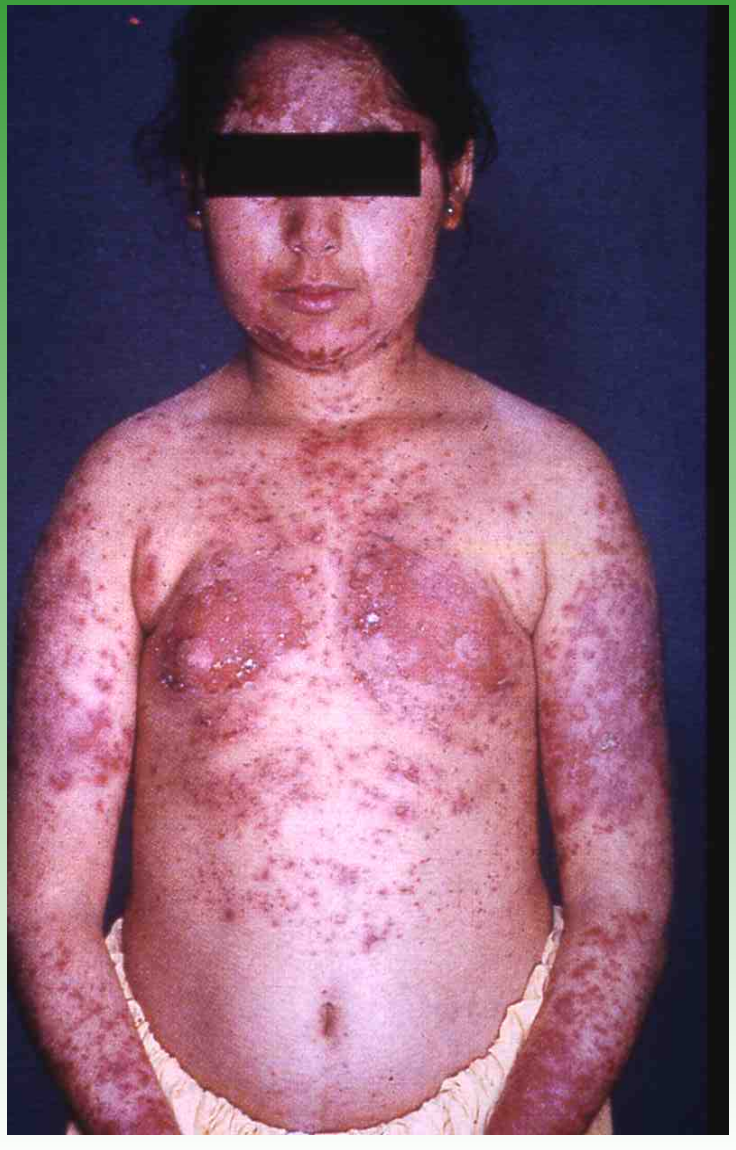
Alpoecia

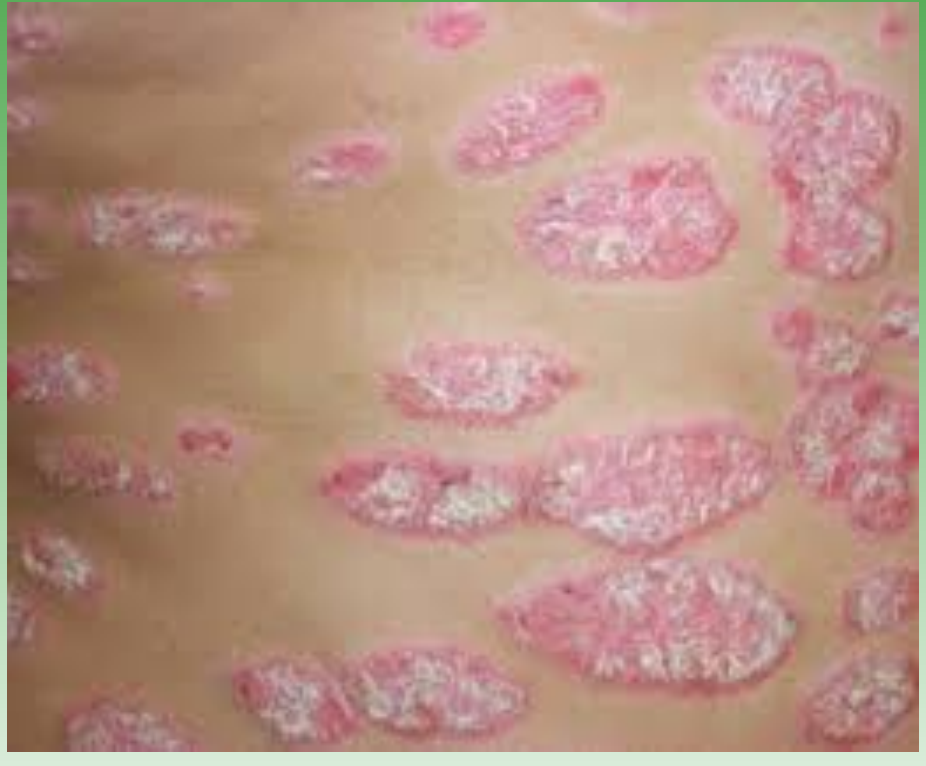
Neonatal Lupus Erythematous: Lesions similar to seborrheic dermatitis, disappear spontaneously in 4-6 months.

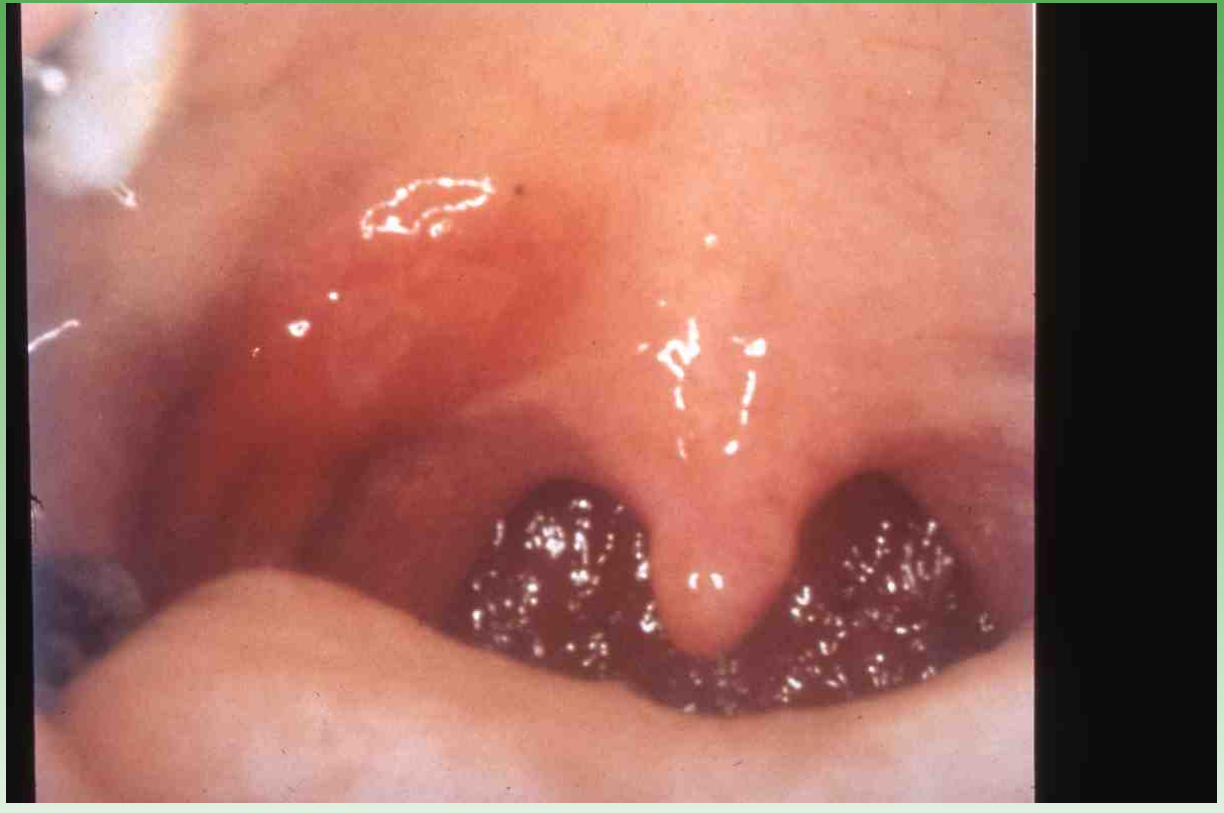


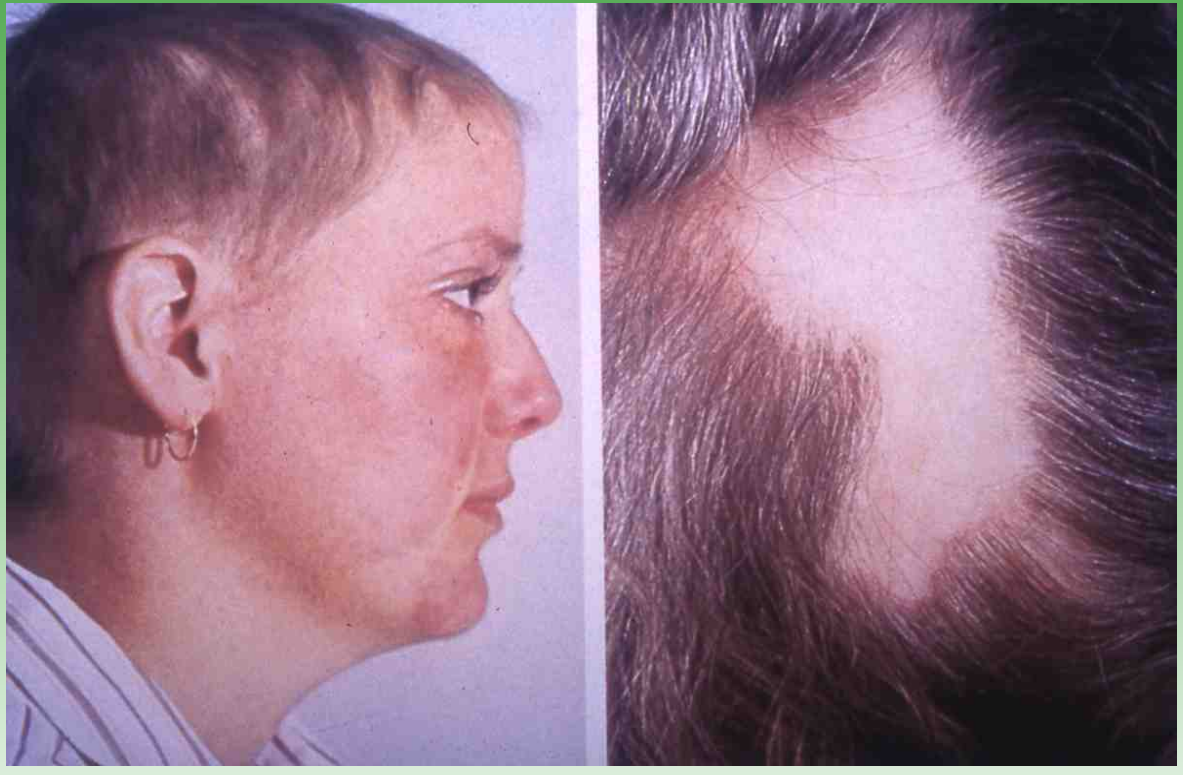












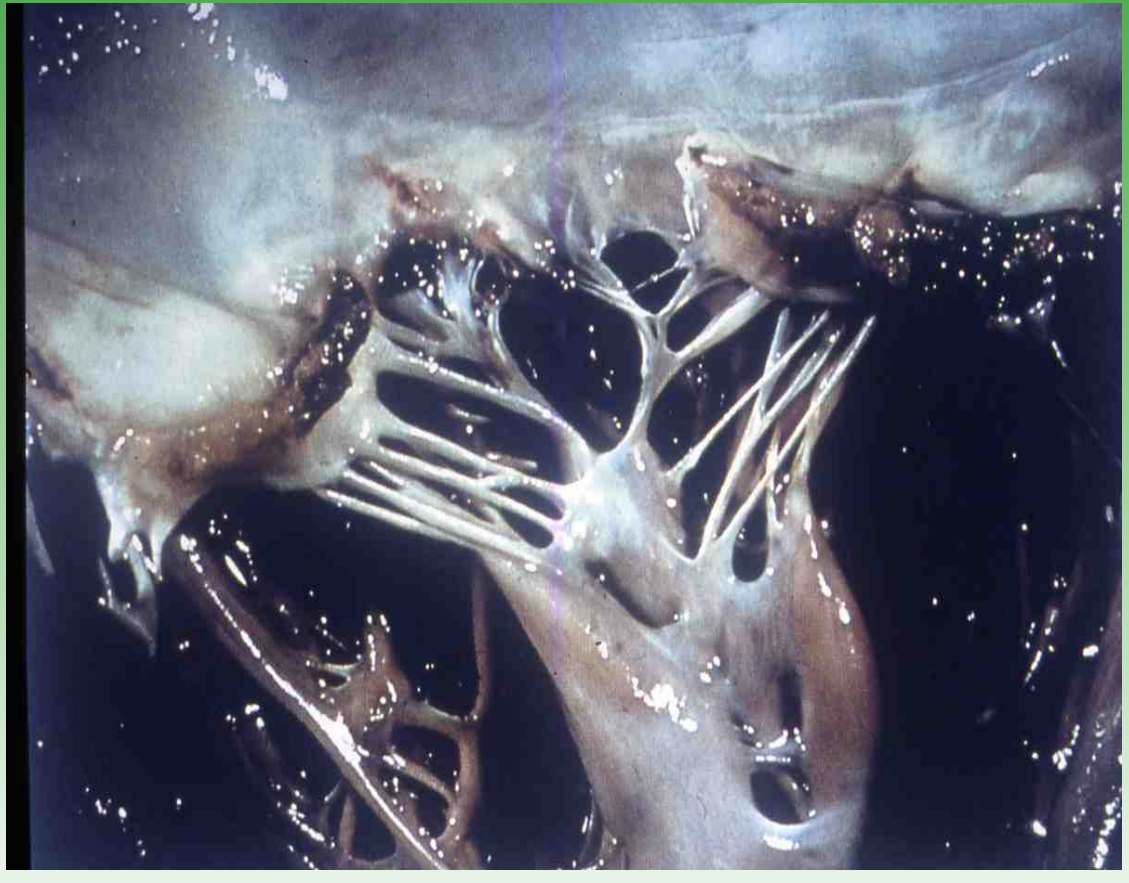
CARDIOVASCULAR

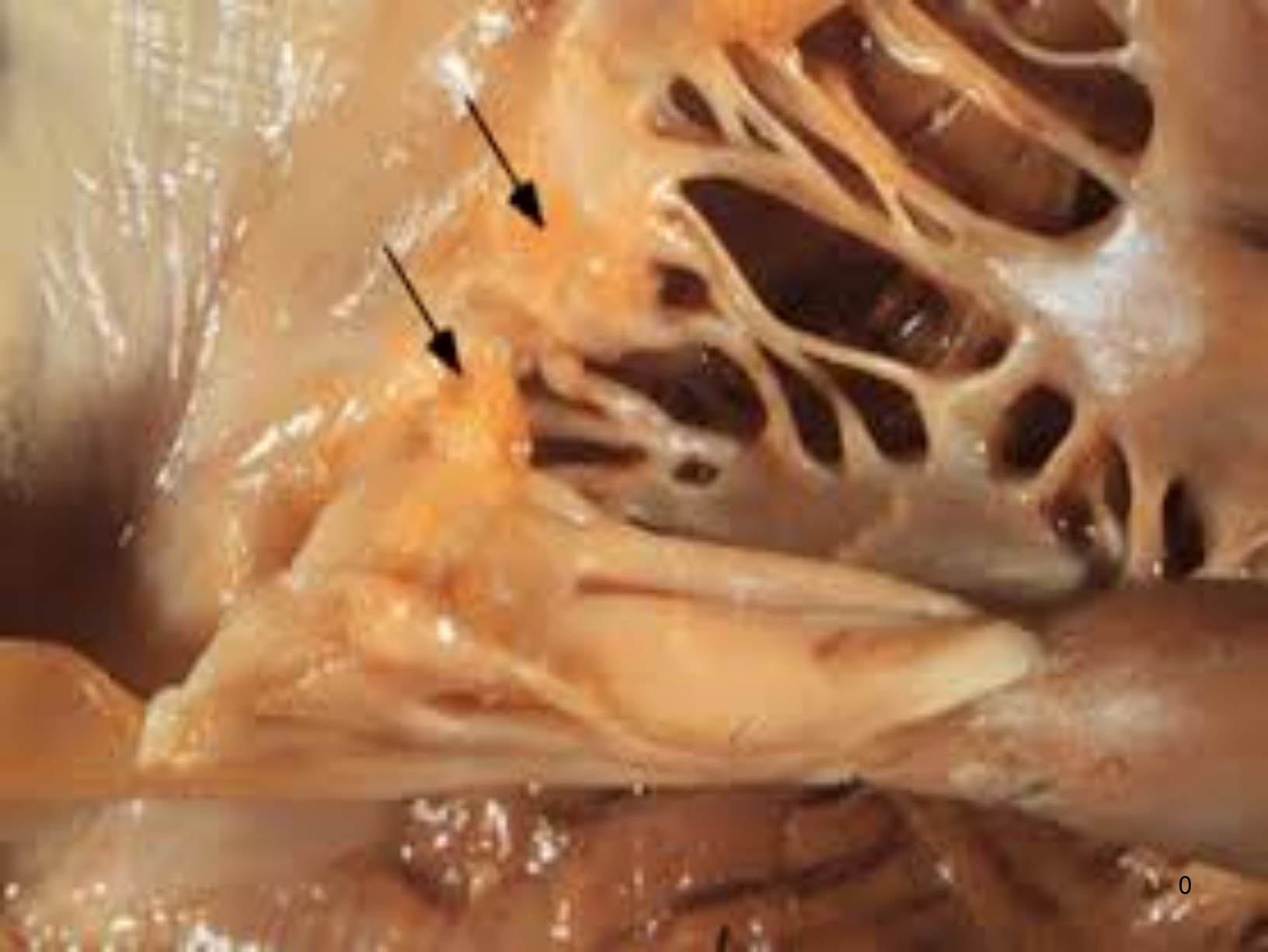
Myocarditis

Pericarditis

Endocarditis (Libman-Sacks)

Conduction defect [CBBB] in neonate.
Neonatal lupus[Rash similar to seboriac dermatitis





VASCULITIS IN SLE

- SIZE

  Small Vessel Vasculitis

- CLINICAL PRESENTATION:

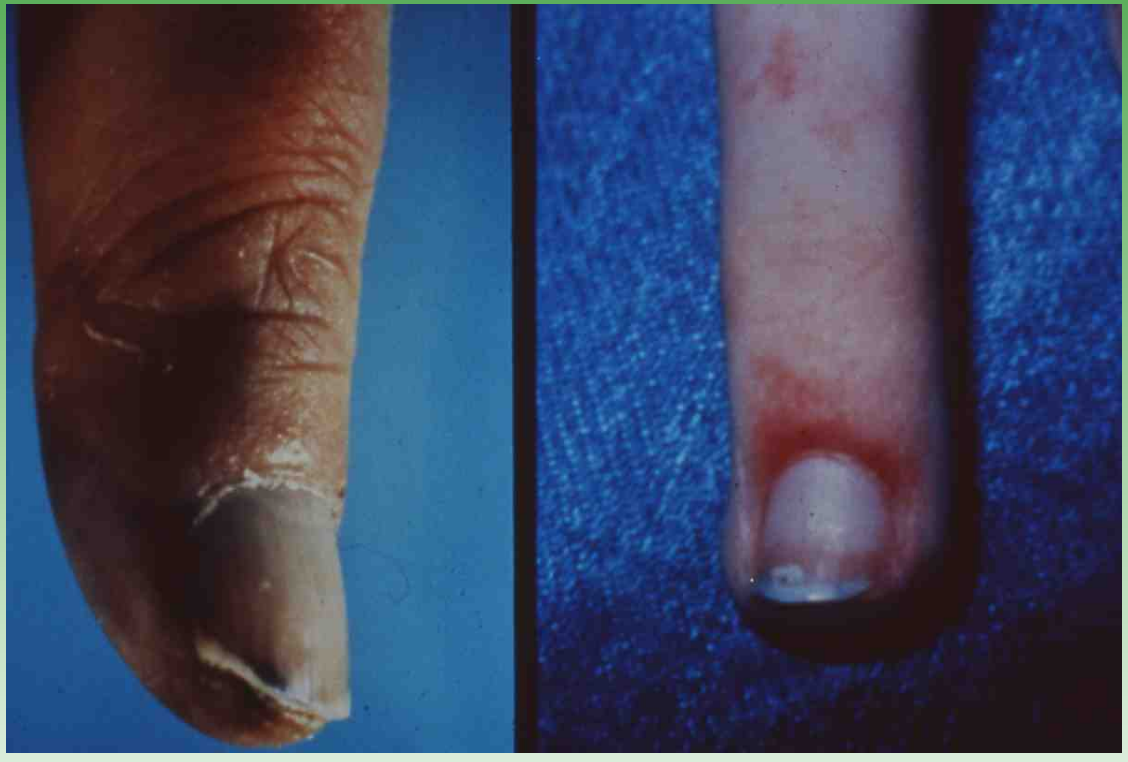
  Lupus Crisis (wide spread vasculitis + polyserositis)

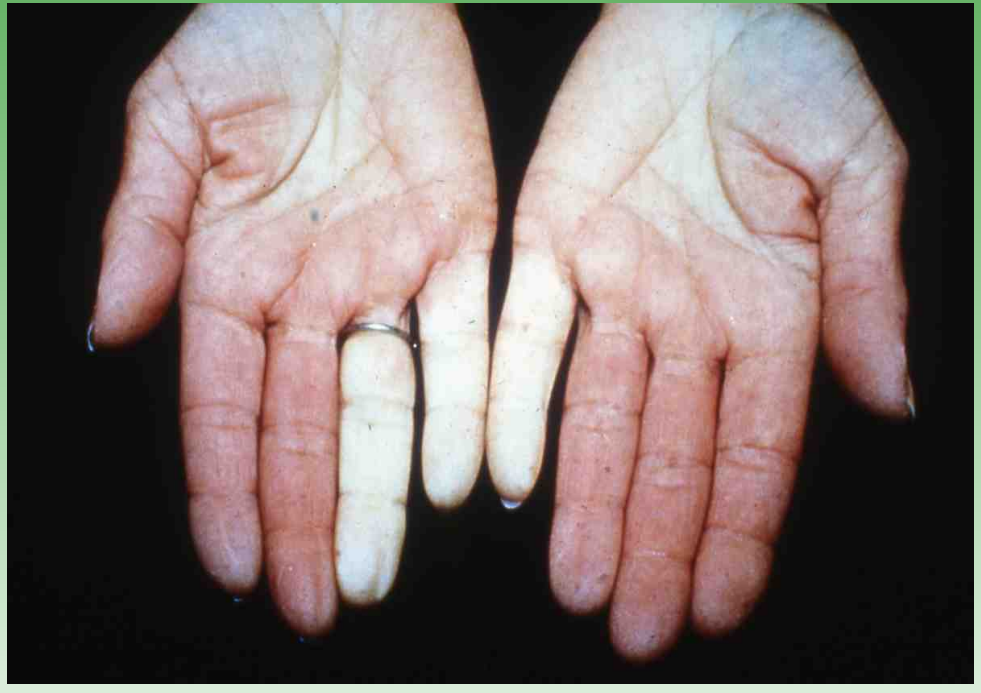
  Raynaud's phenomenon

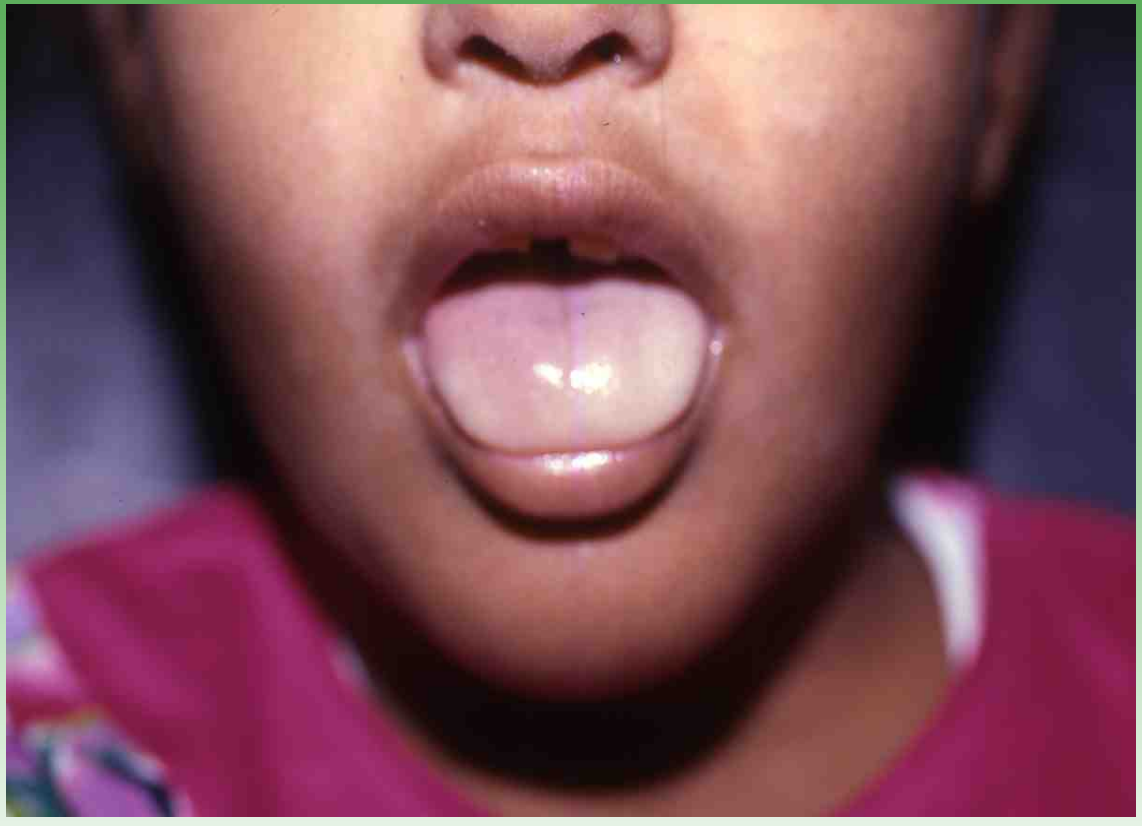
  Digital involvement

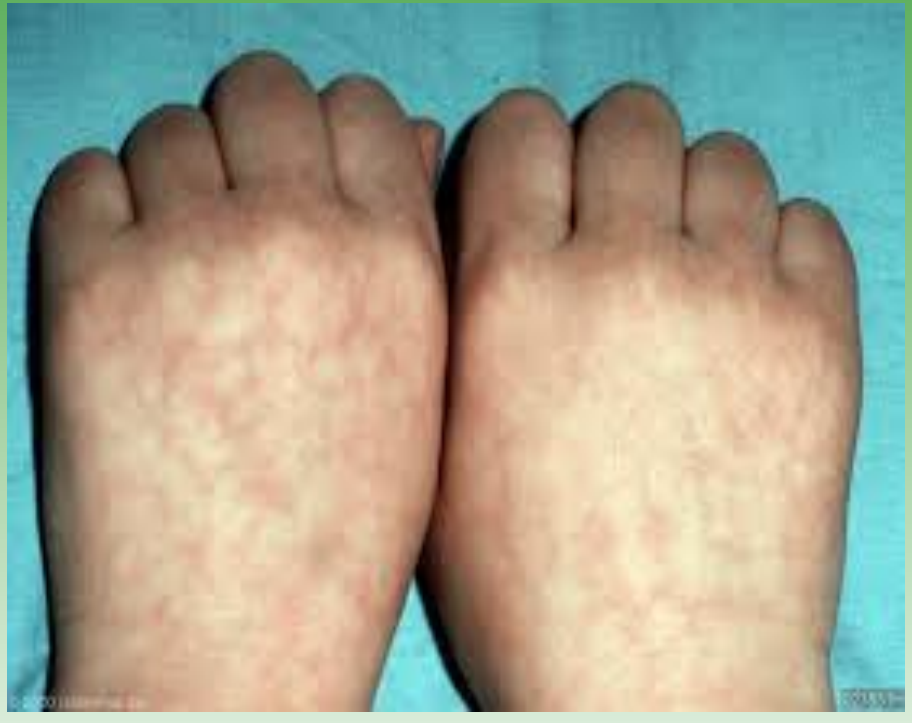
  Recurrent thrombophlebitis

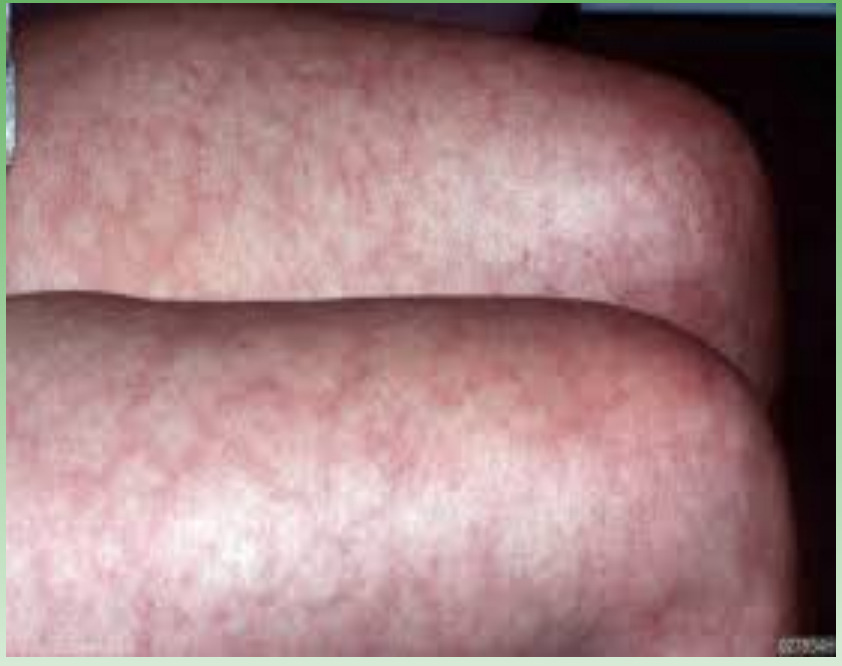
  Livedo reticularis











HAEMATOLOGICAL ABNORMALITIES

Abnormality	Patients (%)
Anemia (hematocrit < 30%)	**50**
Acute hemolytic anemia	5
Leukopenia <2,000 WBC/mm3	10
Leukopenia <4,500 WBC/mm3	**40**
Thrombocytopenia <150,000 pts/mm3	**30**
Thrombocytopenia <100,000 pts/mm3	5

G.I. MANIFESTATIONS

- 31% of cases have abdominal pain.
- Abnormal esophageal motility.
- Ascitis and pertonitis.
- Acute pancreatitis.
- Mesentric artery thrombosis
- Malabsorption
- GI vasculitis: Edema, ulceration, gangrene , perforation

NEUROPSYCHIATRIC MANIFESTATIONS

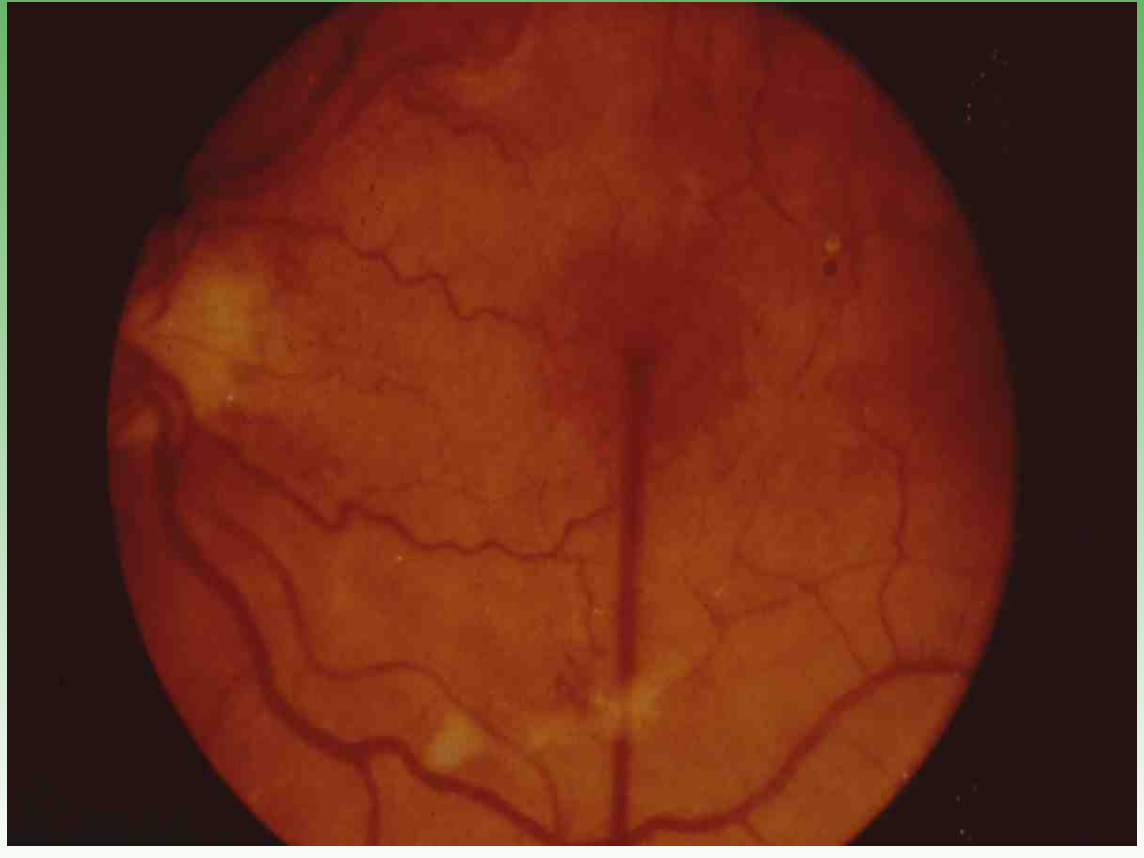
- Non-Focal Cerebral Dysfunction (35-60%)

organic brain syndrome.

Psychosis.

Neurosis.

- Movement Disorders (10-35%)
- Seizures (15-35%)
- Focal Deficits (10-35%)
- Peripheral Neuropathies (10-25%)
- Others: e.g. headach , aseptic meningitis, mysthenia gravis



Management of SLE

Depend on system affected.

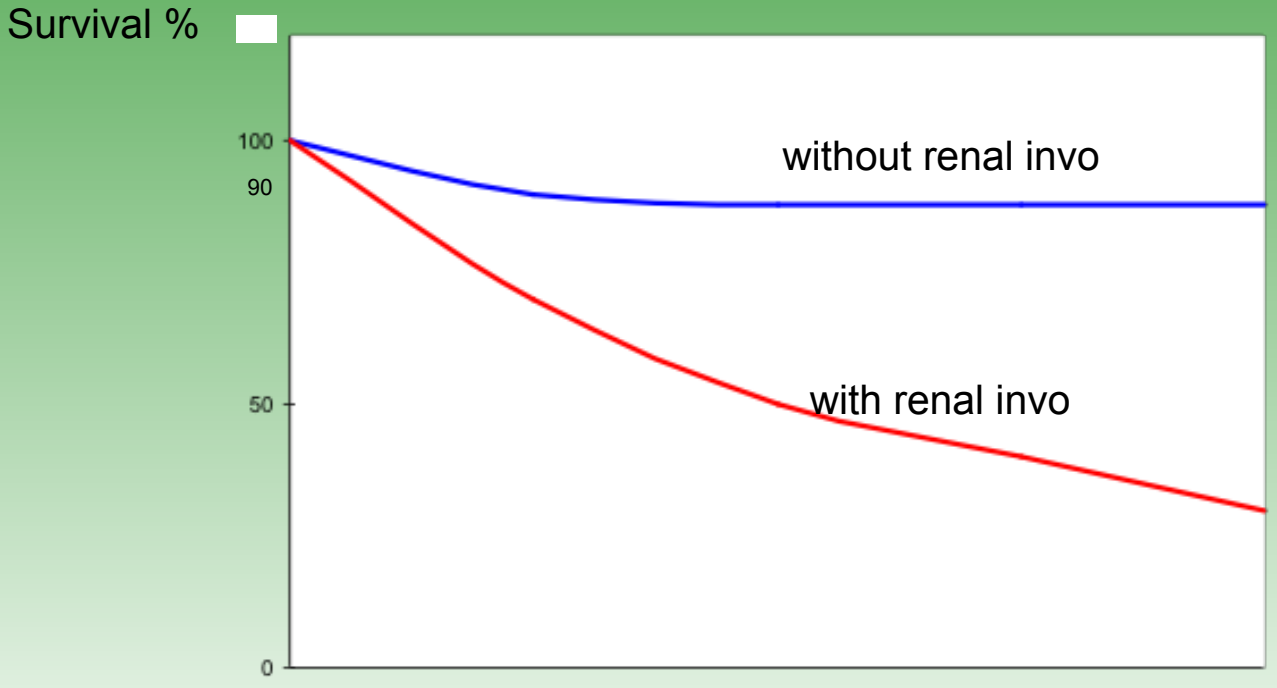
(history, clinical examination and investigations)

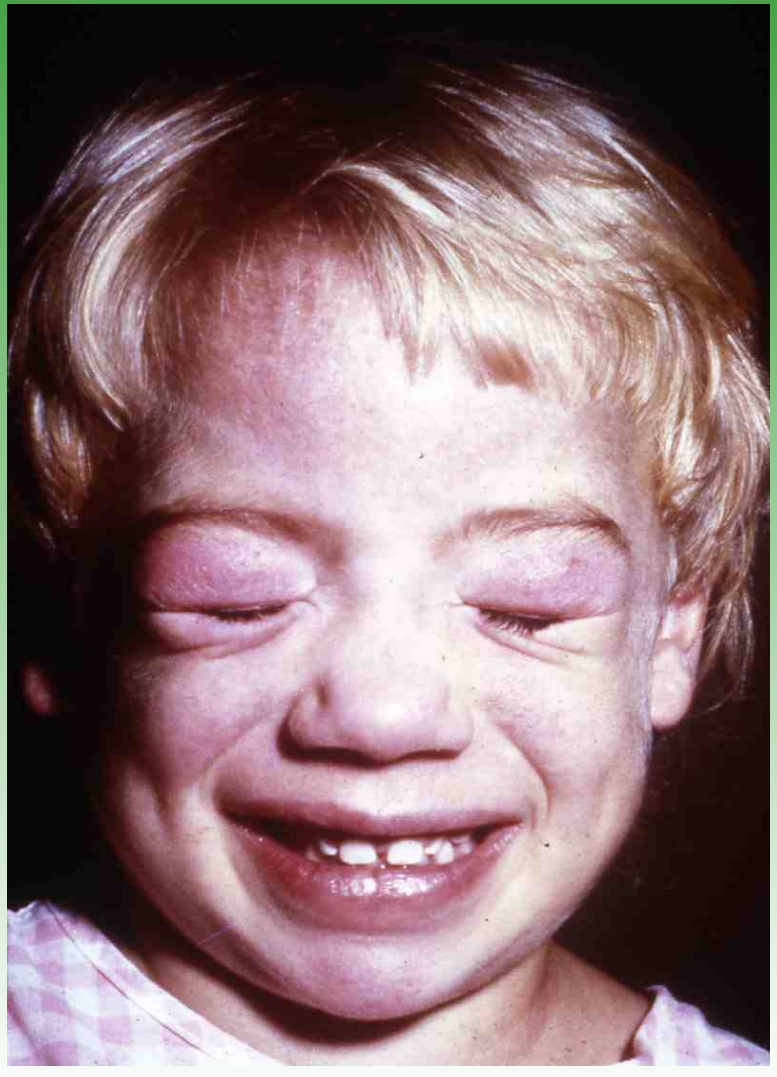
Non-immunosupressants	**Immunosuppresants**
-antimalarial (Hydroxychloroquine	-Corticosteroids (Prednisone/ivMP)
-NSAIDs (Ibuprofen, Naproxen)	-DMARDs (MTX, Imuran, cellcept)
	-Biologics (Rituximab, Tocilizumab, Belimumab)
	-Cytotoxins (cyclophosphamide)

Management of SLE (cont.)

- I.V. immunoglobulin (IV Ig).
- Plasmapheresis.
- **Other treatment:**
  - sunscreen.
  - physical and occupational therapy
  - treatment of complications.

Prognosis in SLE





JUVENILE DERMATOMYOSITIS JDM

Idiopathic infalmmatory myopathy

Has characterstic cutaneous lesions

Affect skin and muscles

May affect [joints,oesphagus,Lungs]

Calcinosis is common

Association with malignancy.

DERMATOMYOSITIS / POLYMYOSITIS

- Symmetrical progressive proximal muscle weakness.
- Characteristic rashes[Gottron papules,Heliotrope rash]
- Biobsy showing inflammatory changes
- Raised muscle enzymes (**CPK,AST,Aldolase**)
- Electromyography abnormalities (e.g. polyphasic potentials)

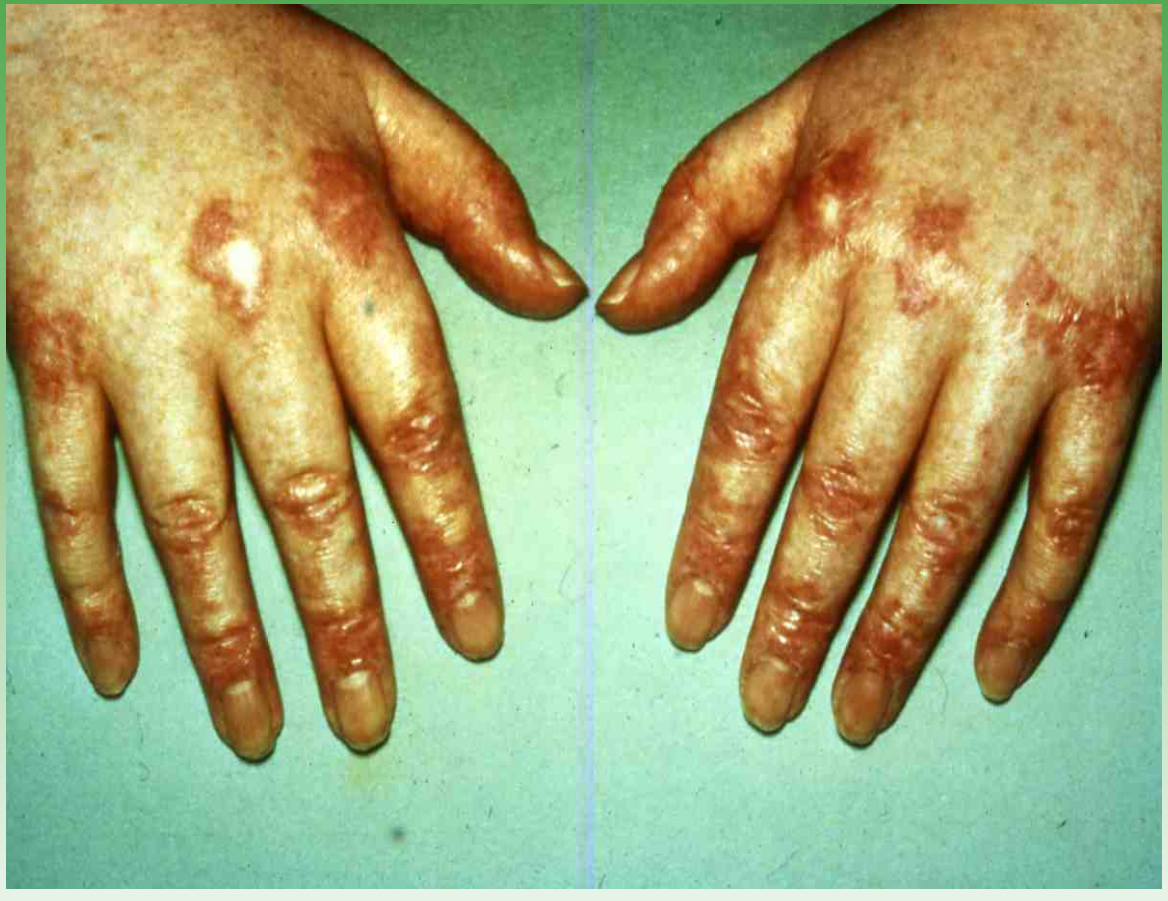
Juvenile Dermatomyositis

Expanded criteria for diagnosis

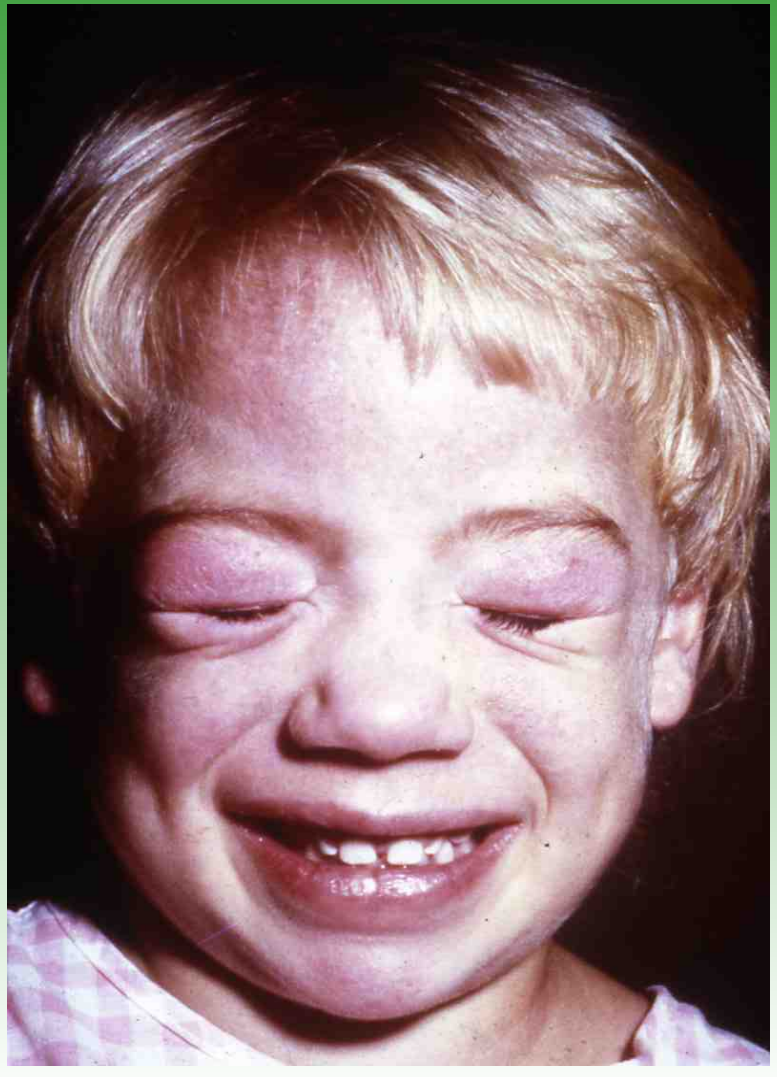
- Nail fold capillaroscopy abnormalities
- Calcinosis
- Dysphonia
- Typical findings on MRI of muscle and ultrasonography

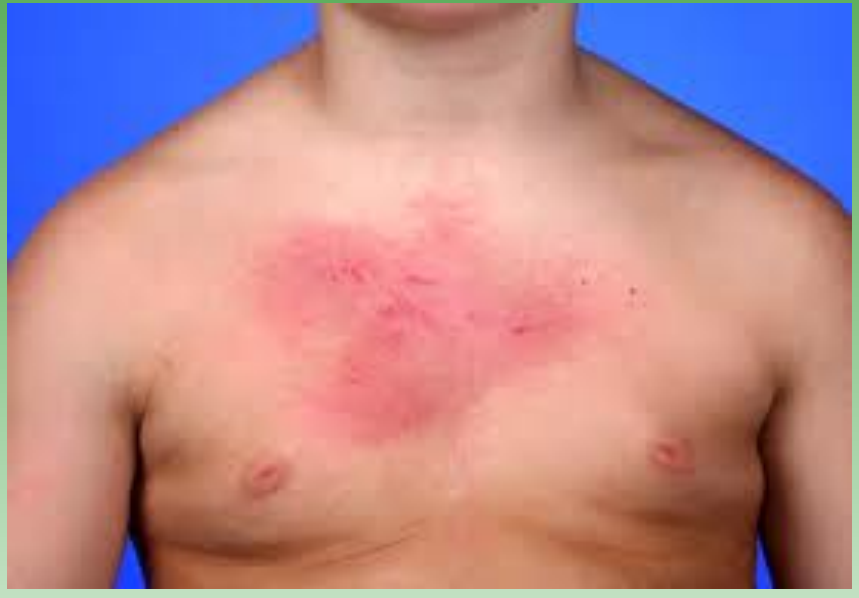
JDM Clinical Course

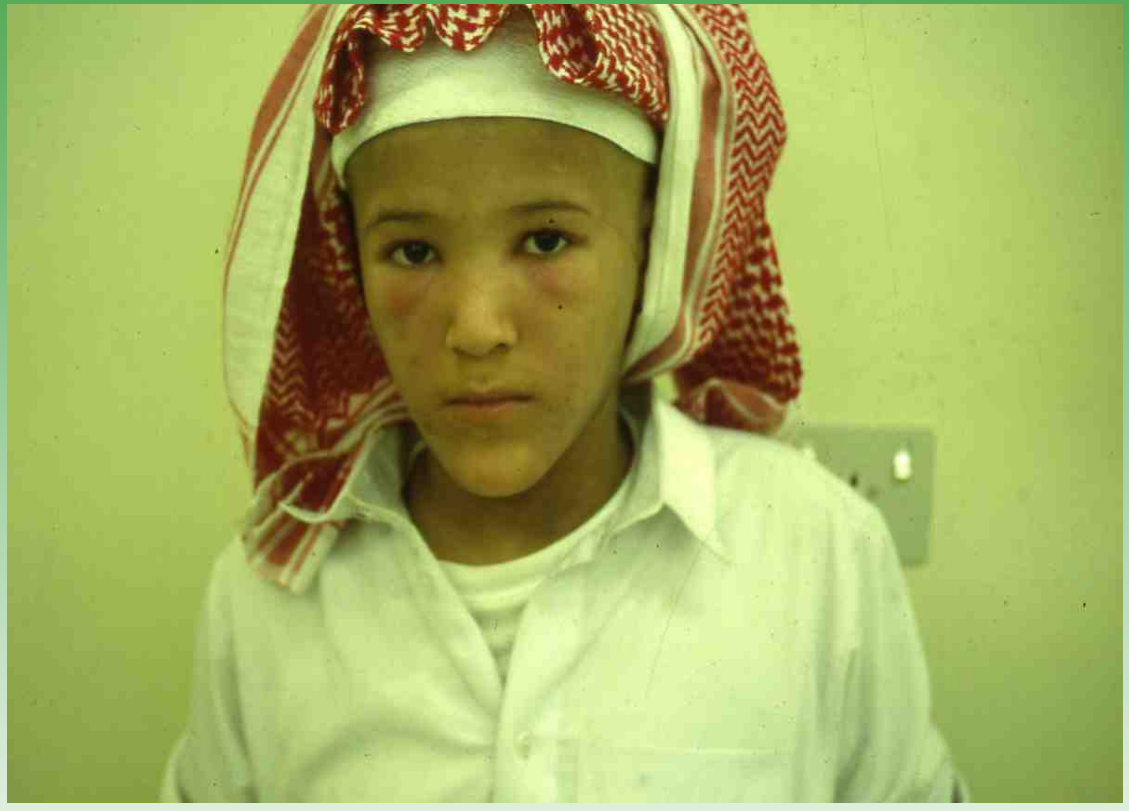
- Monocyclic (remission within 2-3 years)
- Polycyclic
- Chronic
- Ulcerative[GI-system]

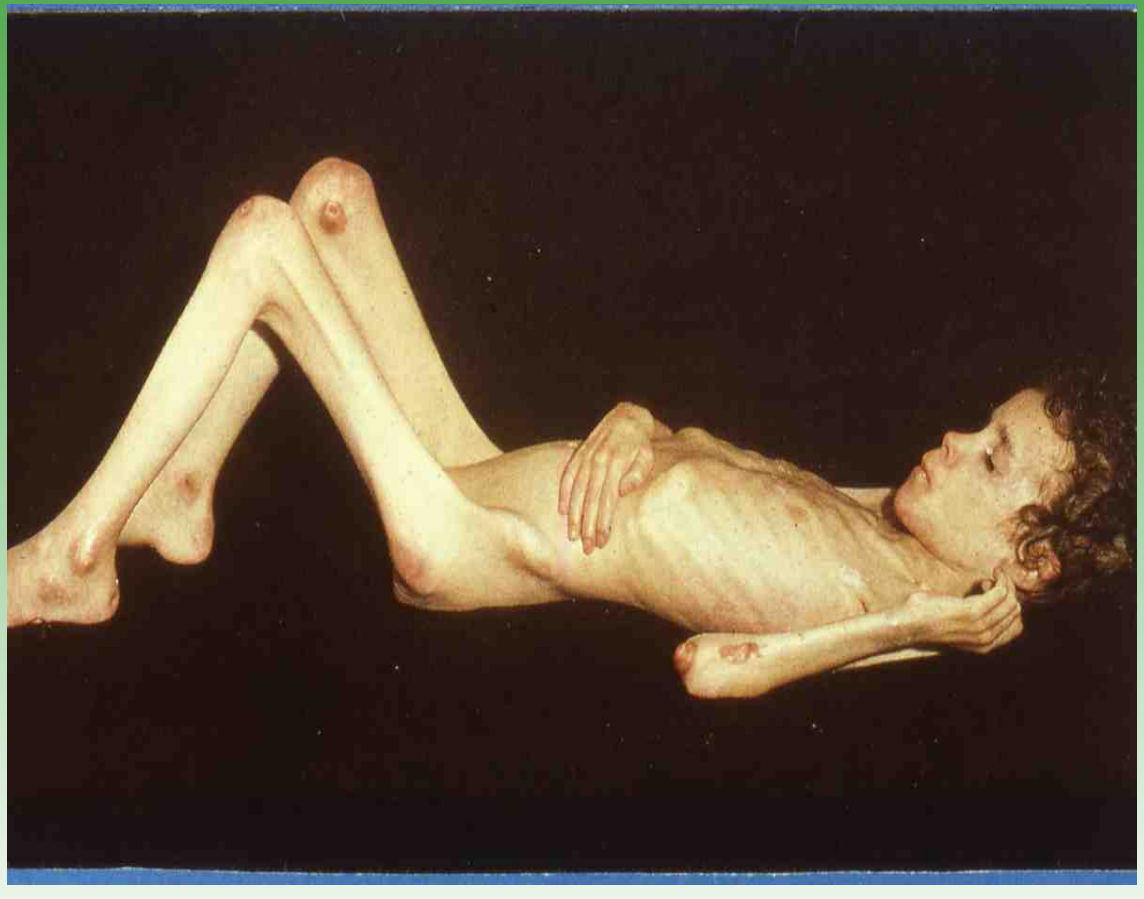


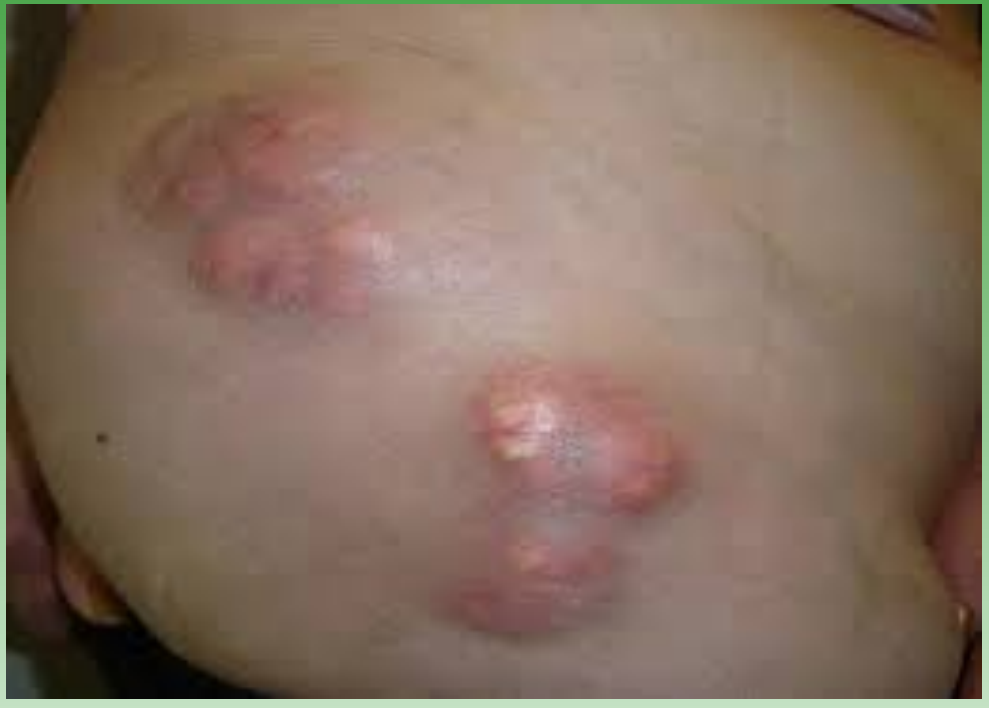

© ACR

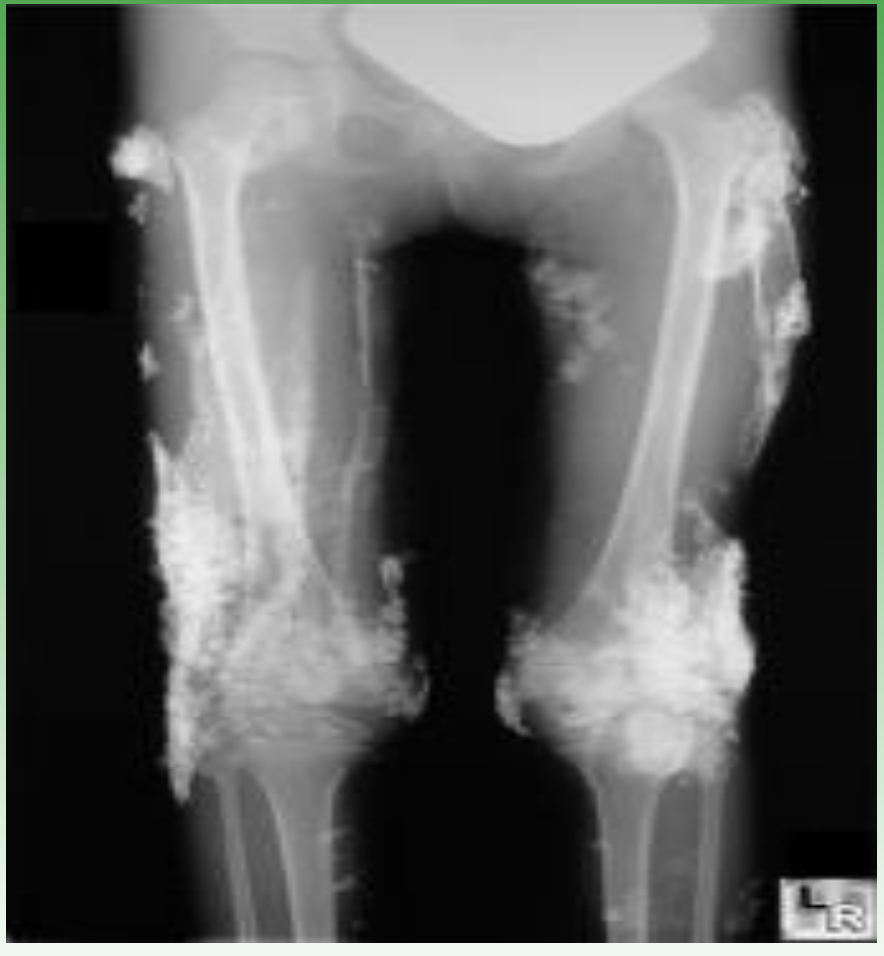


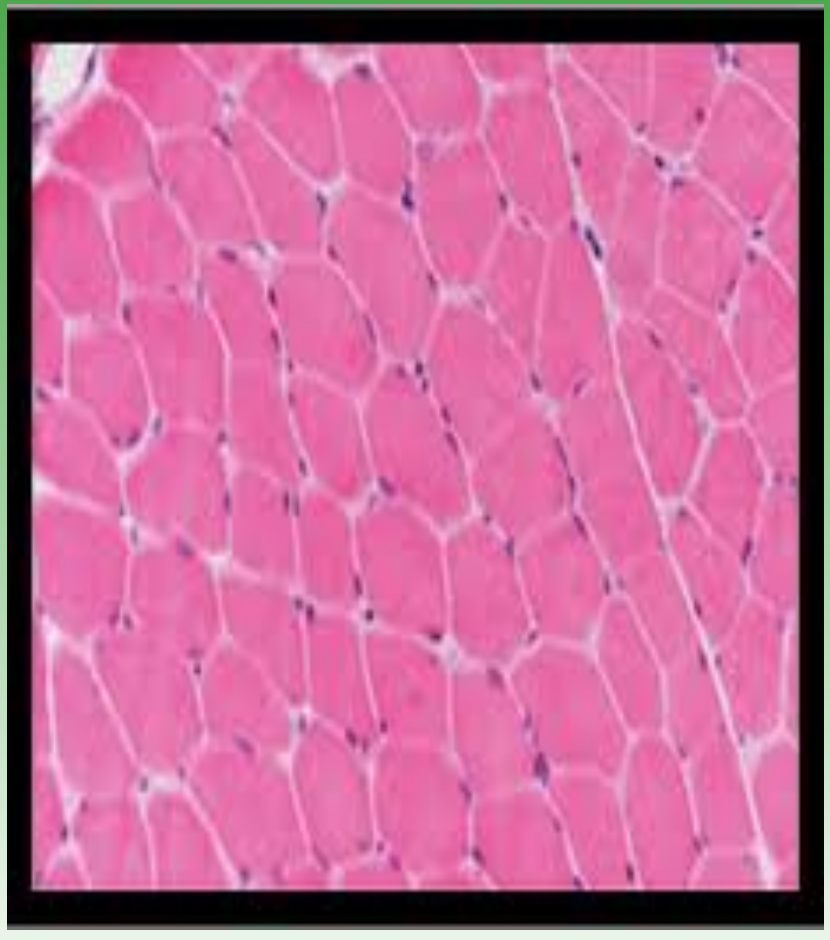












JDM Investigations

EMG

Muscle biopsy

Muscle enzymes (CPK, Aldolas)
Nail fold capillaroscopy

MRI

JDM - Treatment

- **Aims** - minimize inflammation
  - improve function
  - prevent disability
- Early teamwork (Rheumatologist, Dermatologist, Physical Therapist and Primary Care Doctor)
- Drugs:

- Corticosteroids (Prednisolone, IV MP)
- Immunoglobulin (IV Ig)
- Methotrexate
- Others (Hydroxychloroquine, anti-TNF therapy)
- severe cases (Cyclophosphamide, Rituximab)

JDM – Treatment (cont.)

Other aspects of care:

- skin protection
- physical therapy
- speech therapy
- dietetic assessment
- management of calcinosis

different drugs used with poor response such as Pamidronate,Probenecid,Warfarin,colchicine, Aluminum hydroxide,Infliximab.


0

Henoch-Schonlin Purpura

- Small-vessel vasculitis
- Benign self-limiting ,unknown etiology, Multifactorial causes[genetic,environment, infection][grup A stepto,Mycoplasma,EBV, Hepatitis c,adenovirus,parvovirus,measles
- Deposition of[IgA, C3]immune complex in small vessels .
- HSP and IgA nephropathy (both have ▯ IgA and identical renal biobsy)
- Diagnosis is clinical
- Laboratory investigations to exclude other

HENOCH-SCHONLEIN PURPURA HSP

Purpura 100%

Arthritis 71%

Gastrointestinal involvement 68%

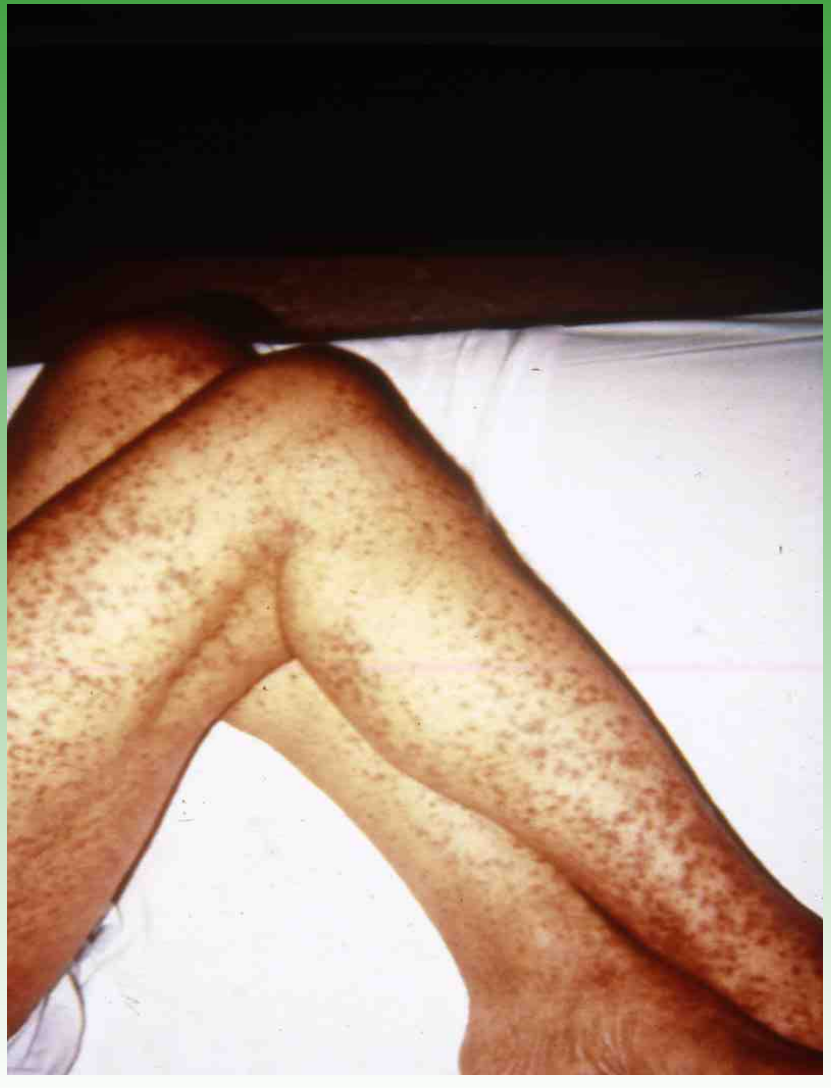
Renal involvement 45%

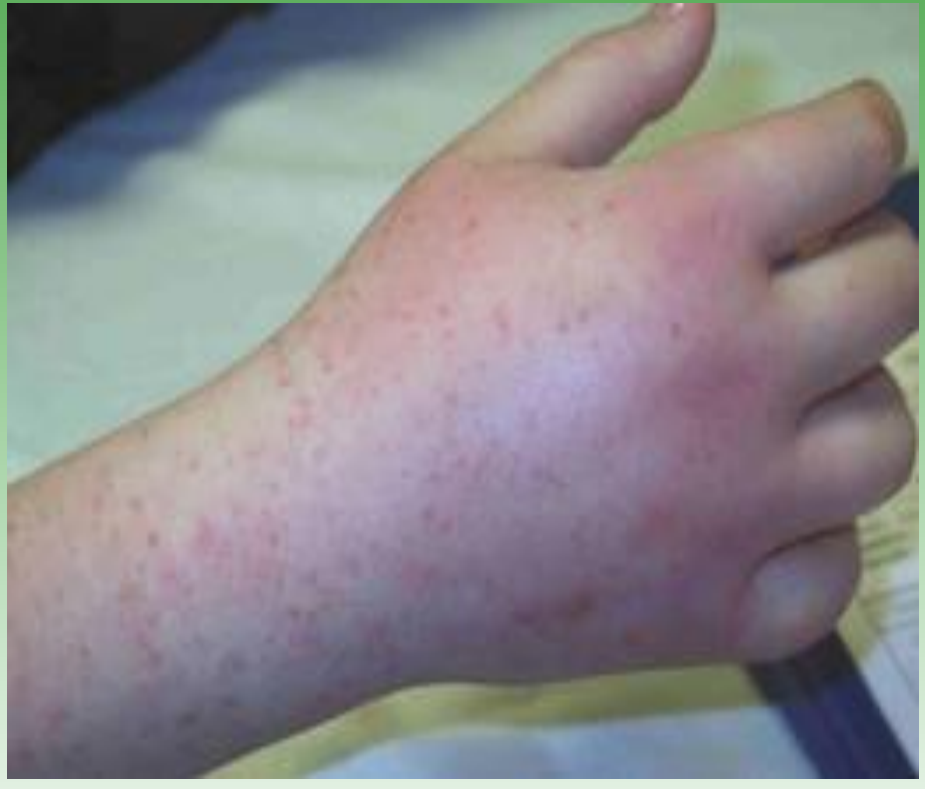
Fever 75%

Hypertension 13%

Subcutaneous oedema 20-50%

Scrotal oedema 2 – 35%





HSP - Treatment

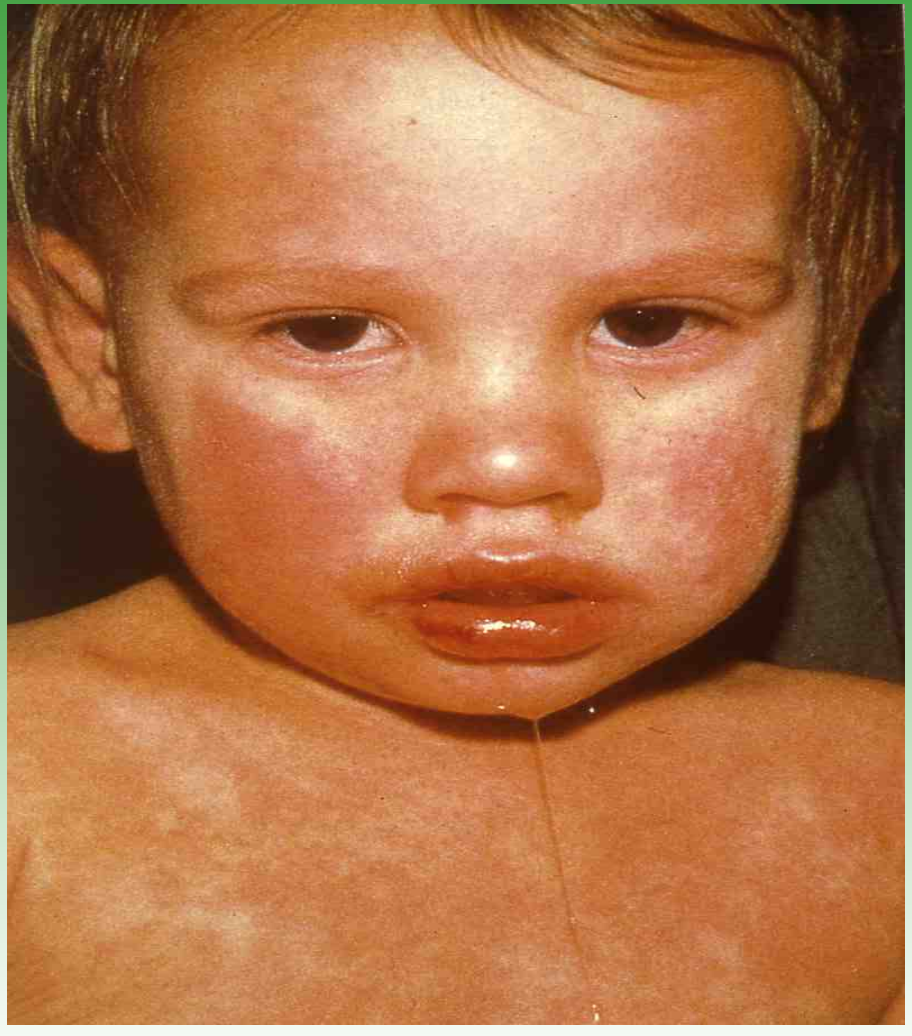
- Resolve spontaneously
- Treatment according to system involved

MSK – Ibuprofen[NSAID]

GIT - Corticosteroids (Prednisolone, IV MP)

Renal - Cyclophosphamide (Cytoxan)

- Azathioprine (Imuran)
- Mycophenolate mofetil (Cellcept)
- High dose IV immunoglobulin
- Plasmapheresis



Kawasaki's Disease (KD)=MCLS

- Small and medium vessel vasculitis (coronary artery)
- Unknown etiology[infection,genatic,autoim]
- Children under 5 years
- Diagnoses is clinical
- Laboratory studies to exclude other causes and look for complications (CBC – CRP – ECHO)

KAWASAKI'S DISEASE

Fever 95%

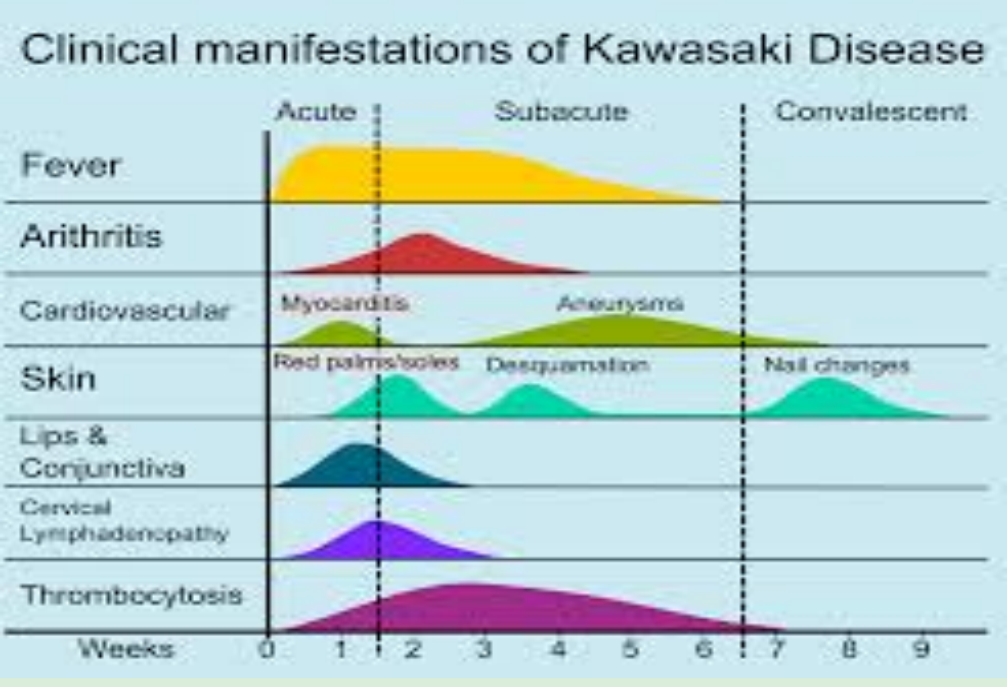
Conjuctival congestion 90%

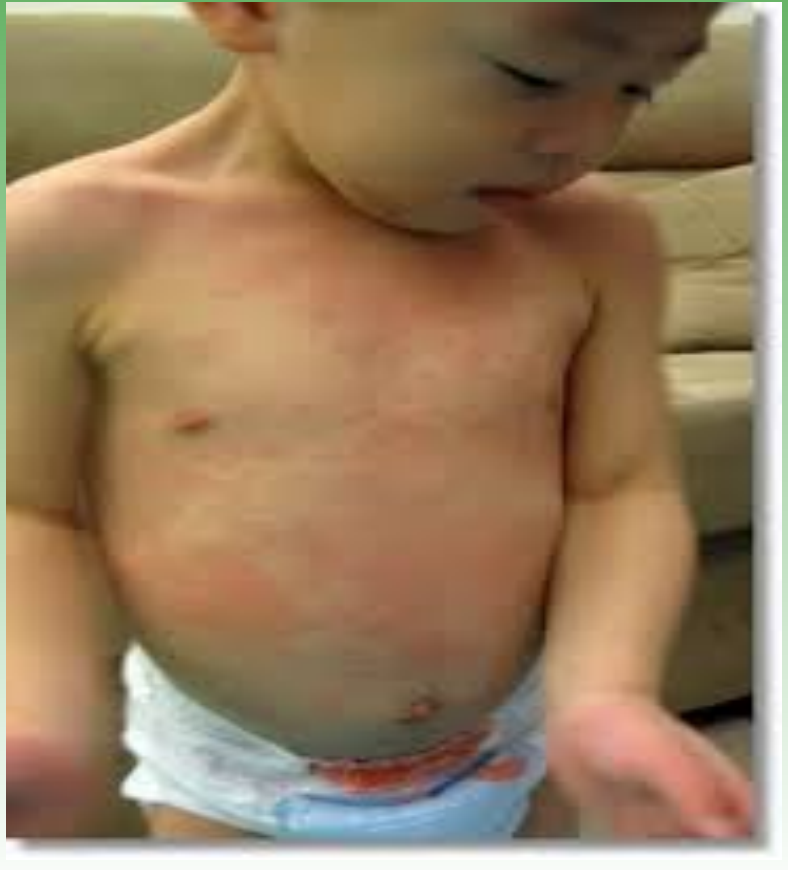
Exanthema 90%

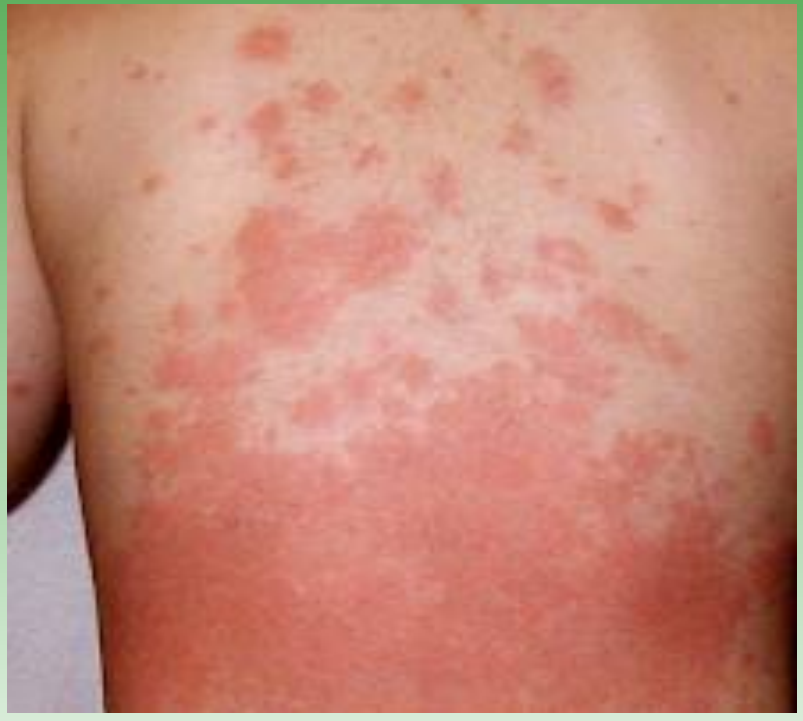
Oral mucosa involvement 90%

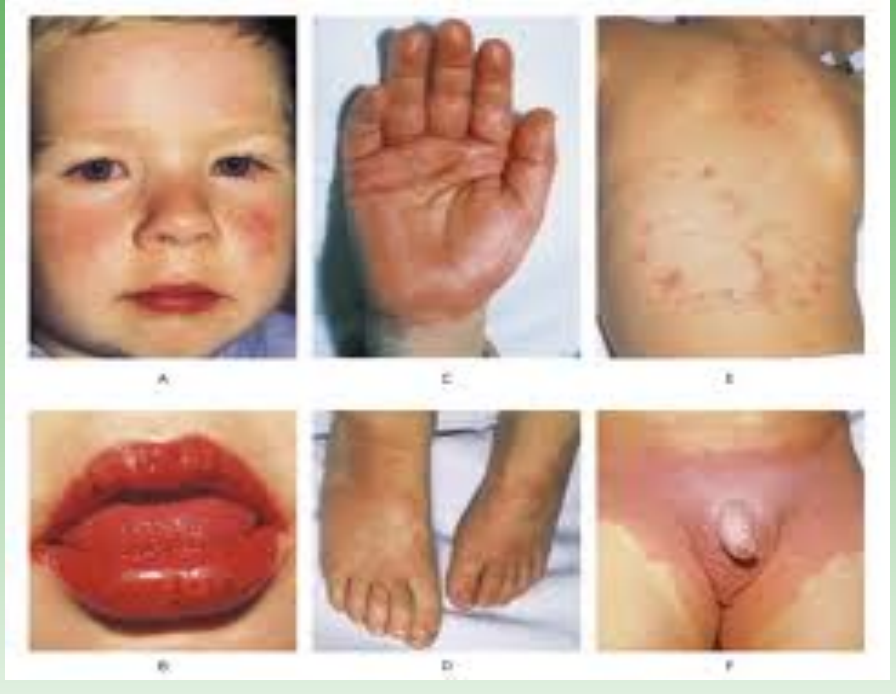
Desquamation 90%

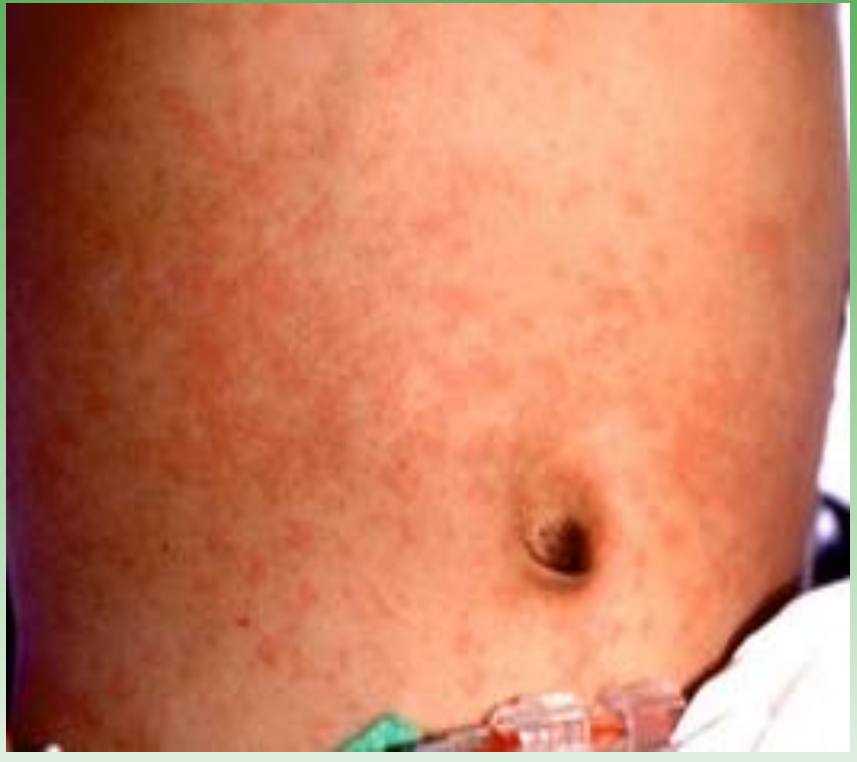
Cervical lymphadenopathy 75%

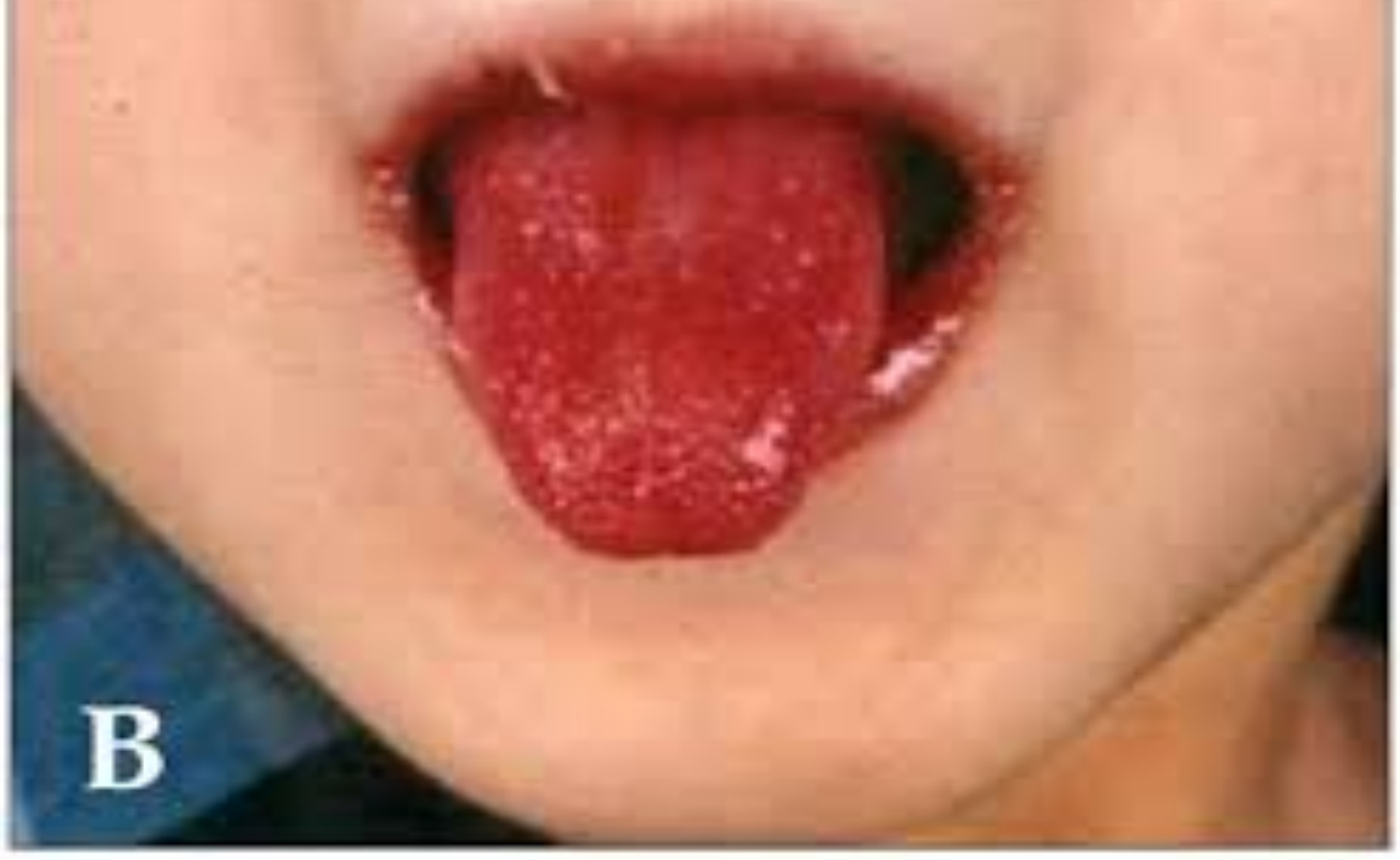

Clinical manifestations of Kawasaki Disease
Acute
Subacute
Convalescent
Fever
Arithritis
Cardiovascular
Myocarditis
Aneurysms
Skin
Red palms/soles
Desquamation
Nail changes
Lips & Conjunctiva
Cervical Lymphadenopathy
Thrombocytosis
Weeks
0
1
2
3
4
5
6
7
8
9







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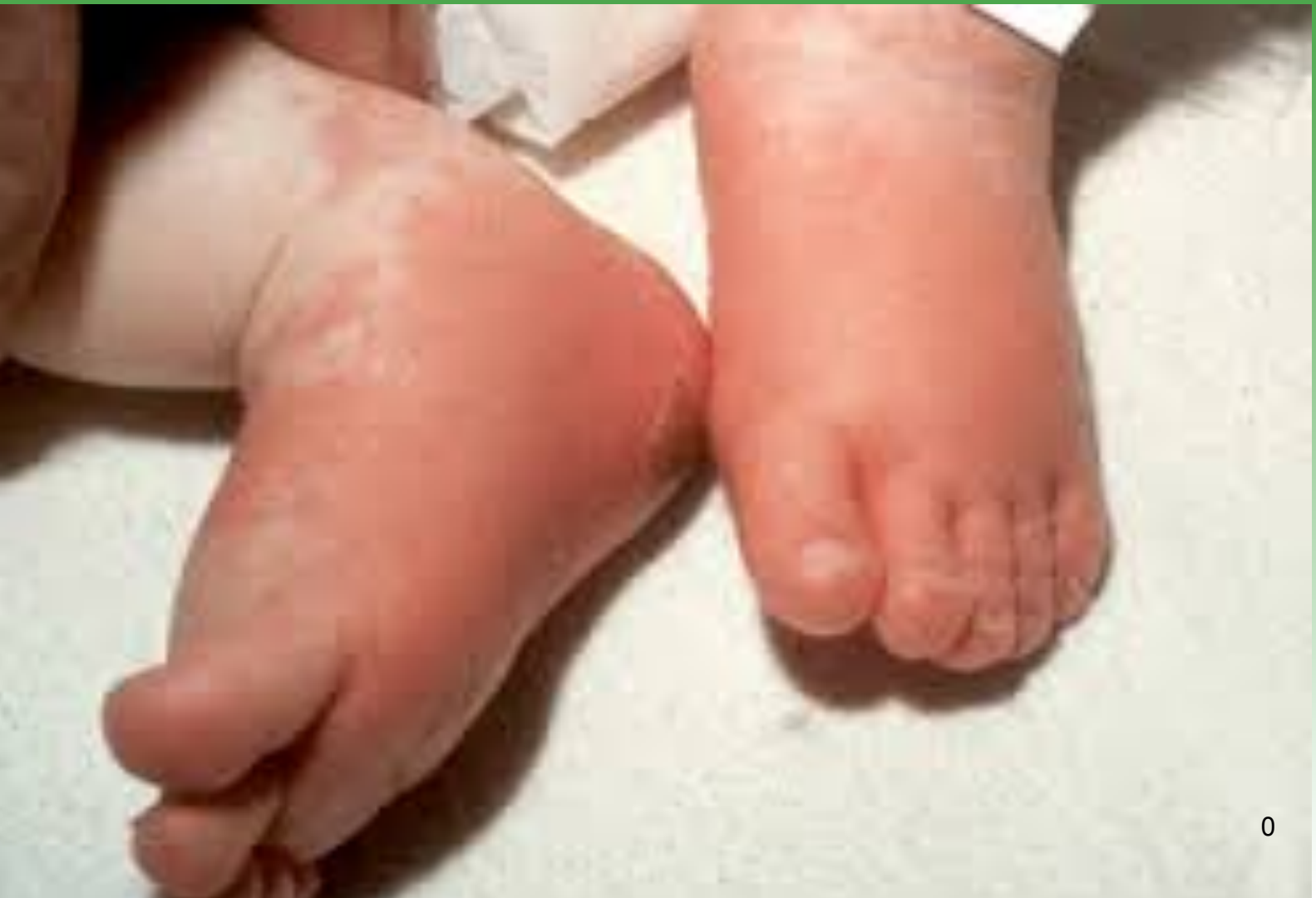
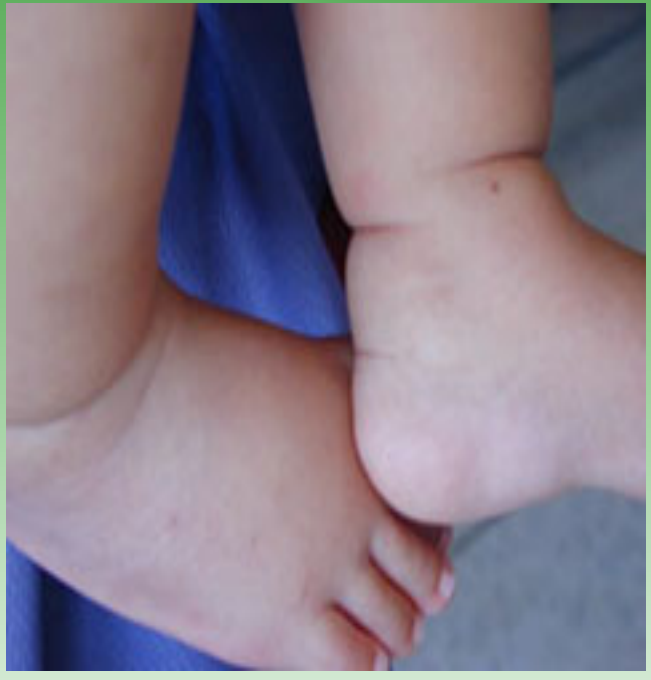
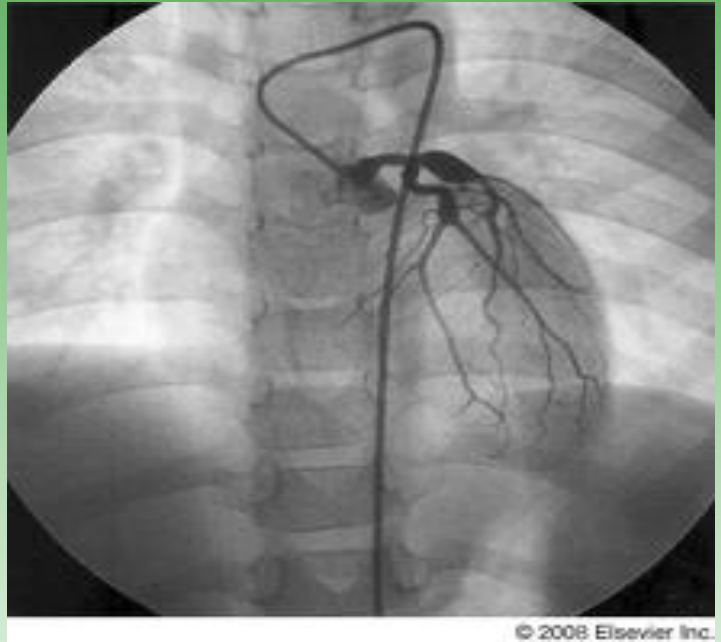






MCLS Diagnostic Criteria

For diagnosis the patients must have

.Spiking fever 5 days or more

+4 of

1. **Bilateral conjunctival injection**
2. **One orpharyngeal sign**
   Diffuse oropharyngeal Erythema
   Strawberry tongue
   Redness, dryness, and fissures of lip
3. **Polymorphous erythematous rash**
4. **cervical lymphadenopathy**

5. One or more of the following signs

Indurative edema of hands and feet

Erythema of palms and sole

Desquamation of fingers and toes

[2 weeks after onset]

Transverse grooves in nails

[2 or 3 months after onset]

Treatment of Kawasaki Disease

- High dose aspirin
- Low dose aspirin
- High dose IV immunoglobulin
- IV methylprednisolone
- Non-steroidal anti-inflammatory drugs
- Plasmapheresis (non-responding to IV Ig)
- Tumor necrosis factor (TNF) blocking drugs
  - Infliximab (Remicade)
  - Etanercept (Enbrel)

SPONDYLOARTHROPATHIES

Absence of rheumatoid factor(seronegative)

Involvement of sacroiliac and joints

Peripheral arthritis
(predominantly lower limb)

Enthesopathy

Familial clustering

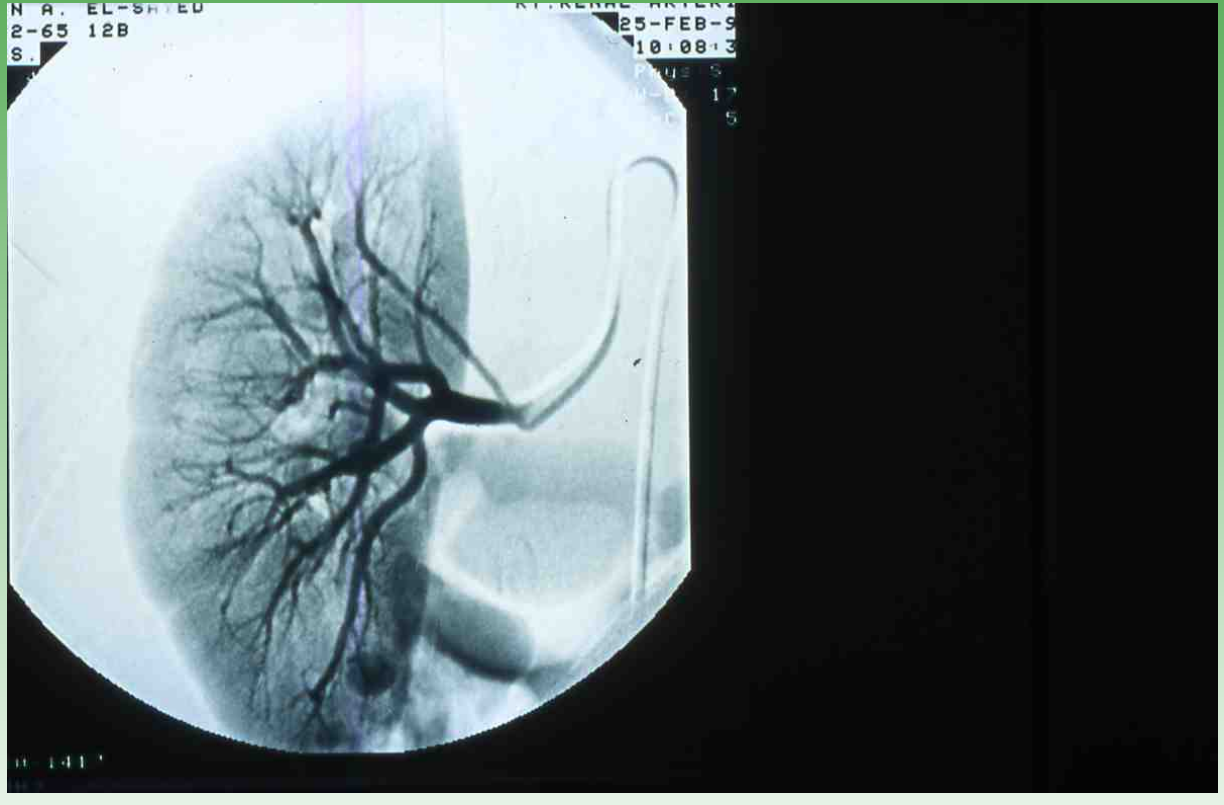
Increased incidence of HLA-B27

Common spectrum of extra- articular features (predominantly muco-cutaneous)

SPONDYLOARTHROPATHIES

- Ankylosing spondylitis
- Psoriasis
- (Whipple's disease)
- Ulcerative colitis
- Crohn's disease
- Reiters disease
- (Behçets Syndrome)
- Reactive arthritis

Thank YOU FOR LISTENING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