


Diagnosis

Clinical features In general:

- **Morning stiffness**
 - **Easy fatigability in early afternoon**
 - **Joint pain later in the day**
 - **Joint swelling**
 - **Involved joints often warm**
 - **lacks full range of movement**
 - **Occasionally painful on motion**
 - **Usually not erythematous**
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CLINICAL MANIFESTATIONS of JRA



Diagnosis cont...

Investigations: No single test diagnostic of JIA

Laboratory

Haematology:

1. **Ful blood examination** may reveal normochromic normocytic anaemia, neutrophil leukocytosis or thrombocytosis.

2. **ESR and CRP** : often raised; sometimes normal.

3. **Serum ferritin**: Disproportionately high in Systemic JIA

4. **Serum albumin**: Hypoalbuminemia is common in SOJIA

5. **Liver enzymes**: high in Systemic JIA

6. **Renal functions**

7. **Uric acid and LDH**: as a screening test for malignancy in children with fever and joint symptoms.

Serology:

1. **IgM rheumatoid factor**: 10% seropositive, high IgM RF titre carry a worse prognosis.

2. **ANA** :positive in 50% . positive ANA is a risk factor for silent uveitis in oligoarthritis JIA.

3. **Anti-ccp**: positive

Diagnosis cont...

Immunology:

1. **Immunoglobins:** IgG may be raised; occasionally IgA may be low or absent .
2. **Compliment:** C3 often elevated ; a low C2 may occasionally be found ; raised alpha-2-globulin.

HLA typing:

1. **B27** : positive in enthesitis-related arthritis in older males, psoriatic arthritis , arthritis associated with bowel disorders such as IBD.
2. **DR4:** positive in RF positive polyarthritis.
3. **DR8** : positive in oligoarthritis , ANA positive younger female.



Diagnosis cont...

Imaging:

A) Plain radiography: Plain radiographs are useful in excluding other differential diagnosis such as osteomyelitis, septic arthritis, trauma , and malignancy.

Common findings on plain X-ray include:

1. Soft tissue swelling.
2. Joint-space narrowing.
3. Periarticular osteoporosis.

(The above three are the most common findings in RF-negative JIA)

4. Joint erosions .
5. Leg-length discrepancy (accelerated maturation due to hyperaemia around the joint and low grade inflammation)

Diagnosis cont...

Radiographic changes(in Plain radiographs) in JIA

- **Early:** soft tissue swelling, e.g.blurring of infrapatellar fat pad on lateral knee radiograph and periarticular osteopenia.
- **Intermediate:** cortical erosions, joint space narrowing and subchondral sclerosis .
- **Late:**destructive joint changes with ankylosis, joint contractures, metaphyseal and diaphyseal changes and growth anomalies.



Diagnosis cont...

B) Ultrasound:

- Ultrasound can be useful in:
 1. Effusions (especially useful in hips , shoulders.)
 2. Synovitis/tenosynovitis (increased echogenicity with inflamed tissues).
 3. Guiding intra-articular therapy.

C) Magnetic resonance imaging (MRI):

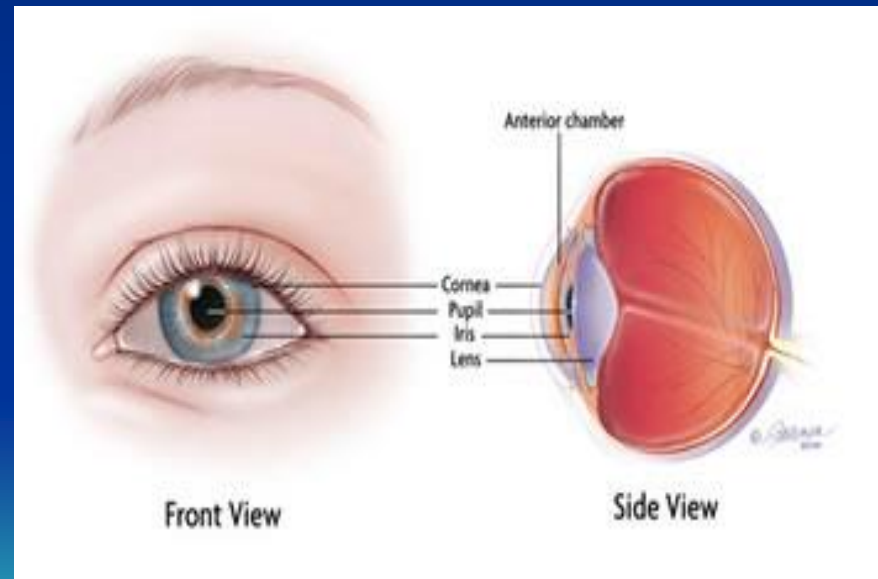
MRI is useful in demonstrating anatomy ,

1. Early joint damage.
2. Positive effects of treatment before they are clinically apparent.
3. Amount of inflamed synovium(when performed with gadolinium enhancement)
4. Long-term effects in difficult-to-monitor joints(cervical spine, TM joints , hips.)

Diagnosis cont...

D) Bone scan: to identify unrecognized sites of inflammation

E) Slit lamp examination of eye to exclude uveitis .



Differential diagnosis

1. SOJIA should be differentiated from malignancy and infection by bone marrow examination
2. Systemic lupus erythematosus
3. Reactive arthritis
4. Septic arthritis

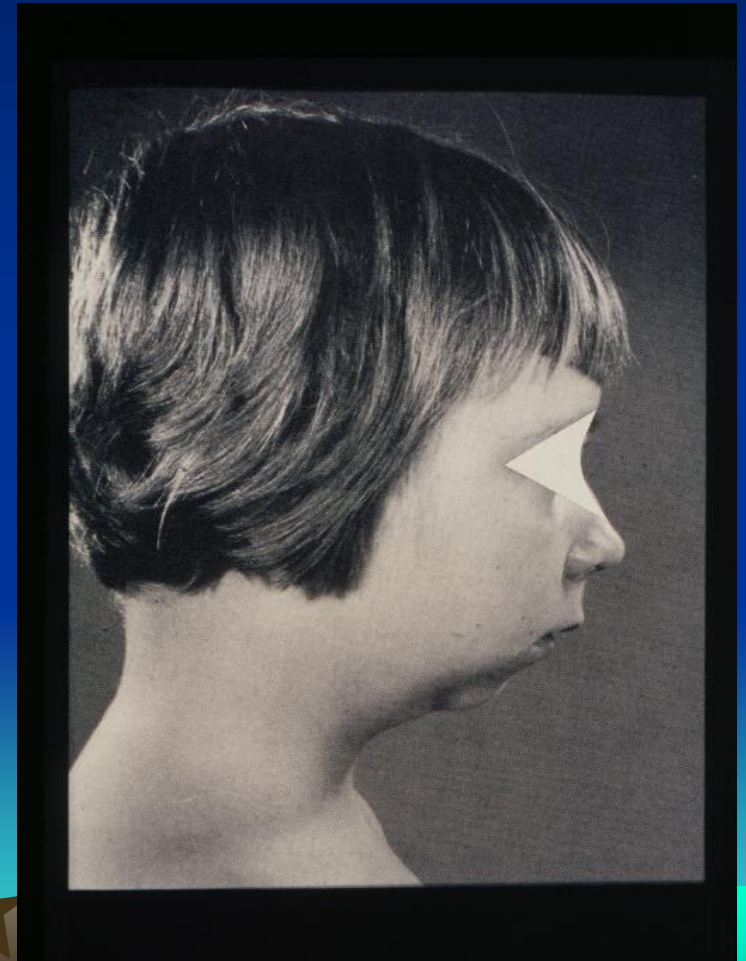


Complications..

- Joint destruction
- Leg length discrepancy, gait abnormalities
- Severe growth retardation
- Osteoporosis or osteopenia
- Muscle wasting
- Malnutrition,
- Anaemia of chronic disease,
- Chronic uveitis-higher in persistent pauciartthritis and ANA +ve patient.
- Untreated eye disease result in glaucoma, cataract, band keratopathy, blindness.
- Amyloidosis-in systemic arthritis.
- Macrophage activation syndrome: It is a rare but potentially life threatening complication of systemic JIA.

Complications Cont...

- **Micrognathia**
- **Atlantoaxial subluxation in poly arthritis RF+ve**
- **Mandibular asymmetry**
- **Complications of therapy**



Macrophage activation syndrome.

- Aetiology: it may be episode of viral infection ,may arise denovo or associated with SOJIA

Symptoms:

- High unremitting fever
- Lymphadenopathy and hepatosplenomegaly
- DIC, encephalopathy

Investigations:

- Pancytopenia , elevated liver enzymes and coagulopathy raises the suspicion of MAS.
- Hypertriglyceridemia and hyperferritinemia
- Decrease albumin,increase prothrombin time and partial thromboplastin
- Paradoxically normal ESR (secondary to drop in fibrinogen as a consumptive coagulopathy)