

Seronegative Spondylarthritis (SpA) ANKYLOSING SPONDYLITIS

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SpA clinical spectrum

- AS
- PsA
- ReA
- IBD-associated

General background

- **Inflammatory** disorder of unknown cause that primarily affects the **axial** skeleton; peripheral joints and **extra-articular** structures may also be involved .
- AS causes **pain, stiffness**, disability, decreased spinal mobility, and decreased quality of life
- **Not a classic Autoimmune disease**
- Disease usually begins in the **second or third decade**.
- M>F
- **HLA-B27** present in majority of cases

Common source of pathology

- Axial skeleton
- Sacroiliac joints
- Uvea
- Intestinal mucosa

Ankylosing spondylitis (AS)

Clinical Features of AS

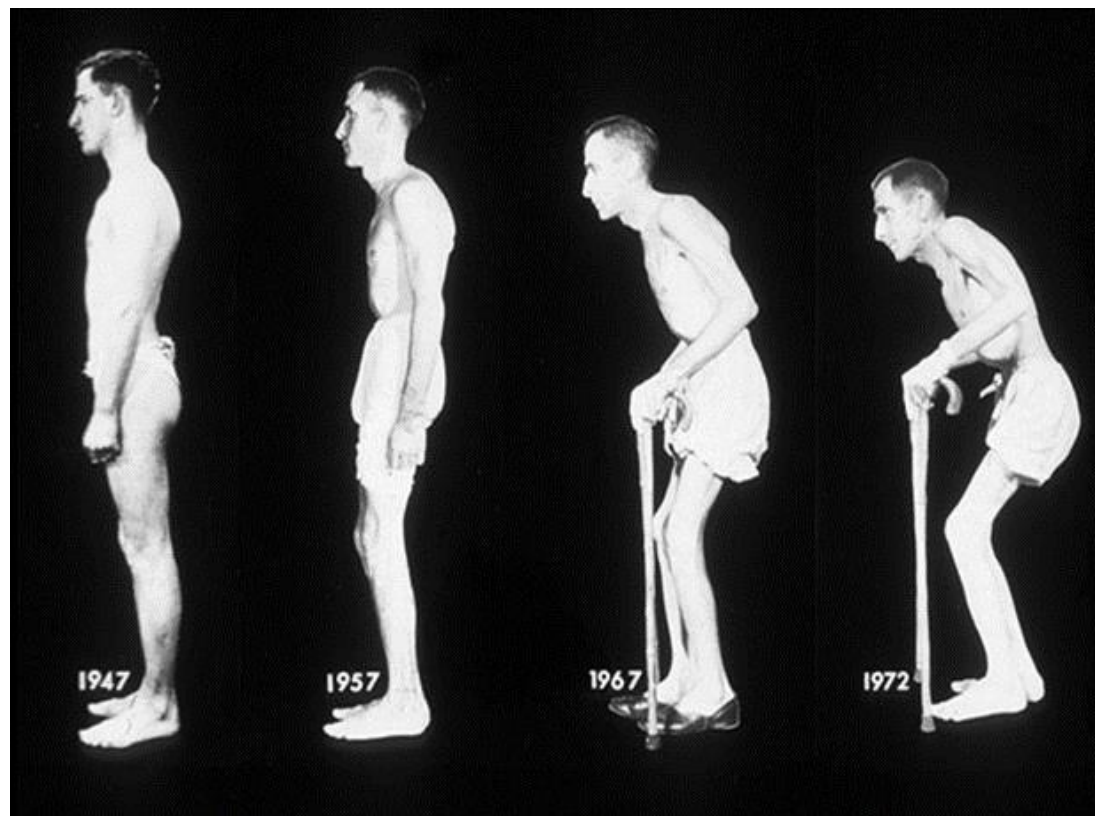
Skeletal	<p>Axial arthritis (eg, sacroiliitis and spondylitis)</p> <p>Arthritis of 'root joints' (hips and shoulders)</p> <p>Peripheral arthritis uncommon</p> <p>Others: enthesitis, osteoporosis, vertebral, fractures, spondylodiscitis, pseudoarthrosis</p>
Extraskeletal	<p>Acute anterior uveitis(TMC)</p> <p>Cardiovascular involvement</p> <p>Pulmonary involvement (aspergillosis)</p> <p>Microscopic colitis</p> <p>Amyloidosis, miscellaneous</p>

Clinical features

Initial symptoms

- Insidious onset **dull pain in lower lumbar or gluteal region**
- Low-back morning stiffness
- Pain usually becomes persistent and **bilateral**.
- **Nocturnal** exacerbation
- Predominant complaint **Back** pain or stiffness.
- Bony tenderness may present at **costosternal junctions**, spinous processes, iliac crests, greater trochanters, ischial tuberosities, **tibial tubercles** and **heels**.
- **Neck pain** and stiffness from involvement of the cervical spine

- Arthritis in the **hips and shoulders (“root” joints)** : in 25 to 35% of patients.
- Arthritis of other peripheral joints: usually asymmetric.
- **Pain tends to be persistent early** in the disease and then becomes intermittent, with alternating exacerbations and quiescent periods.
- In a typical severe untreated case- the patient's posture undergoes characteristic changes, with obliterated lumbar **lordosis**, **buttock atrophy**, and accentuated **thoracic kyphosis**. There may be a **forward stoop** of the neck or flexion **contractures** at the hips, compensated by flexion at the knees.



TESTS and MEASUREMENTS for AS

Cervical mobility

- Occiput-to-wall distance
- Tragus-to-wall distance
- Cervical rotation

Thoracic mobility

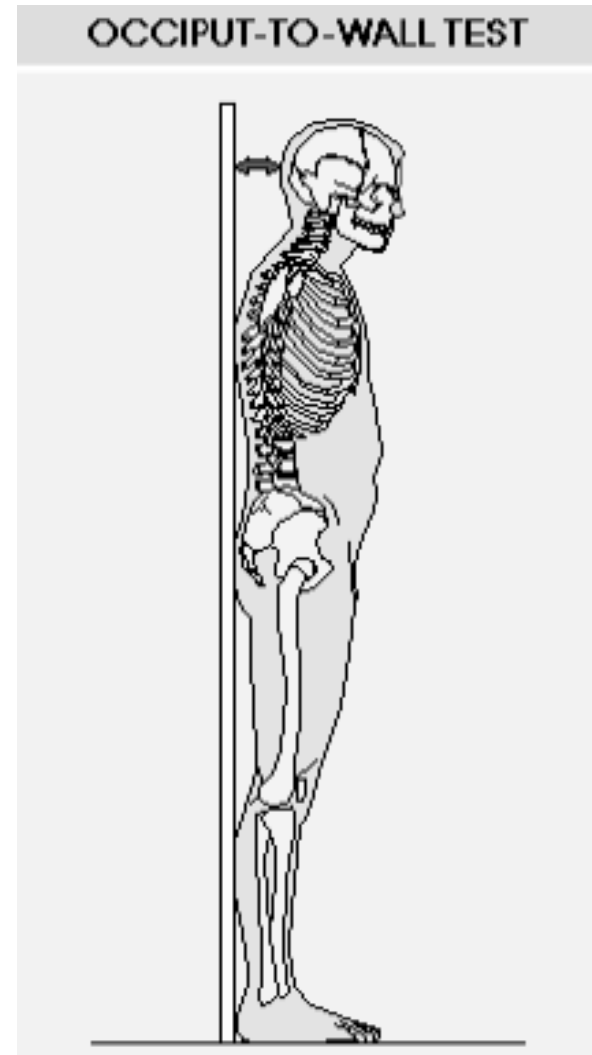
- Chest expansion

Lumber mobility

- ☐ Modified Schober index
- ☐ Finger-to-floor distance
- ☐ Lumber lateral flexion

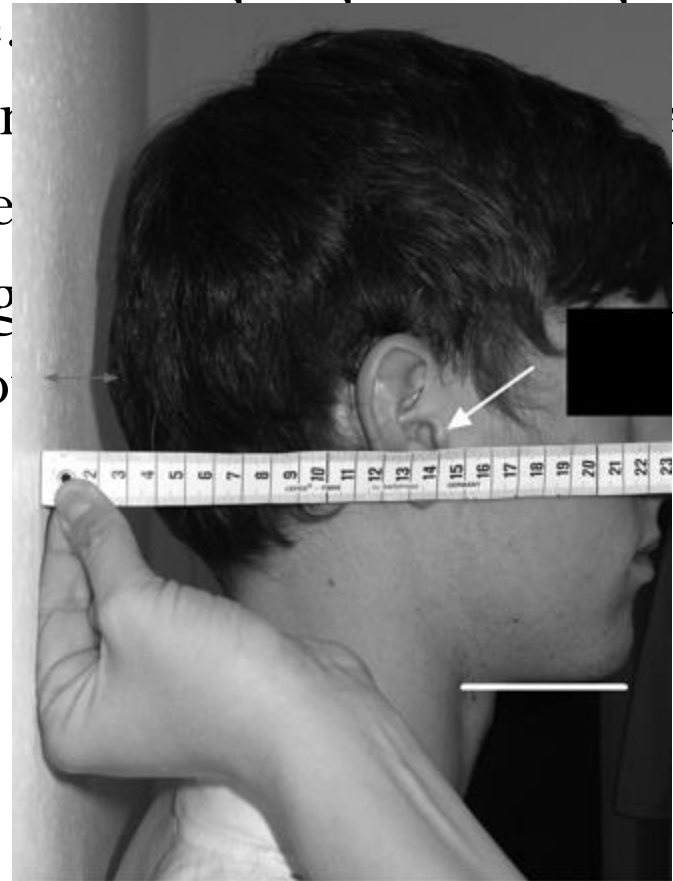
Occiput To Wall Distance / Flesche Test

- The occiput to wall distance should be zero



Tragus-to-wall distance

- Maintain starting position i.e. position (anatomical alignment) as possible. Measure distance between wall on both sides, using a rigid extension, rotation, flexion of



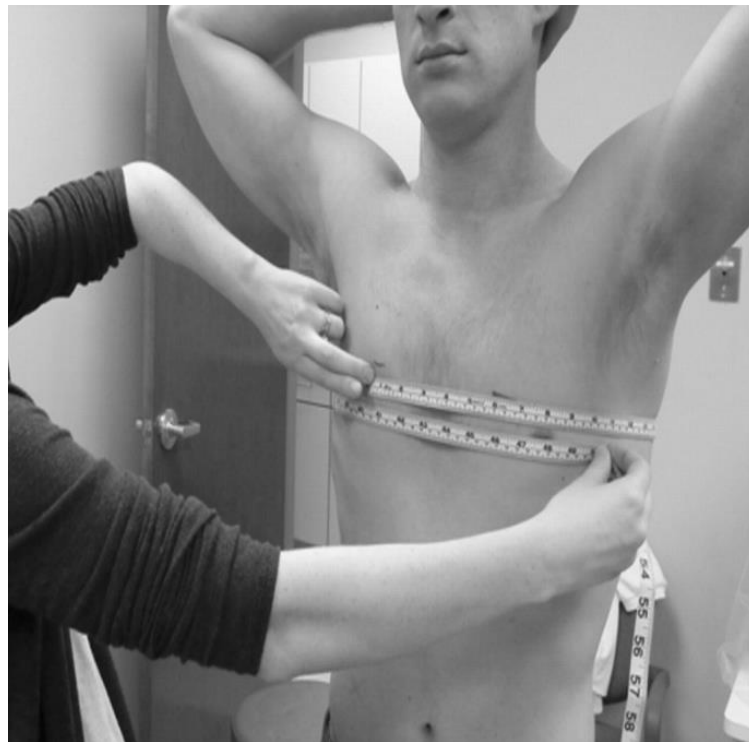
Cervical rotation



Normal ROM: 70-90°

Chest expansion

- Measured as the difference between maximal inspiration and maximal forced expiration in the fourth intercostal space in males or just below the breasts in females. Normal chest expansion is ≥ 5 cm.
- New cut points: 2.5

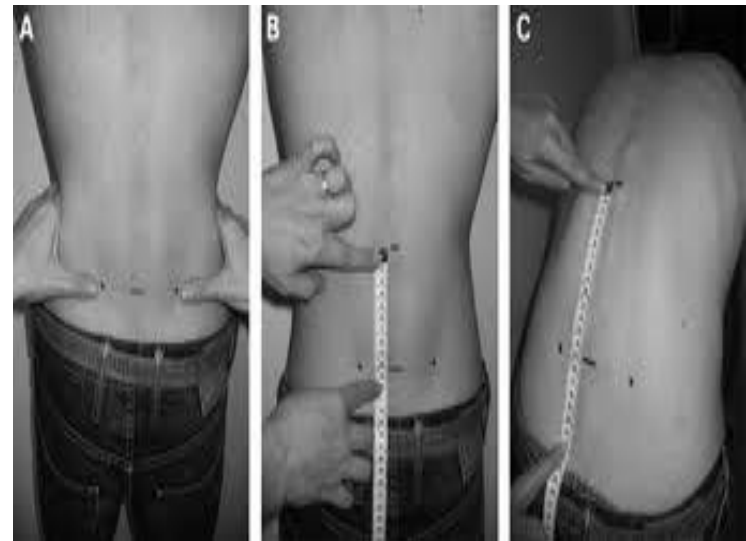


Lumbar flexion (modified Schober)

- With the patient standing upright, place a mark at the **lumbosacral junction** (at the level of the **dimples of Venus** on both sides). Further marks are placed 5 cm below and 10 cm above.

- The distance less than 5 cm is abnormal

- New cut points: 2 cm



Finger to floor distance



Lateral spinal flexion

Greater than 10cm is normal.



>>>>



>>>>



Sensitivity and specificity of TESTS FOR SACROILITIS

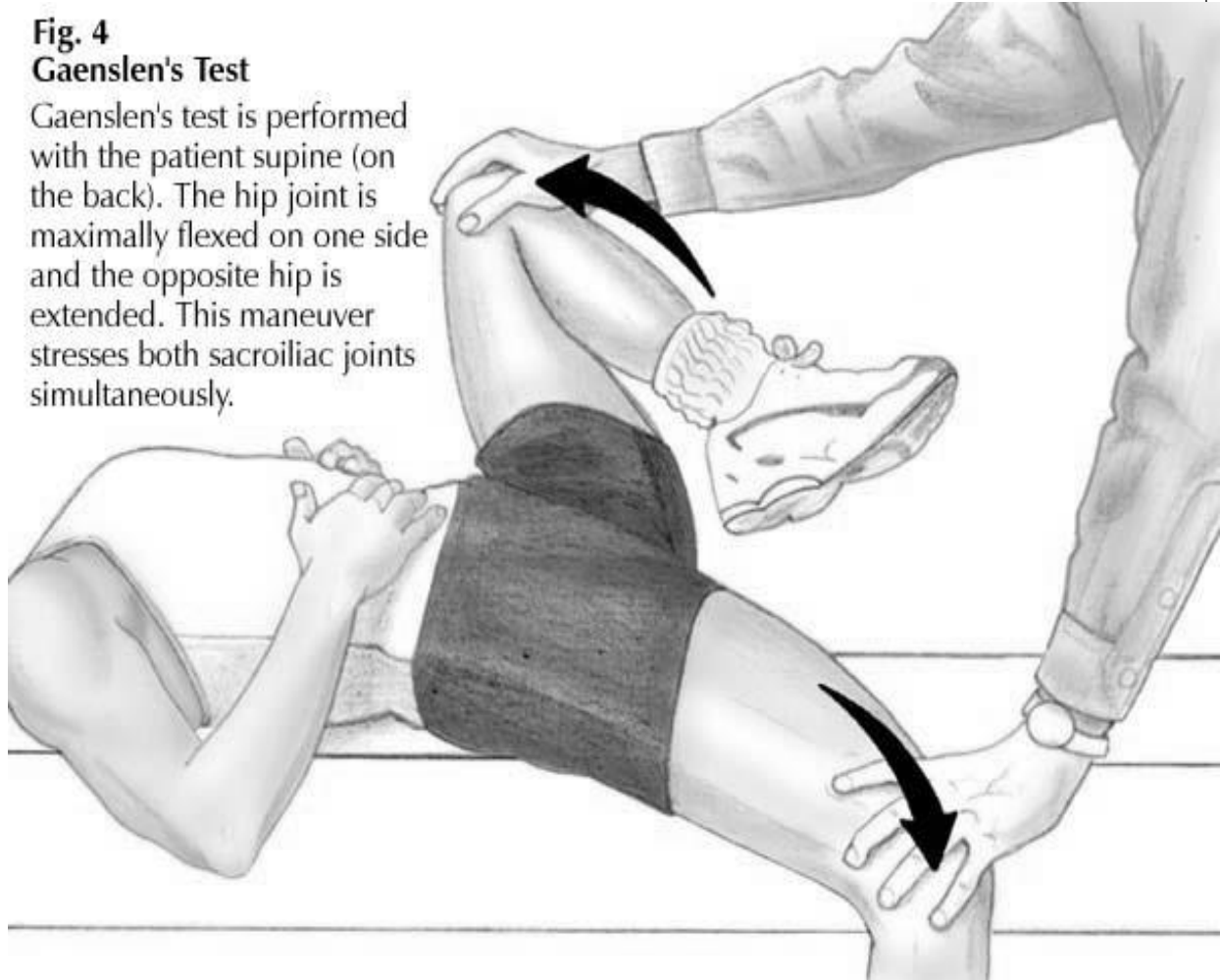
- Pelvic compression test
- Faber test
- Gaenslen Test
- Pump Handle test
- Gillette test

GAENSLEN TEST

Gaenslen test stresses the sacroiliac joints,
Increased pain during this test could be indicative of joint disease.

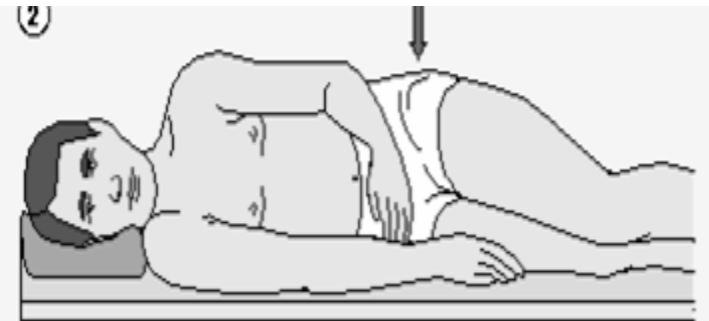
Fig. 4
Gaenslen's Test

Gaenslen's test is performed with the patient supine (on the back). The hip joint is maximally flexed on one side and the opposite hip is extended. This maneuver stresses both sacroiliac joints simultaneously.



PELVIC COMPRESSION TEST

- Test irritability by compressing the pelvis with the patient prone. Sacroiliac pain will be lateralised to the inflamed joint.

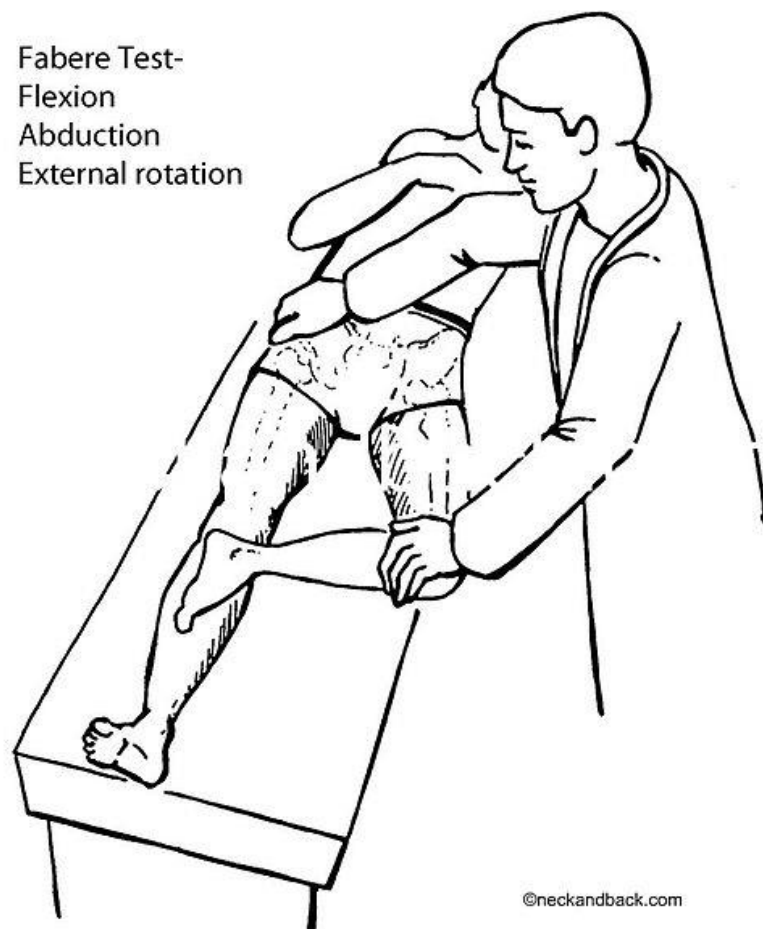


Patrick's test or FABER test

- The test is performed by having the tested leg flexed, abducted and externally rotated. If pain results, this is considered a *positive Patrick's test*.



Fabere Test-
Flexion
Abduction
External rotation



Laboratory tests

- HLA B27: present in $\approx 90\%$ of patients
- HLA B07: as a predictor
- CRP and rarely ESR
- Mild anemia.
- Elevated serum IgA levels.
- ALP & CPK raised.

X-RAY

Sacroiliitis-

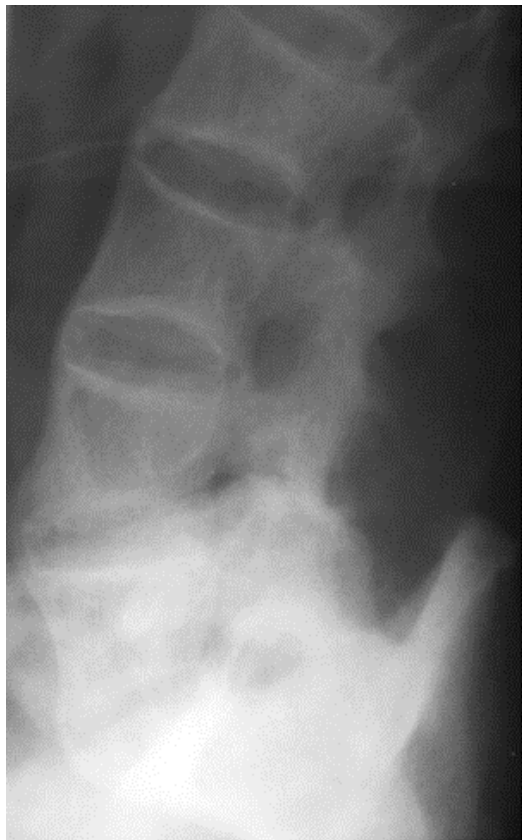
- Early: blurring
- Followed by erosions and sclerosis.
- pseudo widening
- Ankylosis
- Symmetric
- **Dynamic MRI** is the procedure of choice for the diagnosis of sacroiliitis.



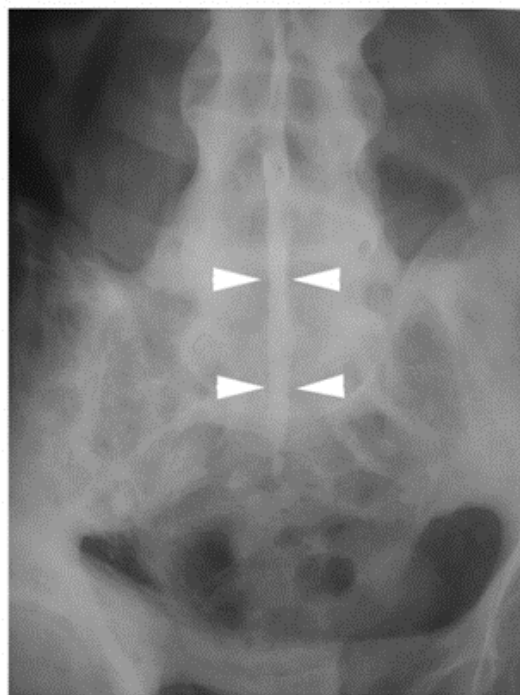
Lumbar spine:

- Loss of lordosis/ straightening
- Diffuse osteoporosis
- Formation of marginal **syndesmophytes**
- **Romanus lesion... “squaring”**
- Ossification of supraspinous & interspinous ligaments
dagger Sign”.
- Later **Bamboo spine appearance** when ankylosis of spine occurs.
- **Odontoid erosion.**





(a)



(b)

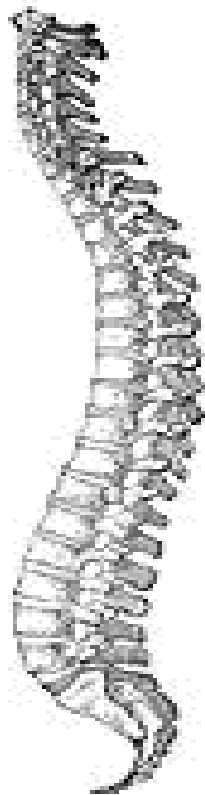
Dagger sign



Pathogenesis of AS

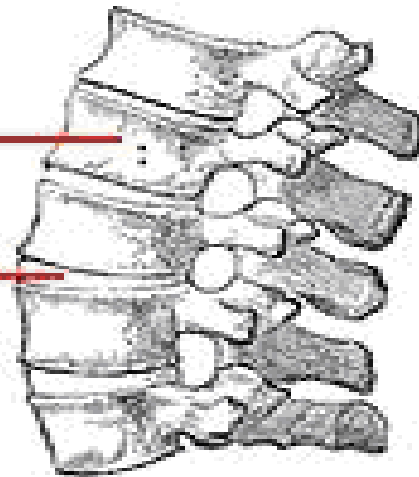
- Interaction between HLA-B27 , microbes and T-cells

1. Normal Spine

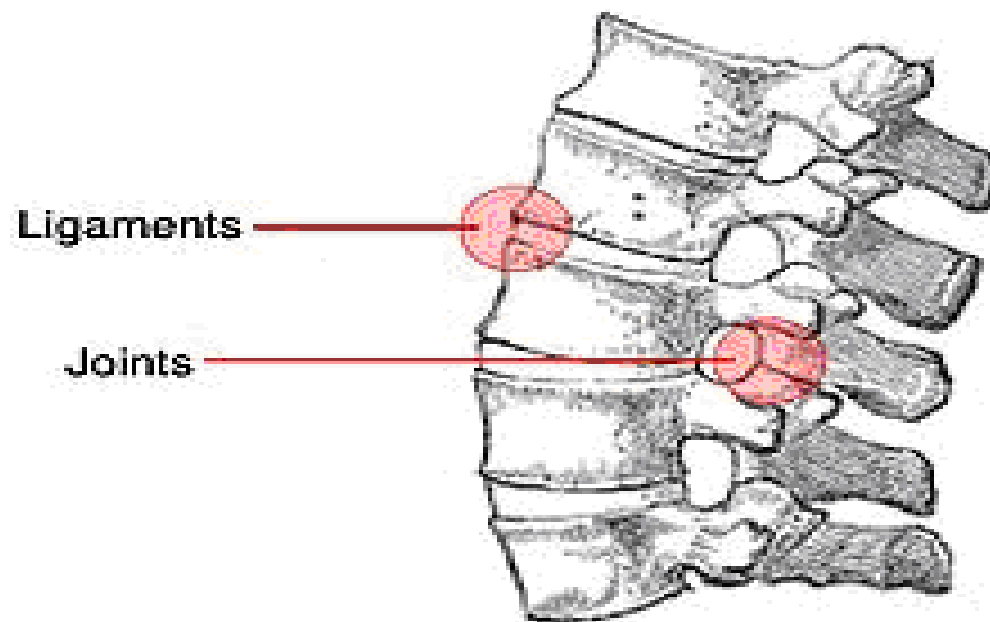


Vertebra

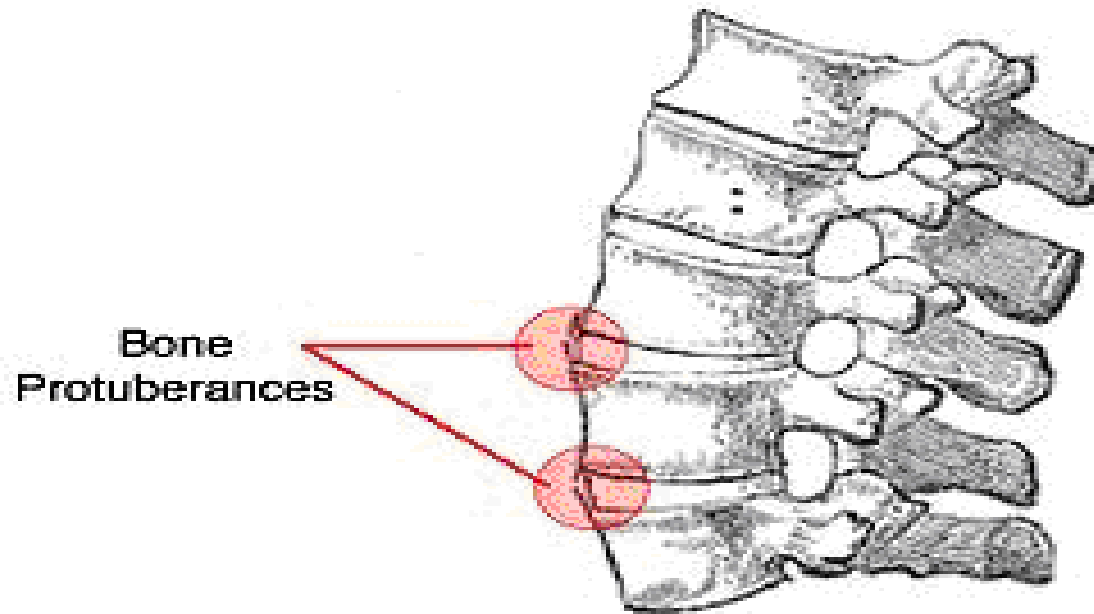
Disc



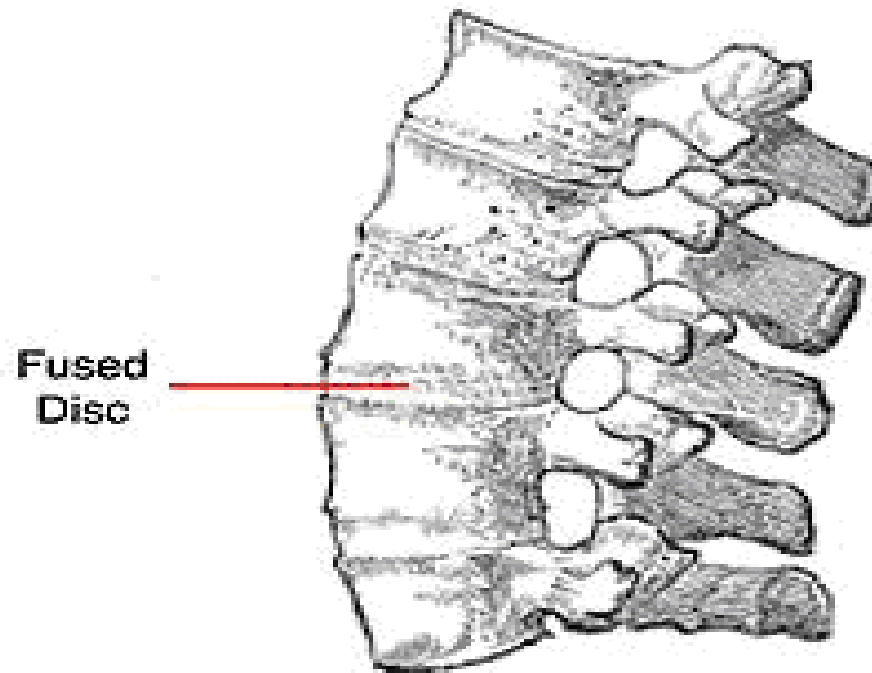
2. Inflammation



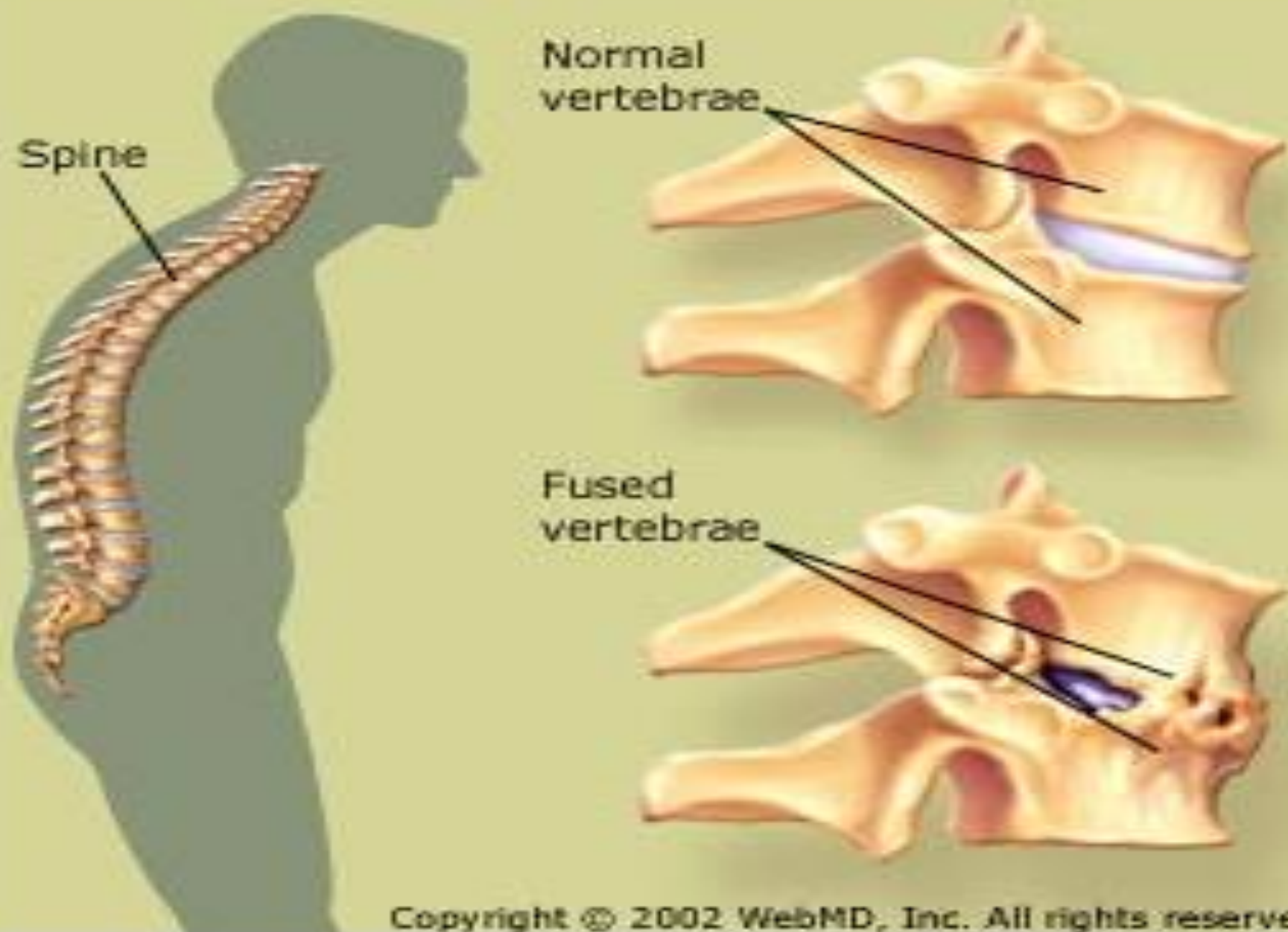
3. Formation of Syndesmophytes



4. Fusion



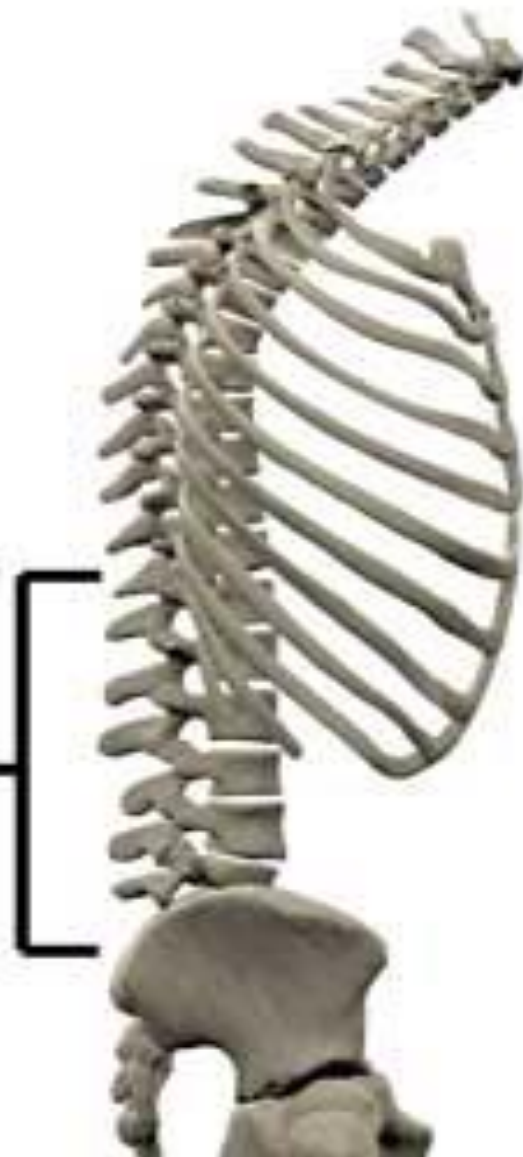
Ankylosing Spondylitis



**Normal
S - Curve
of Spine**

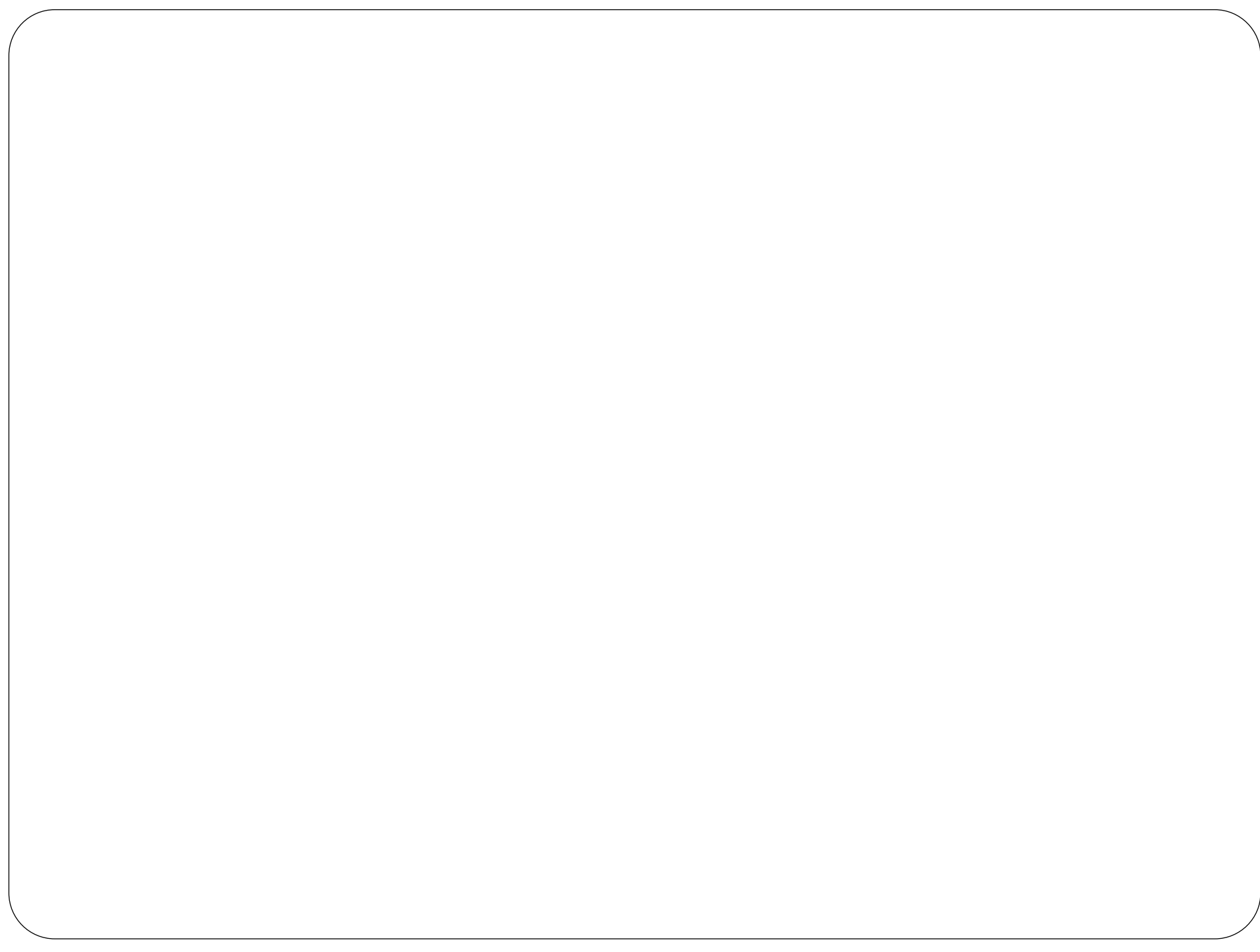


**Flattened
Area of
Lower
Back**



Pathology

- The **enthesis**, the site of ligamentous attachment to bone, is thought to be the primary site of pathology.
- **Enthesitis** is associated with prominent edema of the adjacent bone marrow and is often characterized by *erosive lesions* that eventually undergo ossification.
- **Highly vascular Synovitis** follows and may progress to **pannus formation**
- The eroded joint margins are gradually replaced by **fibrocartilage regeneration** and then by **ossification**. Ultimately, the joint may be totally obliterated.



SpA clinical spectrum

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Clues to early diagnosis

- Curious Hx taking of inflammatory pain
- Age
- IBS/IBD
- STD/ GE
- Nail and skin
- Rather normal imaging in early phases

Treatment

1. Regular physical therapy
2. NSAIDS
3. **Sulfasalazine**, in doses of 2 to 3 g/d- Effective for mostly peripheral arthritis
4. **Methotrexate**, in doses of 10 to 25 mg/wk- primarily for peripheral arthritis
5. **Local Corticosteroids injection** for persistent synovitis and enthesopathy
6. Medications to avoid: long term Systemic Corticosteroids
7. **Anti-TNF- α therapy** - heralded a revolution in the management of AS.
 - Infliximab (chimeric human/mouse anti-TNF- α monoclonal antibody)
 - Etanercept
8. Pamidronate, thalidomide
9. Most common indication for surgery; severe hip joint arthritis, total hip arthroplasty.

Common mistake (myths) on Dx.

- ~~Rheumatism is a rare condition!~~
- ~~Mechanical pain does not excludes~~
- ~~Dx is muscle spasm~~
- ~~HLA is a good diagnostic tool (vs. FBS, TSH in DM and hypo)~~
- ~~all should have SIJ involvement~~
- ~~all should have CRP/ ESR elevation~~
- ~~all should have dramatic response to NSAIDs~~
- ~~all should have X-ray findings~~
- ~~Normal MRI Rules out SpA~~
- ~~MRI indicating Disc diseases is against the Dx.~~
- ~~Modic/Andersson lesions are degenerative~~

Common mistakes in management

- Underestimating the role of life style
- Under-emphasizing physical therapy and rehab

Common mistakes in drug management

- Underdosing NSAIDs
- Proper NSAID selection
- GI protection
- Co-morbid condition; HTN, APD, CAD, CHF, CRF
- SSZ
- MTX

Our suggestions for optimal management

- Life style
- Smoking
- Regular exercise
- Topical Phenylbutazone
- Consolidate NSAID
- Low dose Altebrel for slim/ fit patients
- CinnoRa for oversize peoples
- HBS HCV PPD screening ?
- CXR screening ?

Take home message

Useful link for rheumatology update

<https://zil.ink/drowlia>

Thank you for your kind attention