

# Ankylosing Spondylitis

## Indications of Surgical Intervention in Severe & Neglected Cases



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ΟΜΙΛΟΣ ΙΑΤΡΙΚΟΥ  
ΑΘΗΝΩΝ  
Ιατρικό Κέντρο Αθηνών



STARANTZIS  
SPINE SURGERY

OSTEON  
ORTHOPEDIC & SPINE CLINIC

# Rheumatologic Conditions Affecting the Spine

- Rheumatoid Arthritis

~85% Positive RF

- Ankylosing Spondylitis

- Psoriatic Arthritis

- Reiter Syndrome

- Diffuse Idiopathic Skeletal Hyperostosis

Seronegative

# Ankylosing Spondylitis

- AS is a **chronic systemic seronegative inflammatory disease** of **unknown origin** that primarily affects the axial spine
- The most common SPA (psoriatic, reactive, inflammatory bowel disease related, undifferentiated)
- Prevalence 0.1-8.2 : 100000 general population
- 90% of the patients are HLA-B27 positive (remember 5-10% of Caucasian are HLA-B27 +ve anyway)
- Male: female 2-7:1
- Onset between 15 and 35 years of age
- Diagnosis can take up to 10 years to be made

# Ankylosing Spondylitis

- ?binding of HLA-B27 to a peptide in the joint stimulating a pathological cascade
- ?HLA-B27 individuals are more susceptible to certain microorganisms (Klebsiella pneumoniae) leading to disease producing synovitis
- ? Autoimmunity against HLA-B27 by cytotoxic T-cells

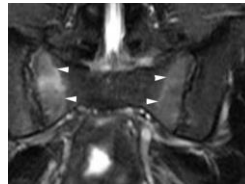
•Enthesitis rather than synovitis

•Enthesitis leads to bony erosion followed by reactive bone formation and eventual ankylosing

•Bridging syndesmophytes

•Affects the axial spine

•Sacroiliitis



# Ankylosing Spondylitis

- **Aseptic discitis** in approx. 20% of AS Pt
- 40-50% exhibit **osteopenic or osteoporotic** lumbar vertebrae
- Loss of trabecular bone and stiffness raise the **risk of fracture after minor trauma** (5% and increases with age to 15% at the age of 42 or older)
- Progressive Kyphosis – **Sagittal imbalance**



# AS

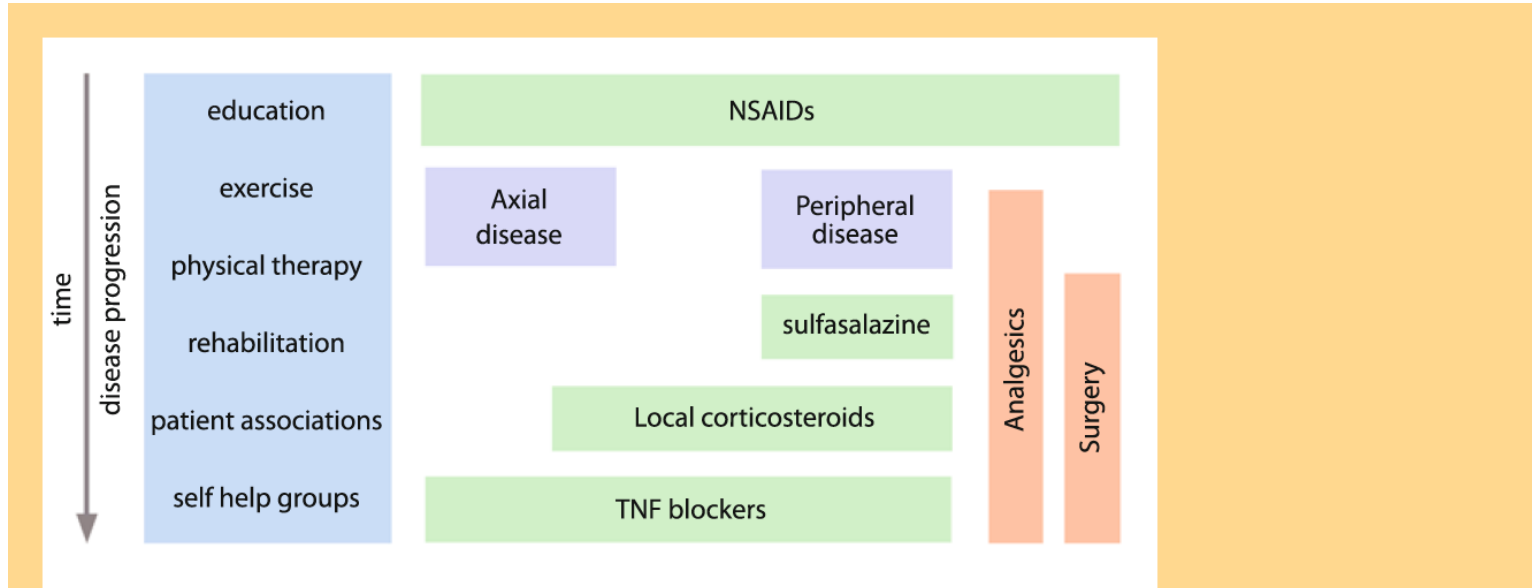
- The imaging modalities of choice are **plain radiographs** (erosion of the iliac side of the joint, bamboo spine) and **MRI** (detects inflammation, evaluating for haematomas in trauma)
- CT** is useful for diagnosing occult fractures and for pre op planning
- AS is treated non op** by analgesics, anti-inflammatories and physiotherapy

# Ankylosing Spondylitis

## Non-spinal manifestations

- Large joint arthritis
- Acute anterior uveitis
- Renal amyloidosis
- Ascending aortic abnormalities
- Cardiac conduction abnormalities

# AS



**Figure 2. Treatment recommendations**

ASAS/EULAR flowchart summary (modified) of the recommended management of AS based on clinical expertise and research evidence [110].



# Sx with Vs for AS

## Sx WITH AS

- FRACTURES (low energy-osteoporosis –stifness)
- Degenerative Disease (STENOSIS) rare

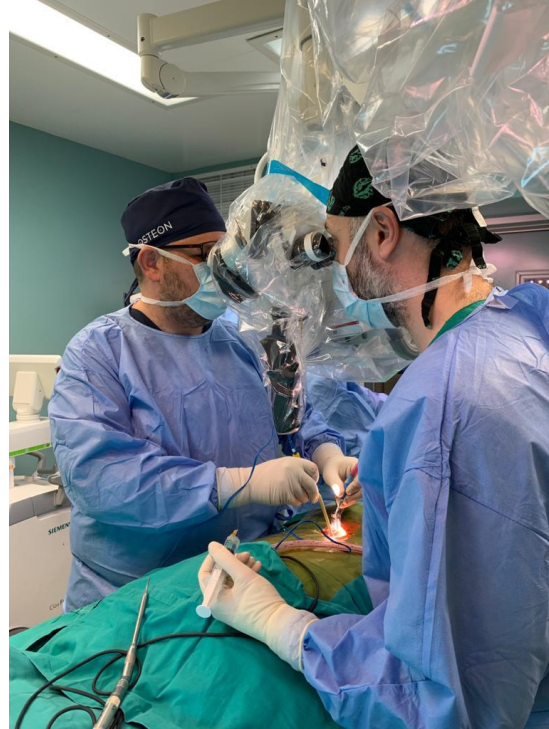
## Sx FOR AS

- **FIXED DEFORMITY**
  - Neck
  - Back
  - Global

# Sx with AS Fractures

## Sx WITH AS

- Degenerative Disease (STENOSIS) rare
- Major issues
  - Difficult intubation
  - Epidural haematoma
  - Aortic insufficiency



# Sx with AS Fractures

## Sx WITH AS

- FRACTURE
- Degenerative Disease (STENOSIS) rare
- Major issues
  - occult fractures
  - Bad chest
  - Difficult intubation
  - Aortic insufficiency
  - High risk of Pseudarthrosis
  - Long fusions
  - Haematoma-SC compression
  - Epidurals -> bleeding

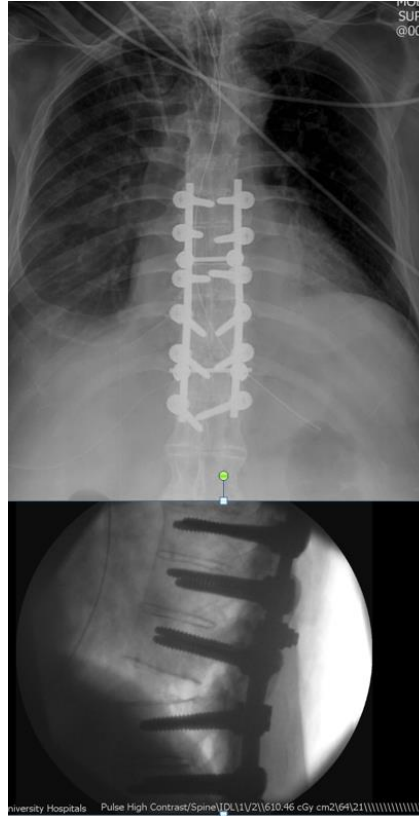
# Ankylosing Spondylitis Fracture T10/11



## Pre op



## Intra op-ICU



## Follow up

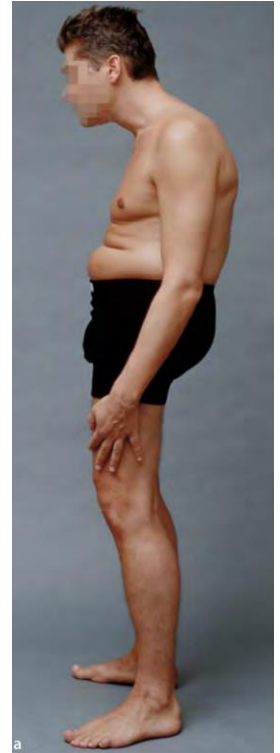


# Sx for AS

## Fixed Deformity

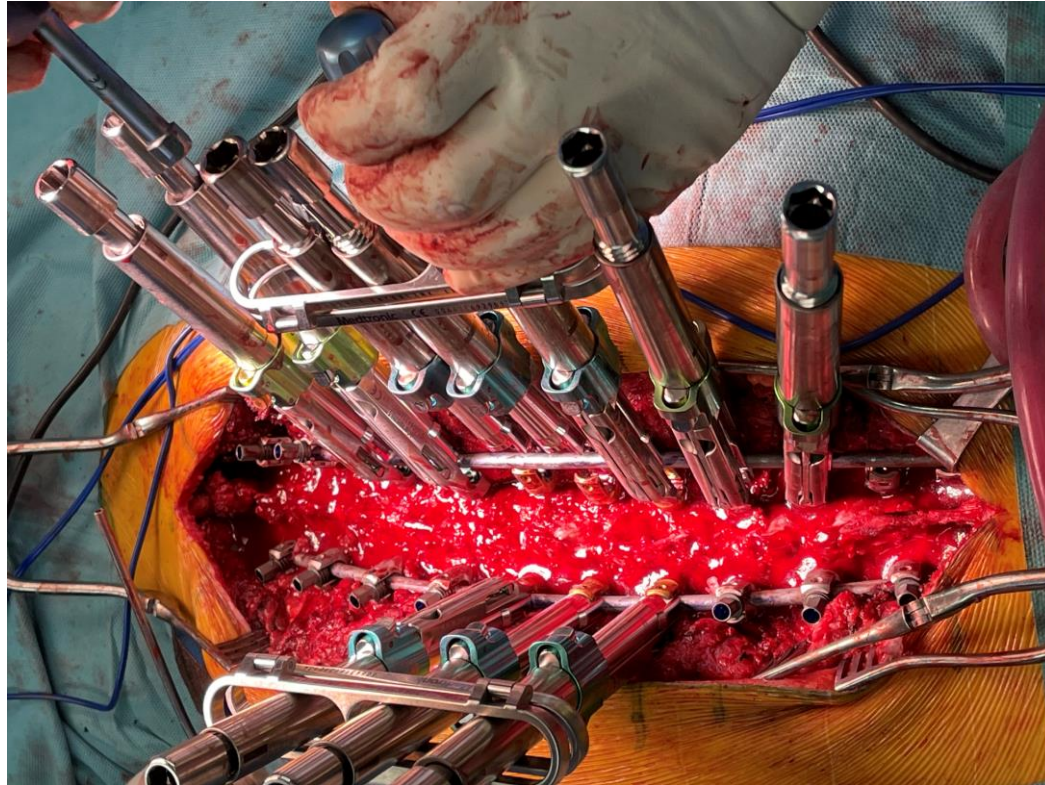
- **FIXED DEFORMITY**

- Neck
- Back
- Global





# MIS Surgery NOT



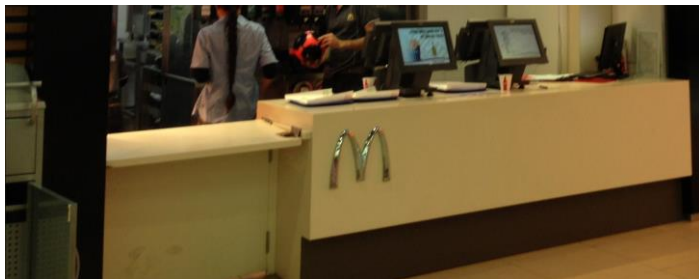
# Chin to Chest Deformity



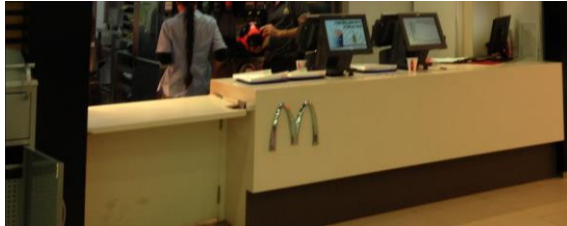


# Surgery too risky

## McDonald Menu test critical in decision making



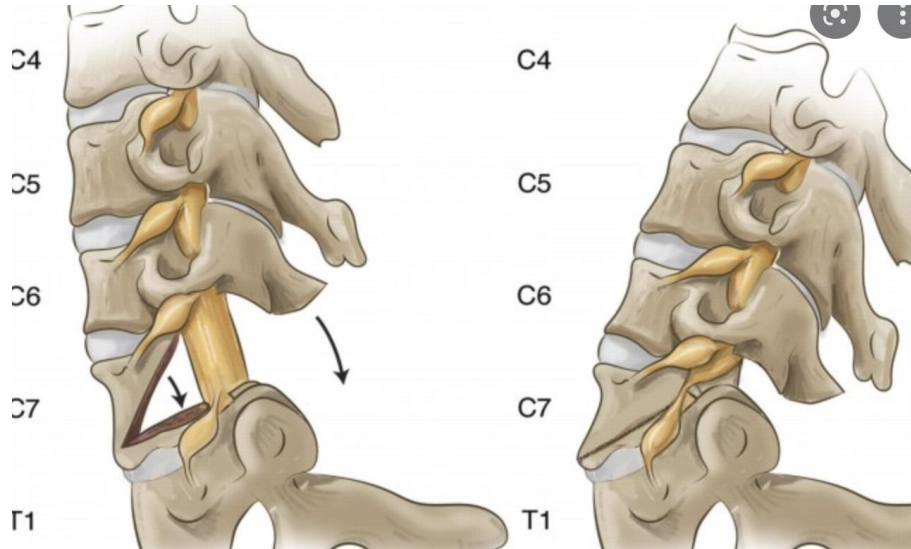
# Also think/offer alternatives



# C7 Osteotomy



# C7 Osteotomy

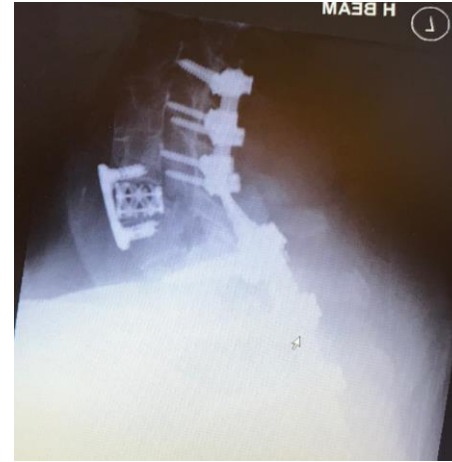




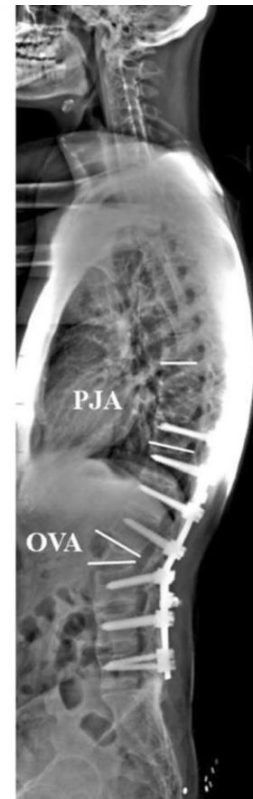
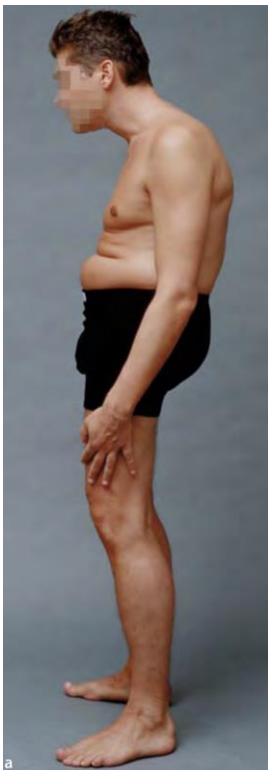
# Fracture = Opportunity for Deformity Correction



# Ankylosing Spondylitis



# Ankylosing Spondylitis Sagittal Balance Corection











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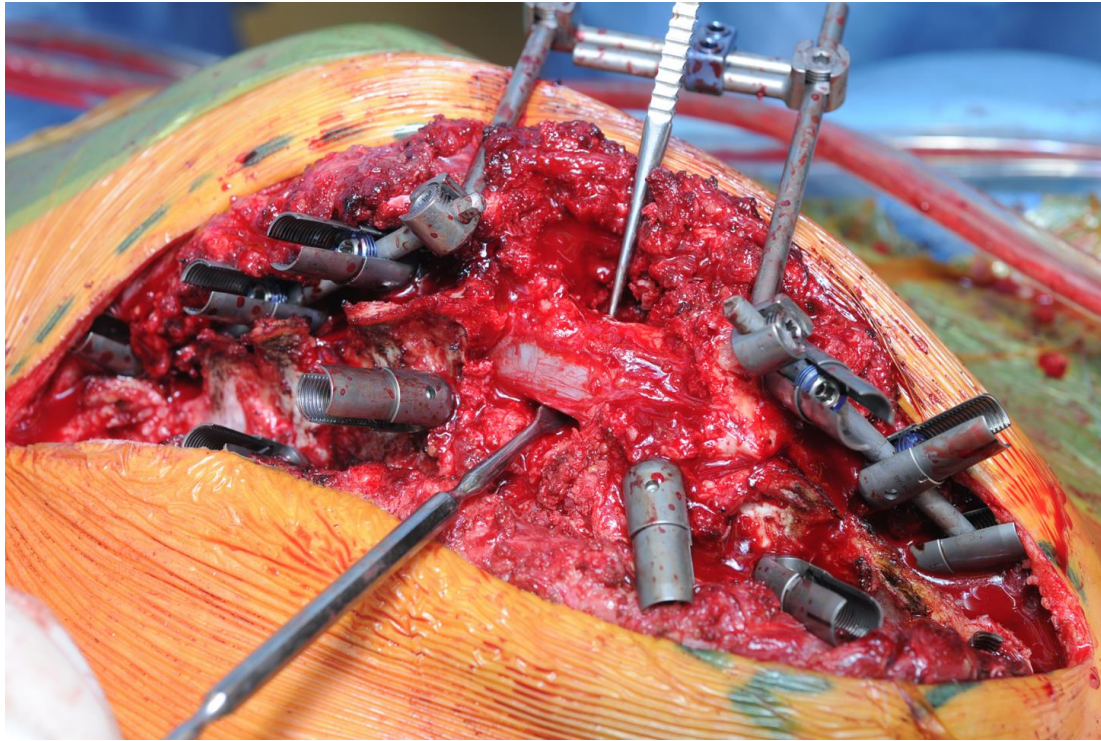
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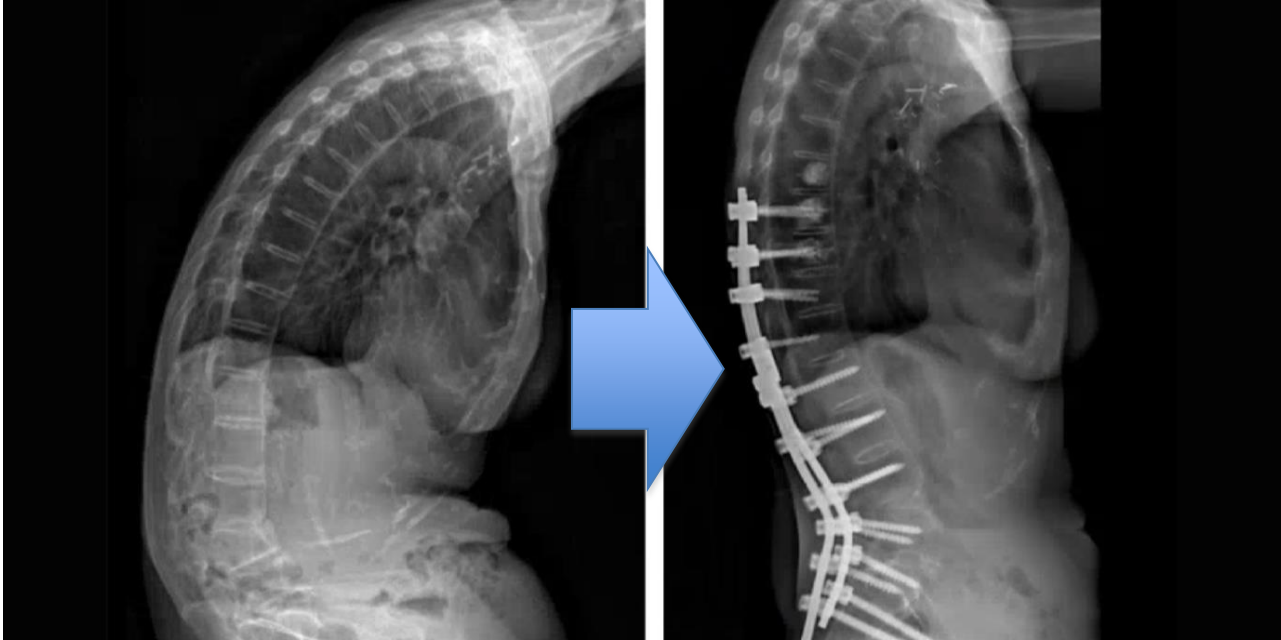




# PSO

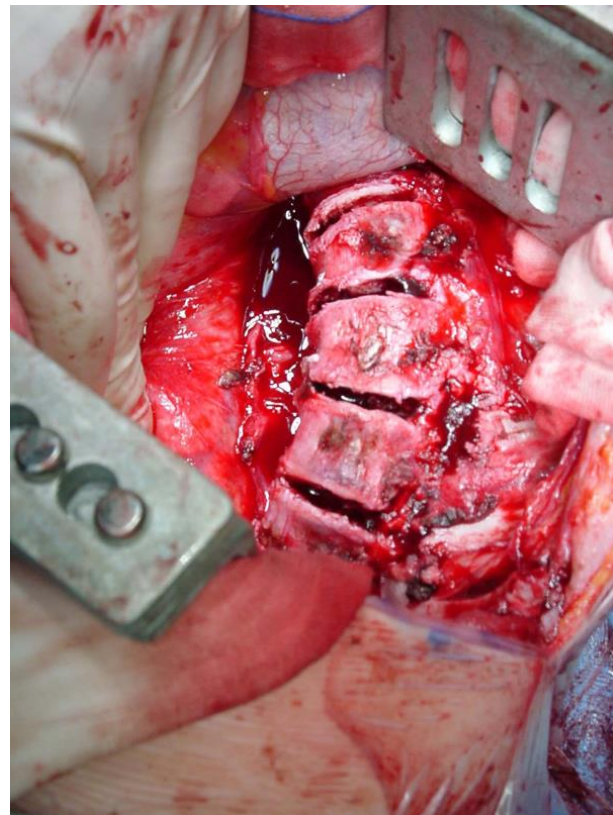


# Sagittal Imbalance





# Anterior Release & Grafting



# Take Home Messages

- Spinal Sx is only indicated if conservative Tx has failed to prevent spinal deformity
- Rule out fractures in **minor trauma** or in **acute onset spinal pain**
- **NEVER USE A SPINAL BOARD** AS IN NON AS PATIENTS
- Unstable fractures require **360 fusions** in the Cervical spine/Cervicothoracic junction
- Lumbar /thoracic region fractures require **long fixations**
- Surgical interventions for AS are **prone to complications**
- **Deformity correction strategies** in AS is beyond the objectives of this session



# Ευχαριστώ

