

Kyphosis

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Sagittal plane deformity in the thoracic or thoracolumbar spine

Thoracic Spine Kyphosis : 25 - 45 degrees

Types

- 1- Mobile**
- 2- Fixed**
- 3-Angular**

1- Mobile Kyphosis

Correctable by the patient's own muscles or by the surgeon

A- Postural

B- Muscle weakness

C- Compensatory to L. lordosis

A- Mobile Postural Kyphosis

Associated with

1-Flat feet

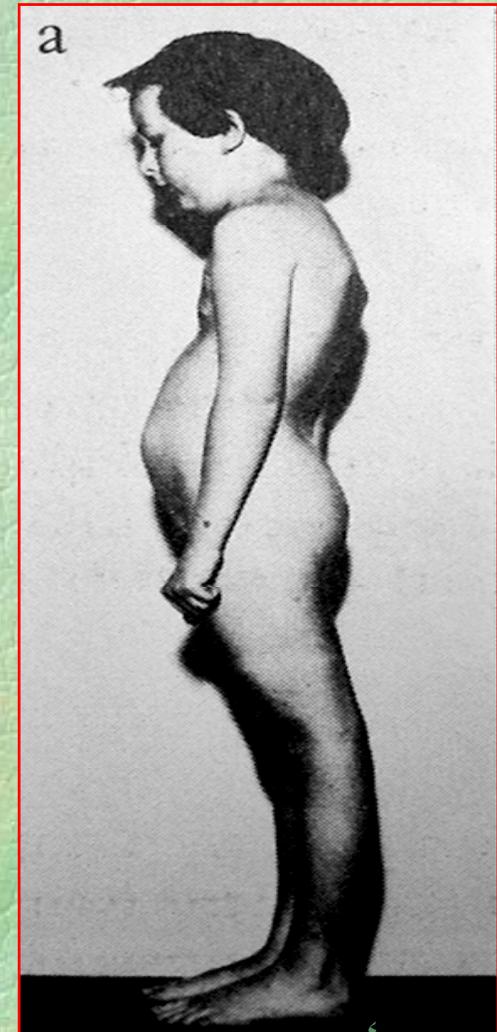
2-Women after child birth

3- Obesity

C.P

Painless, Correctable,

Long curve, N. X-ray



Treatment

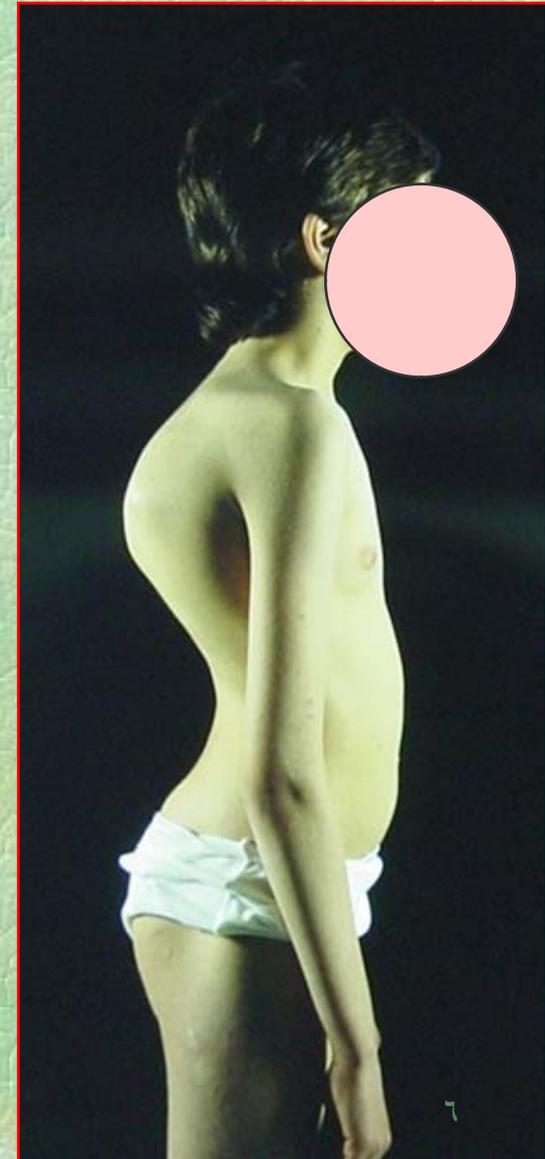
Posture training

Exercises

Weight reduction

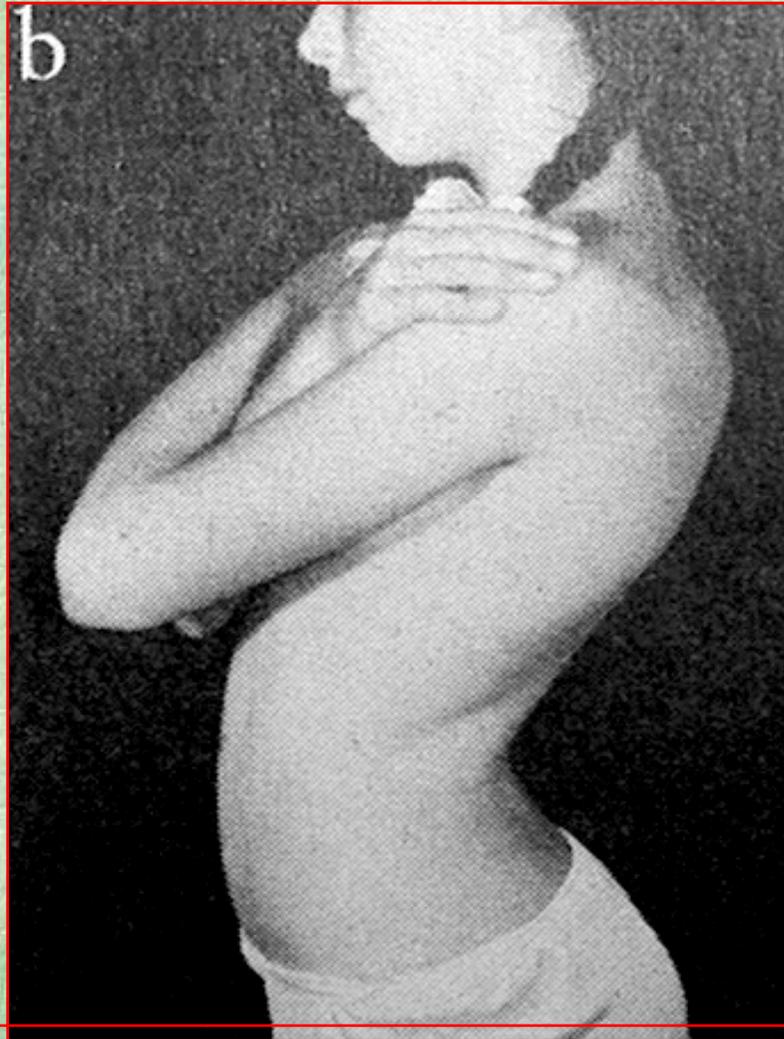
B- Muscle weakness

- * **Muscle dystrophy**
- * **Polio.**
(**Lumbar lordosis and Thoracic kyphosis**)



C-Compensatory to lumbar lordosis

*** Gross hip deformity e.g hip dislocation ,
fixed flexion hip def.
→ lumbar lordosis → Thoracic kyphosis**



Compensatory to L. lordosis

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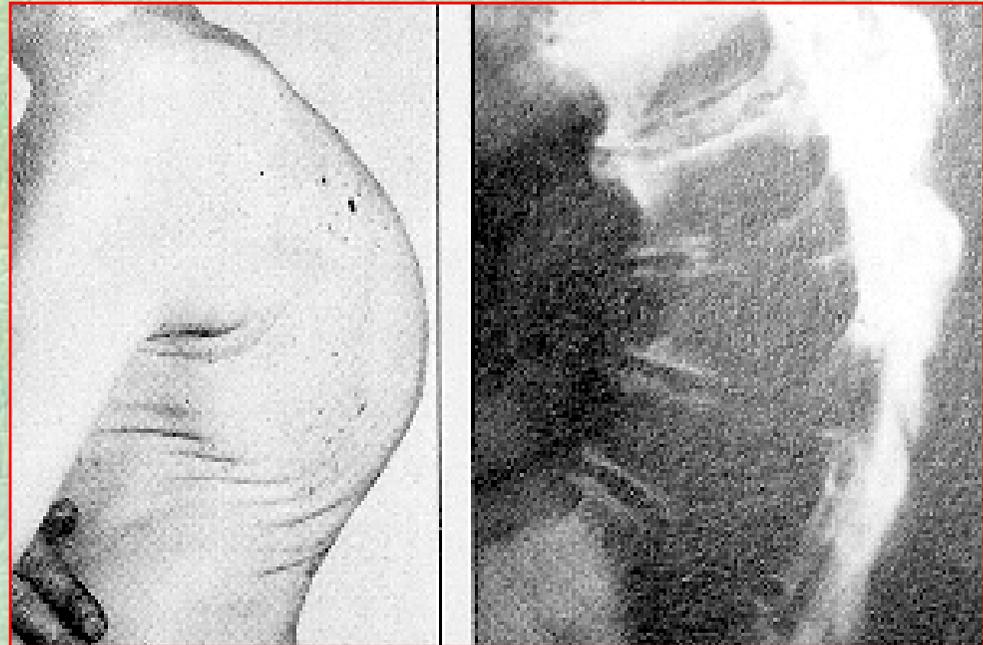
2- Fixed Kyphosis

Not correctable by the patient's own muscles or by the surgeon

Types

- 1- Scheuermann's disease**
- 2- A. Spondylitis**
- 3- Senile kyphosis**
- 4- Bone dysplasia**
- 5- with Scoliosis**

Scheuermann's dis →



Senile kyphosis ←

3-Angular Kyphosis

1- Cong.

2- T.B

3- Vertebral body collapse

= Trauma, Tumour

= infection

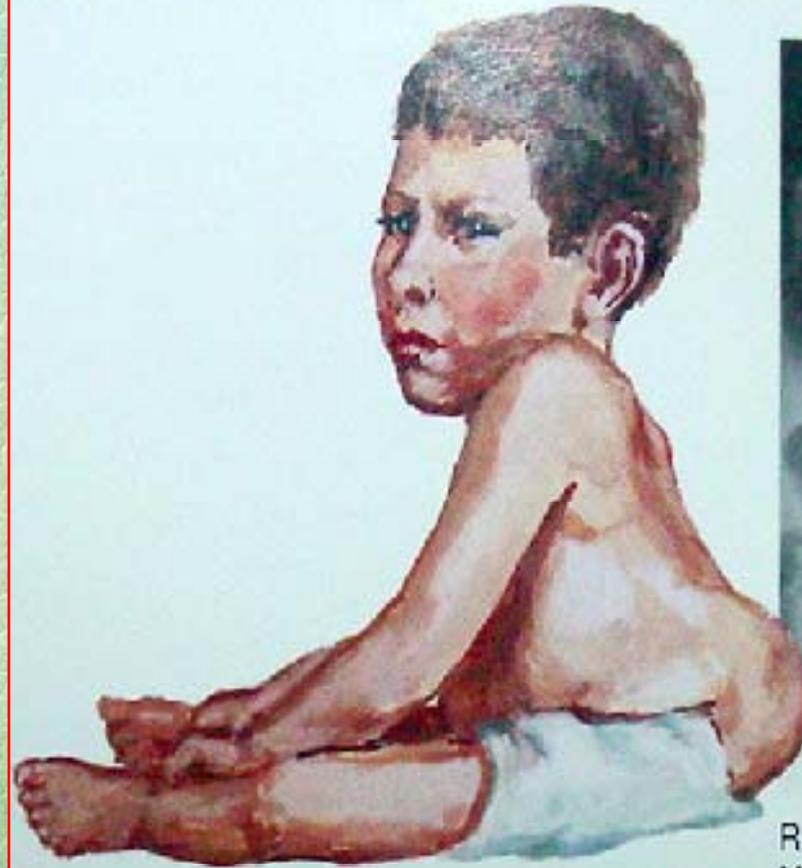
= Calve's

5- Deficient post bony elements

= post laminectomy, Spina bifida

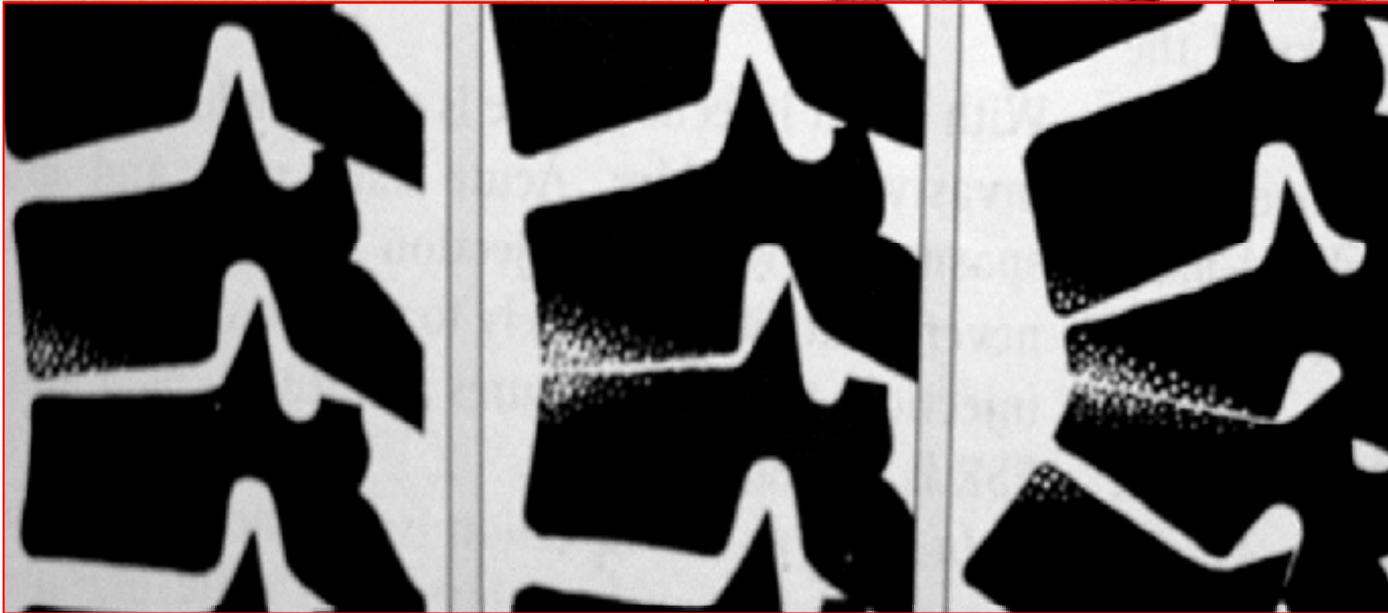
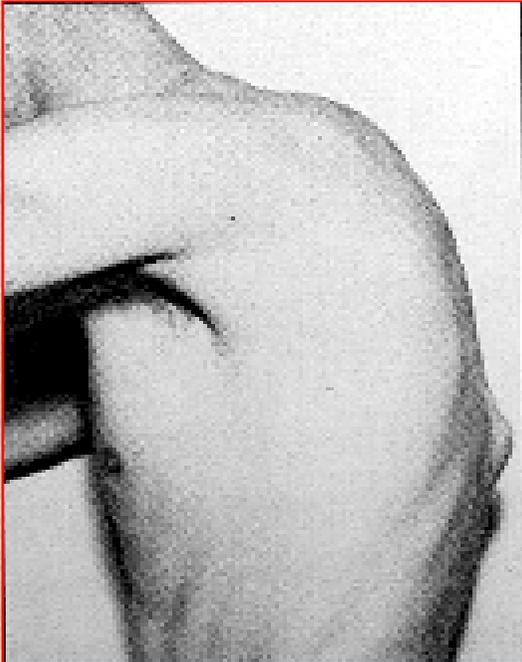


Congenital Kyphosis



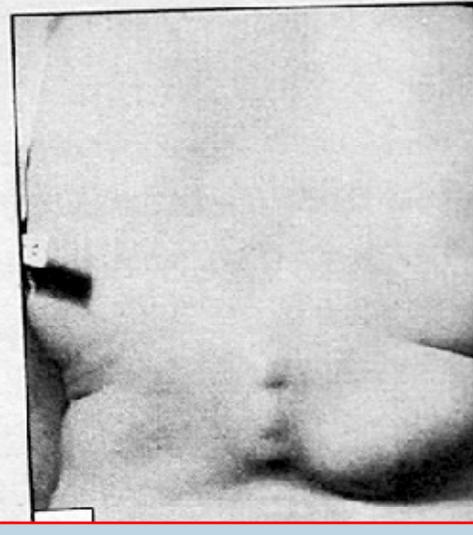
Radiograph (lateral view).
Myelodysplasia (open spinal
canal) and congenital kyphosis

T.B



**Progressive
kyphus**

T.B



Lumbar abscess

Coin test

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Calve's

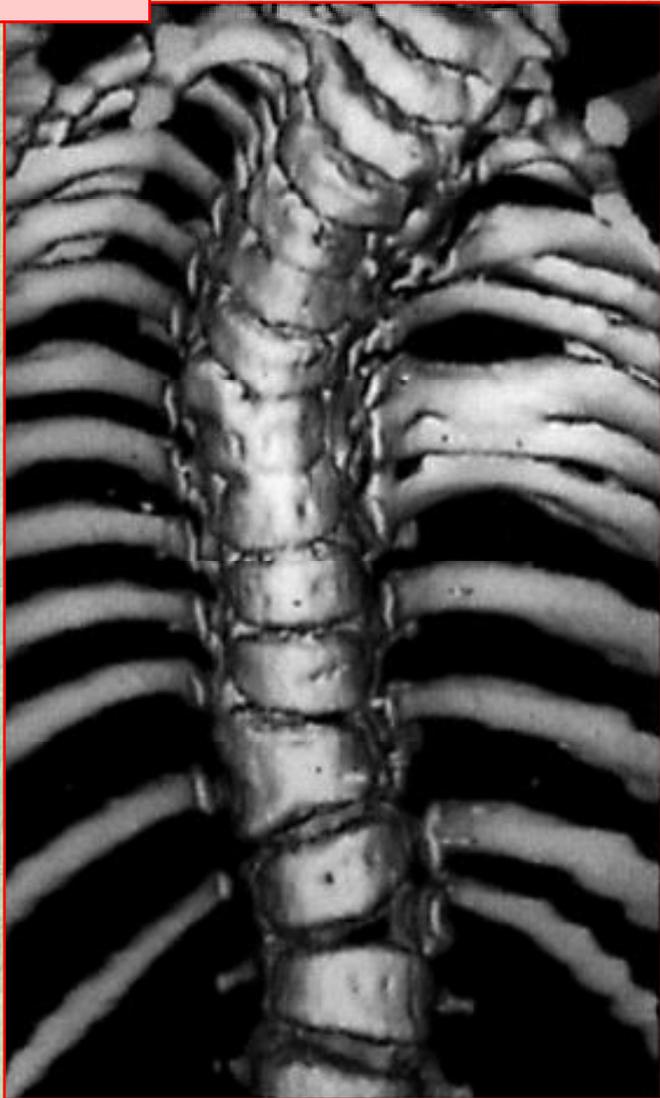


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Kyphoscoliosis



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Age related Kyphosis

- 1- Child → Cong.,
- 2- Adolescent → Postural,
Scheuermann's disease
- 3- Young adult → A.S
- 4- Elderly → Senile, Path. #,
Paget's.
- 5- All age group → T.B

KYPHUS



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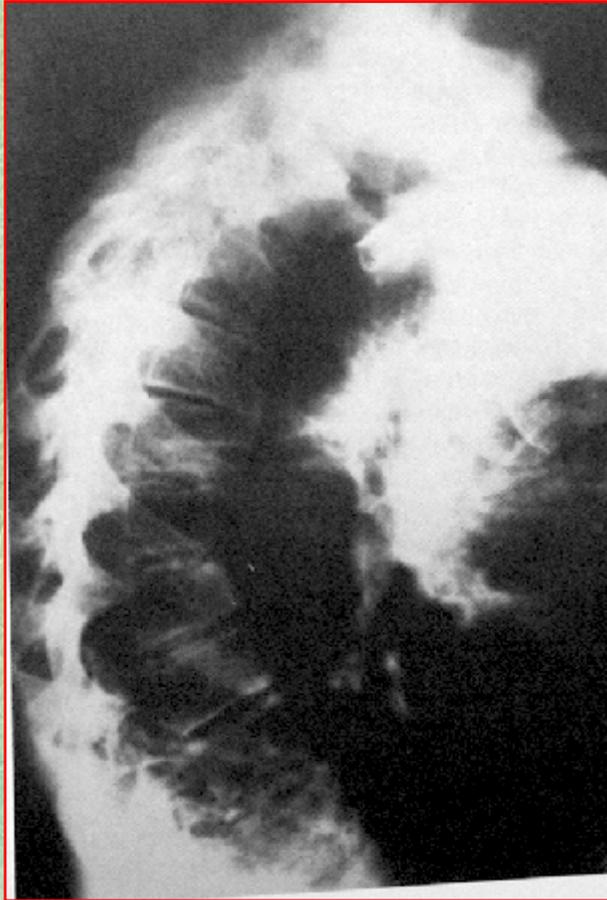
Scheuermann's disease

Causes

- 1- Unknown**
- 2-Osteochondritis**
(irregular ossification of epiphyseal plates)
- 3- Undue strain on the ant.**
portion of the vertebral bodies
- 4-Traumatic infarction of the epi. plates**
- 5-Vertebral osteoporosis and the discs**
herniate in the fragile bone

clinical picture

- = Starts at puberty**
- = > in females**
- = Round shoulders**
- = Back pain + fatigue**



Scheuermann's Disease
Thoracic kyphosis



In Scheuermann's disease (unlike in postural defect), kyphosis persists when patient is prone and thoracic spine extended or hyperextended (above) and accentuated when patient bends forward (below)



Scheuermann's Disease (continued)
Lumbar and dorsolumbar kyphosis



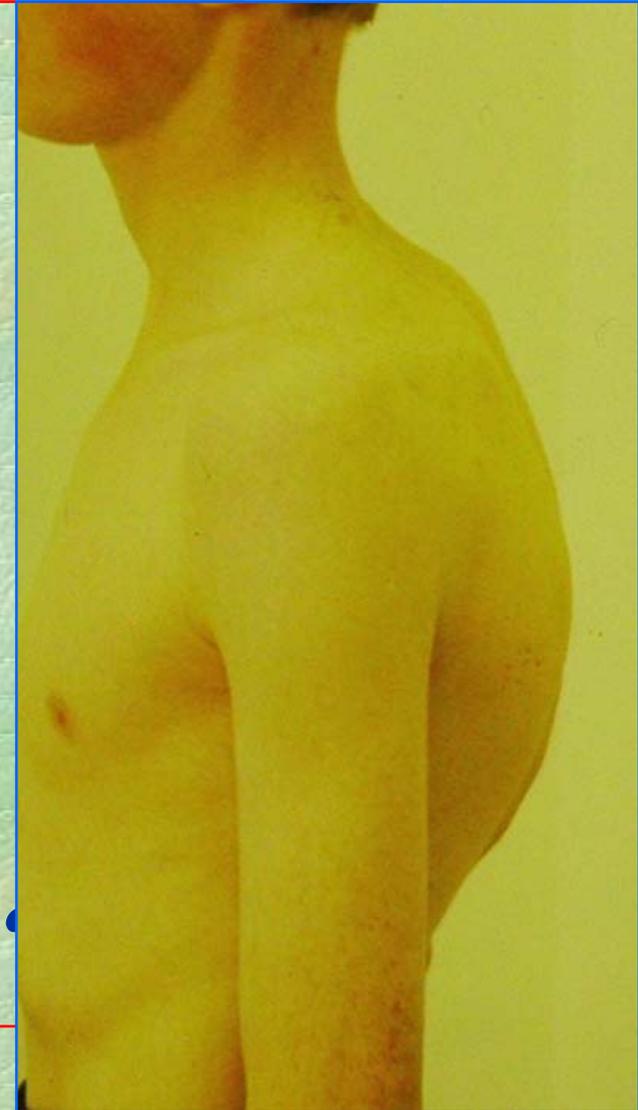
Dorsolumbar kyphosis accentuated by bending



Lateral radiograph

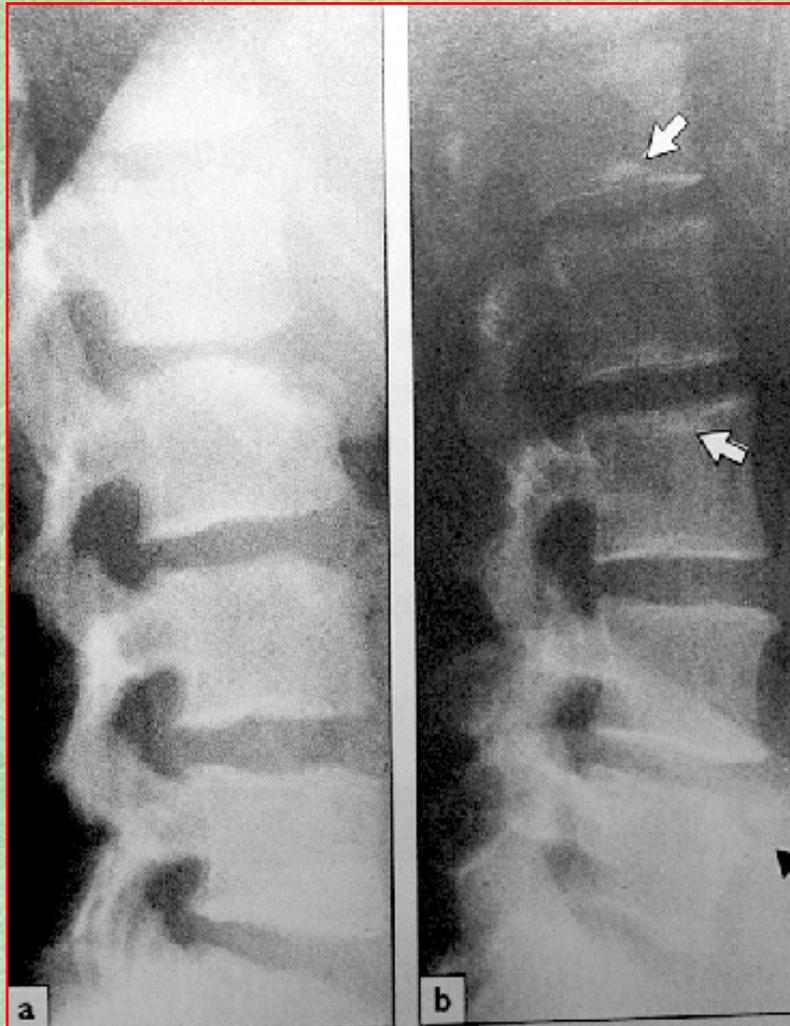
O/E

- = **Poor posture**
- = **Smooth kyphosis**
- = **Lumbar lordosis**
- = **Non correctable**
- = **Full ROM**
- = **Tight hamstrings!!!?**



X-rays

- * Wedging ant. > 5 degree of each vertebra D6 - D10**
- * Contain small translucent areas (Schmorl's nodes)**
- * Fragmented ant. epiphyseal plates > 3 Vertebrae**
- * Angle > 40**



18.20 Lumbar Scheuermann's disease (a) The x-ra



D.Dx

**1- Postural: Painless, Correctable,
Long curve, N. X-ray**

2-T.B

= Angular kyphos

**= X-ray : = destruction at least two
adjacent vertebrae with**

= narrowing of the disc +

= paravertebral abscess

R/

= 40-60 Degree →

Postural trainings

Strengthening exercises.

= 60 degree in young child →

Corrective cast for 6 m followed by

**Milwaukee brace until remodelling of the
vertebrae.**

R/

= Older adolescent and adult 60 degree →

*** If painful , > 60 degree, or impending paresis.**

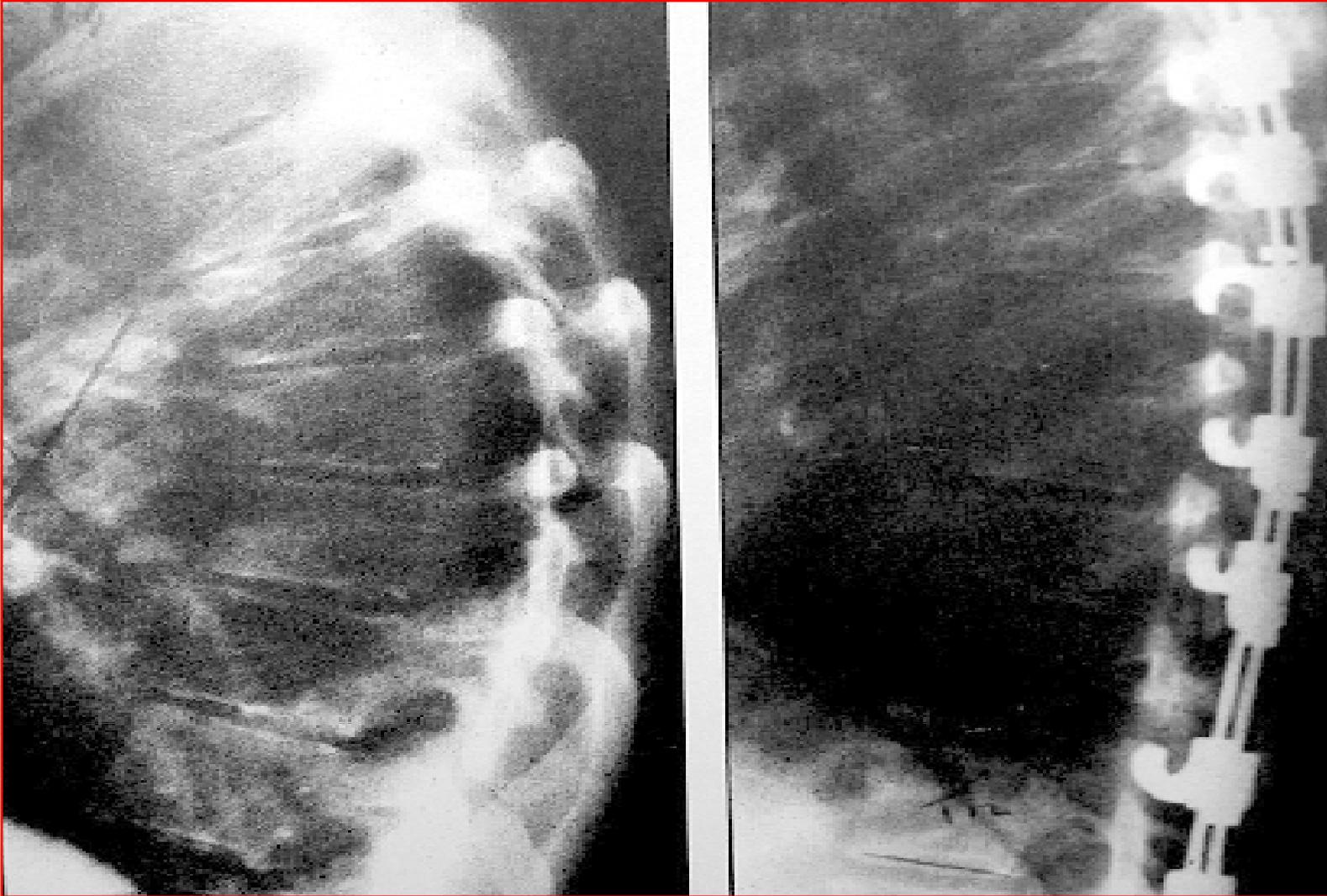
1- ant. release and multiple disc excision

2- traction for 2 weeks

3- Post fusion

Aim of treatment

- 1- Cosmesis**
- 2- Stop progression**
- 3- Alleviate pain**
- 4- Prevent pain in the future**



Scheuermann's disease

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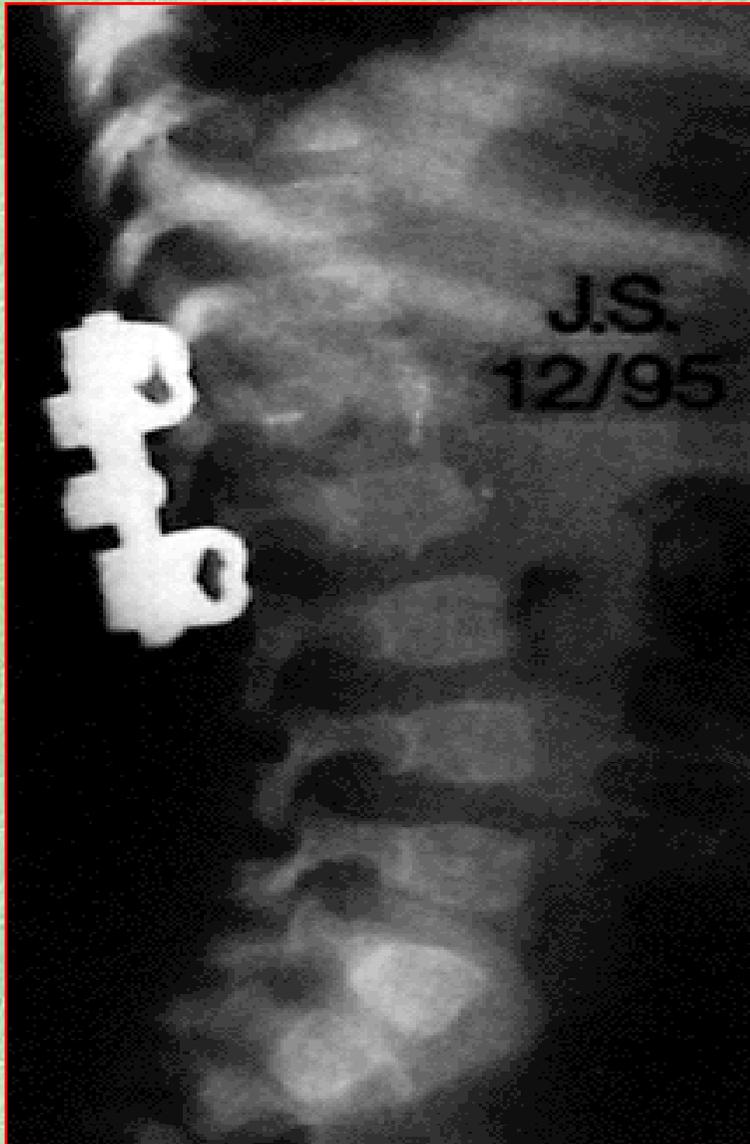
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Congenital kyphosis

Types

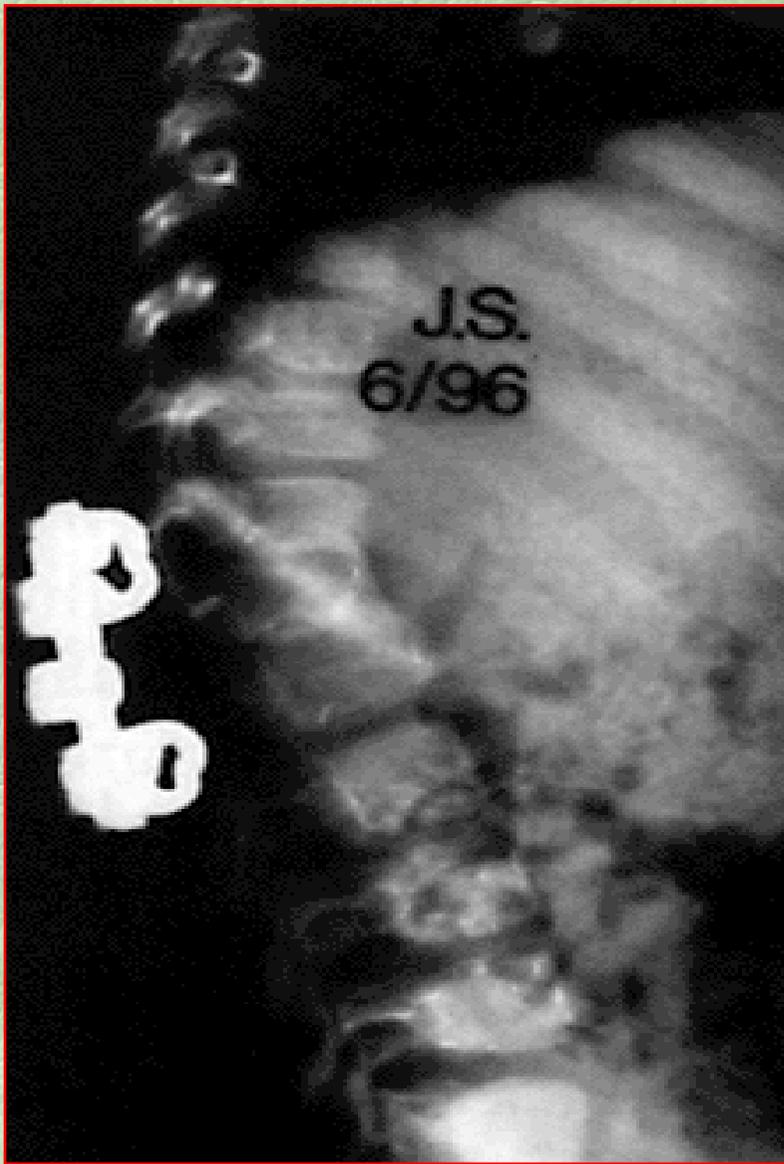
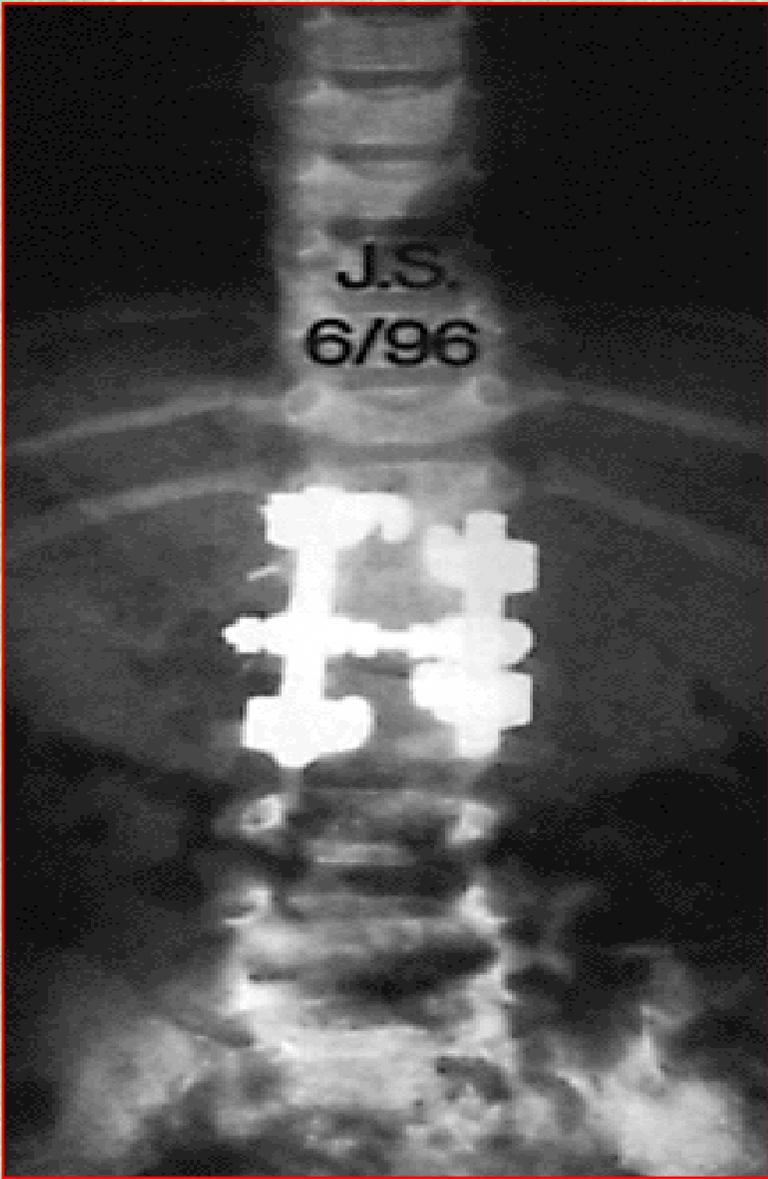
- 1- Failure of formation of vertebral body. 20% → paralysis
- 2-Failure of segmentation
Very slow progression, no risk of paralysis
- 3-Combination



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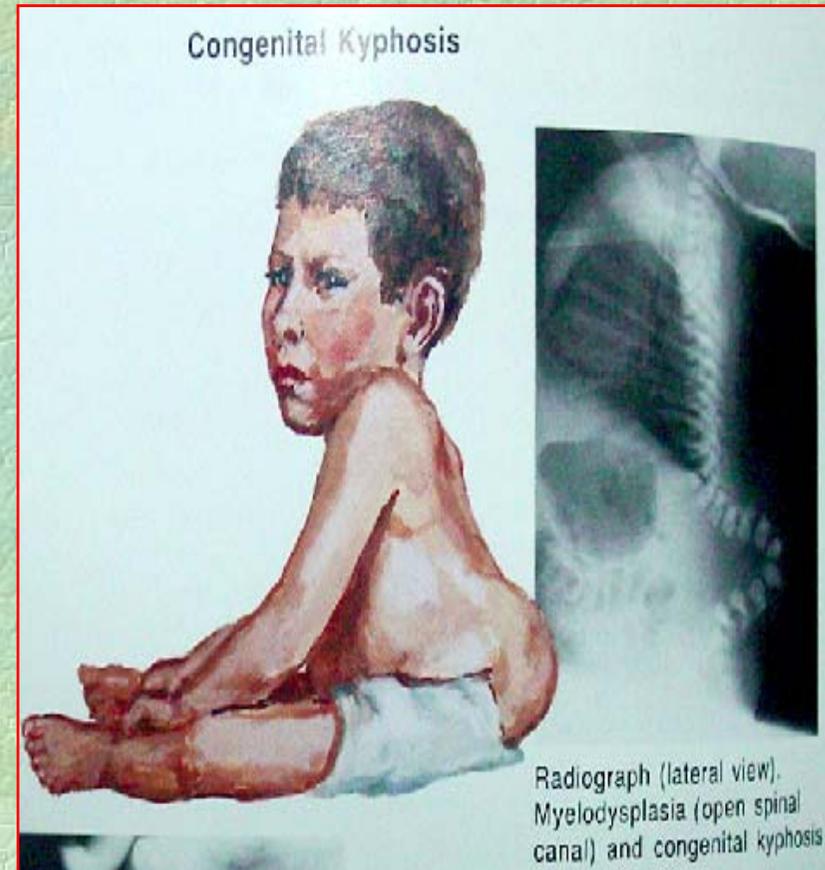
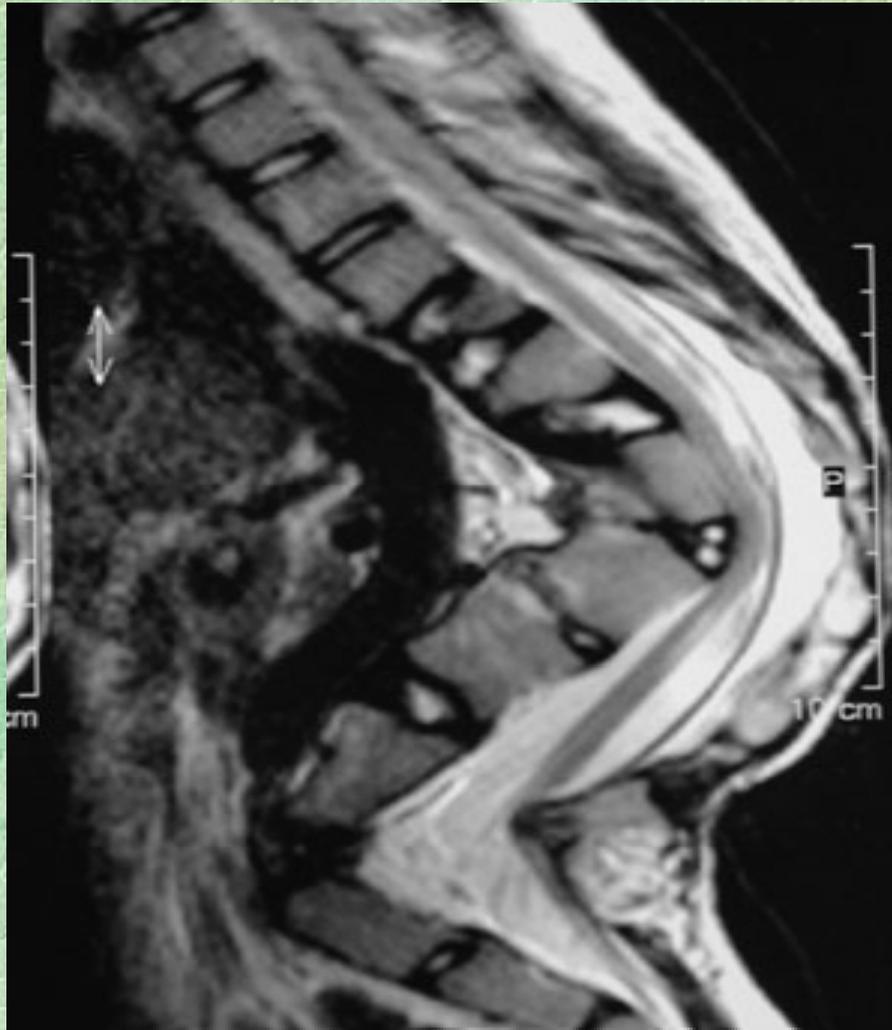
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Treatment

Type 1 →

**Post fusion without instrumentation
at the age of 3 years.**

**If seen late → ant. strut graft and
after 2-4 weeks → post fusion**

Type 3 → **Ant.& Post fusion**

Kyphosis in the elderly

- 1- Senile**
- 2- Senile osteoporosis**
- 3- Paget's**
- 4- Pathological #**

Senile kyphosis

= **More in males.**

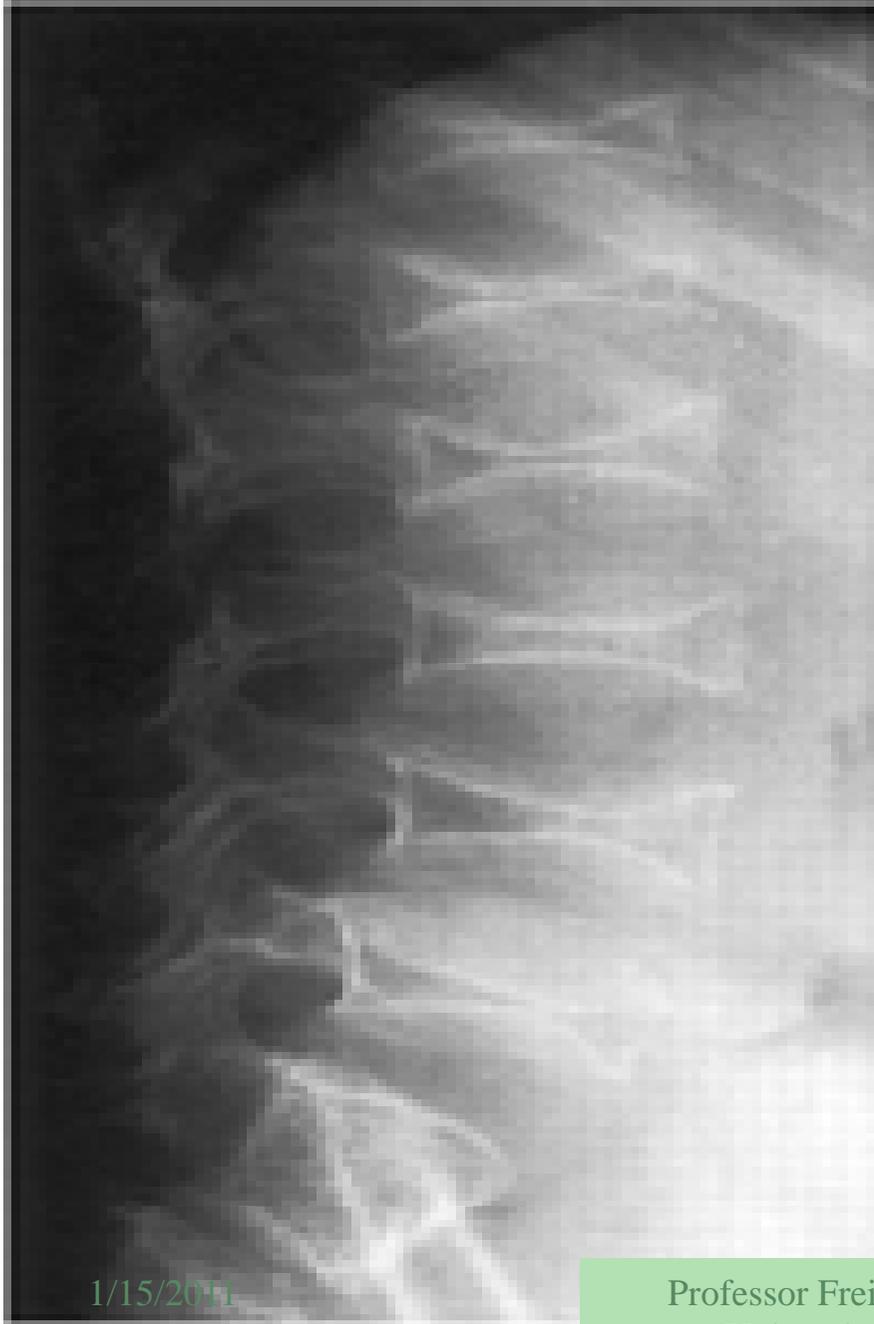
= **Multiple discs degeneration causing narrowing followed by slight wedging**

= **little pain unless development of Facet O.A.**

Senile Osteoporosis

- = Usually in thin females.**
- = Wide spread osteoporosis**
- = Code fish spine**
- = Pain is common due to fractures**
Or due to compensatory lumbar
lordosis or O.A

**R/
= ANTI OSTEOPOROSIS R/
= STICK
= ANALGESIA**



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Paget's kyphosis

= due to bone softening

**= associated criteria of paget's
(thick bent bones)**

**= large vertebra with coarse
trabeculation**

Pathological # → kyphosis

= Trauma

= Metastasis

R/

***With neurology -→ Surgery**

***No neurology → Radio/ +Brace.**

Lordosis

= Cong.

= Neuromuscular

= Post surgery



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