# CONGENITAL SCOLIOSIS

## Aims of Treatment

- Early Diagnosis,
- Careful observation for evidence of progression,
- Early surgery to prevent deformity.

# CONGENITAL SCOLIOSIS

## Aetiology & Types

**Failure of formation**

Wedge,Butterfly, Hemiverteb

**Failure of segmentation**

Unilateral Bar, Block vertebra

**Mixed Defects**

Combination of above ie Bar & hemivertebra

# CONGENITAL SCOLIOSIS

## Hemivertebra

Free or Fully Segmented

Semi- Segmented

Non- Segmented

# CONGENITAL SCOLIOSIS

## Associated Congenital Anomalies

- Renal Anomalies (20-30%)
- Heart Defects
- GI Anomalies
- Deafness
- Facial Asymmetry
- Orthopaedic anomalies

# Congenital Scoliosis

## Physical Examination

**Signs of dysraphism**

Hairy patch,

Short leg,

Small foot.

(52% Intraspinal Anomalies- McMaster JBJS 1984)

# CONGENITAL SCOLIOSIS

## MRI

Tethered cord

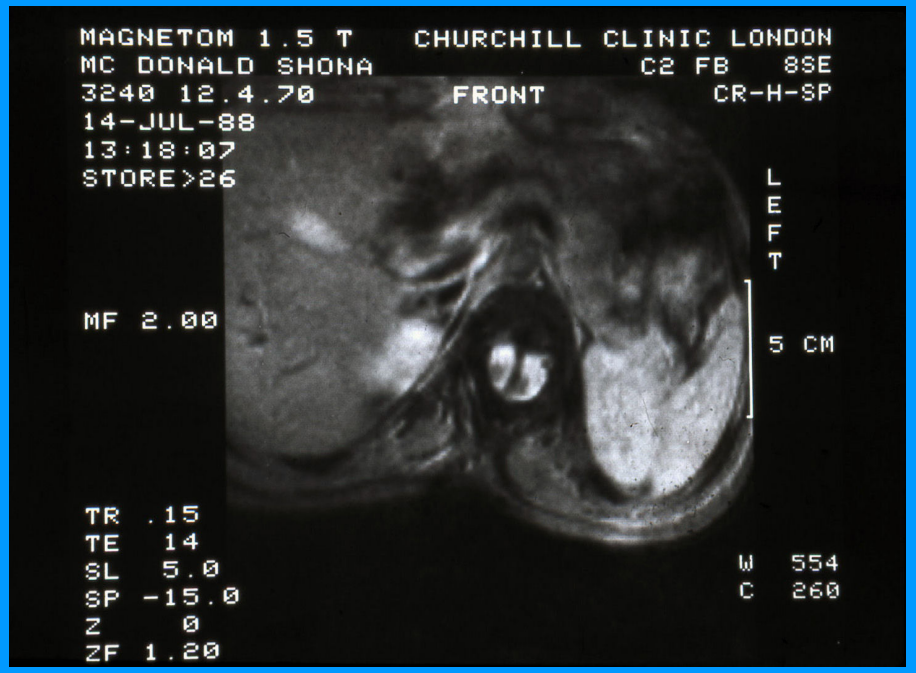
Diastematomyelia

Syrinx

Diplomyelia

Low conus

Teratoma of sacrum



# CONGENITAL SCOLIOSIS

## Natural History

- 25% progress quickly
- 50% progress slowly
- 25% do not progress

# CONGENITAL SCOLIOSIS

**Likely to Progress**

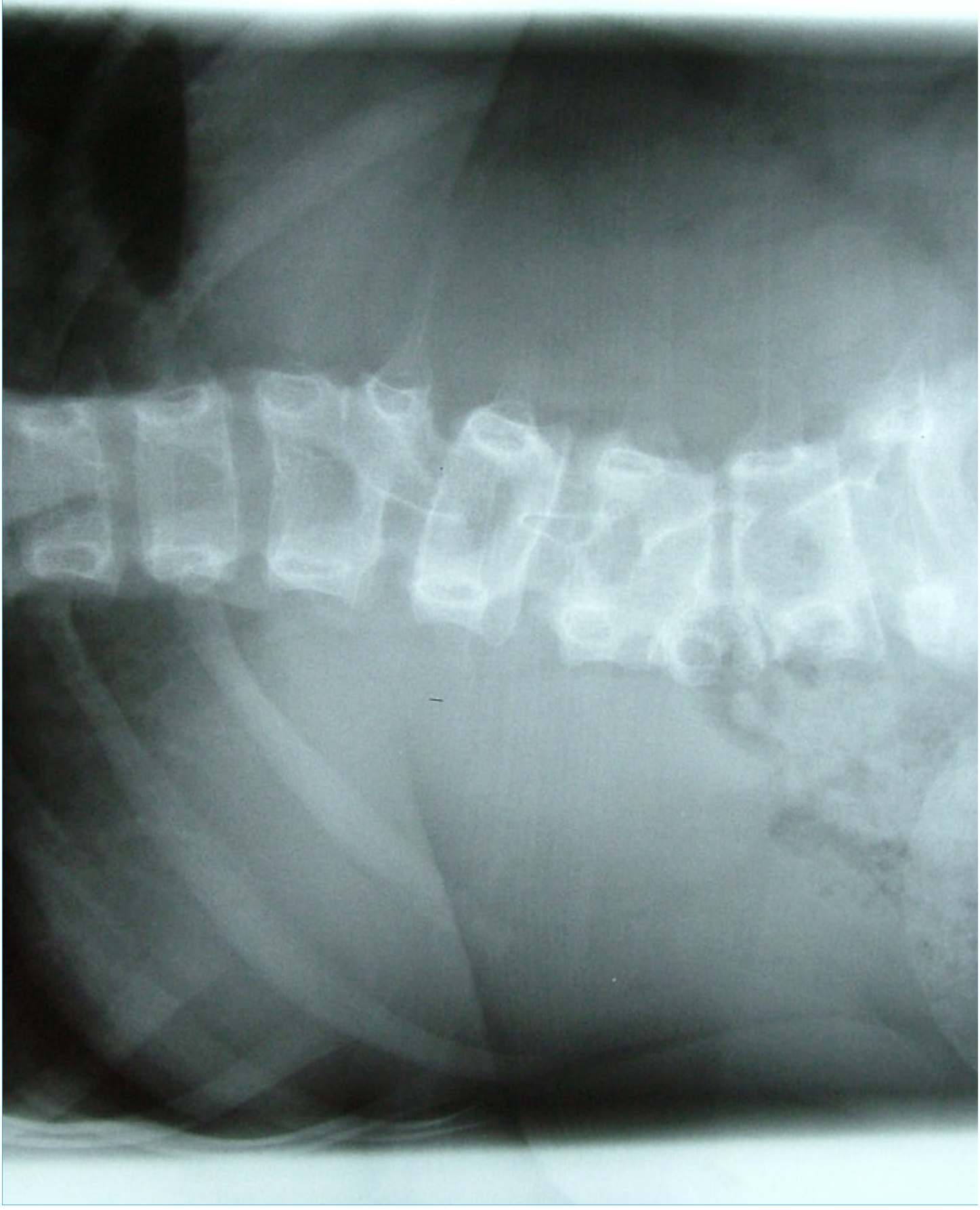
- Unsegmented Bar + convex Hemivertebra
- Unsegmented Bar
- Segmented Hemivertebra

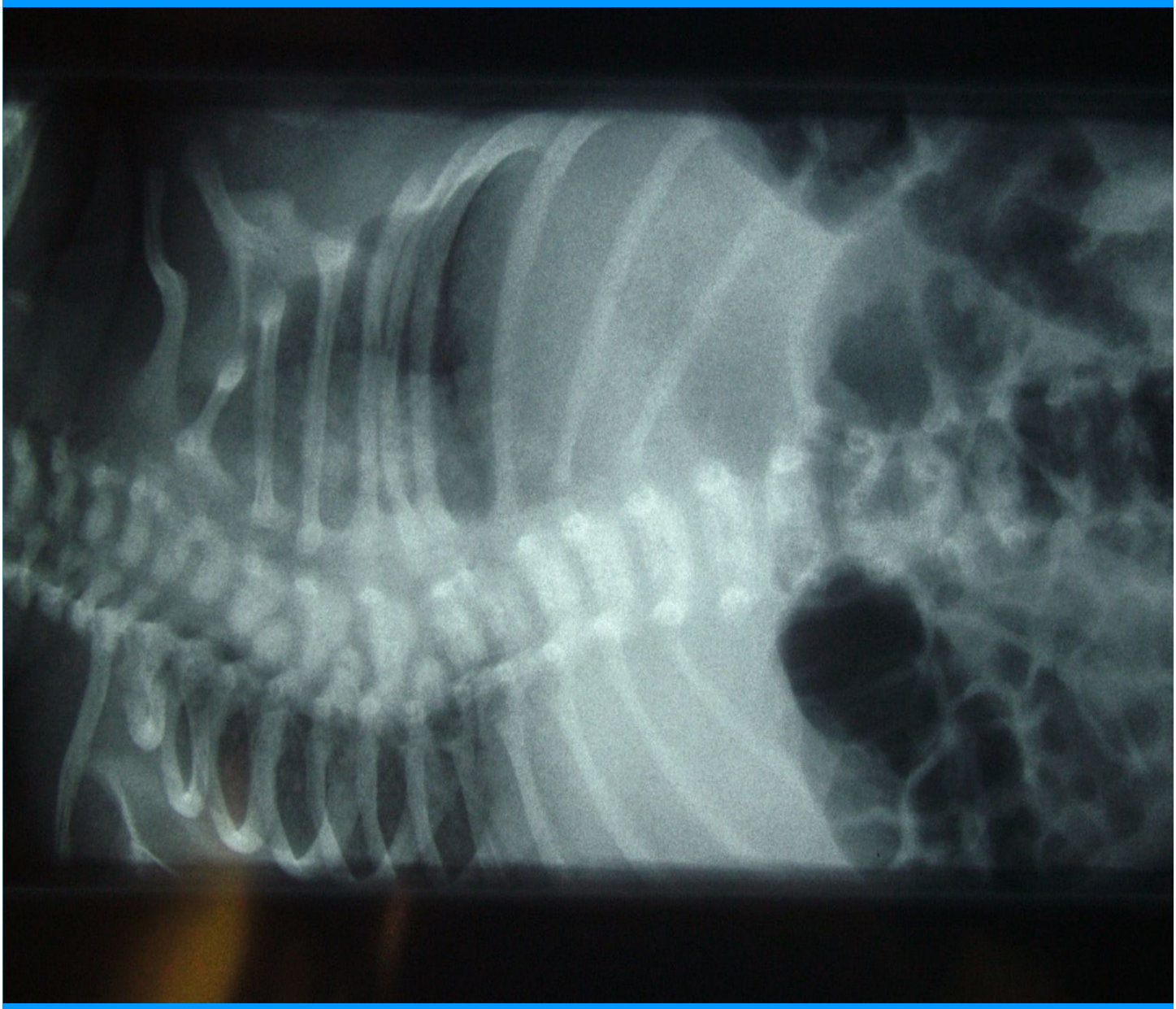
**Unlikely to progress**

- Block Vertebra
- Butterfly Vertebra
- Fused Hemivetebra

**May Progress**

- Semisegmented Hemi





# CONGENITAL SCOLIOSIS

## Brace Treatment

- Long Flexible Curves- 50% Reduction on side bending.
- Associated Compensatory Curves.
- Post operative immobilisation
- NOT in sagittal plane deformities

# CONGENITAL SCOLIOSIS

## Surgical Options

Ant & Post Fusion

Hemi-epiphysiodesis

Hemivertebra excision

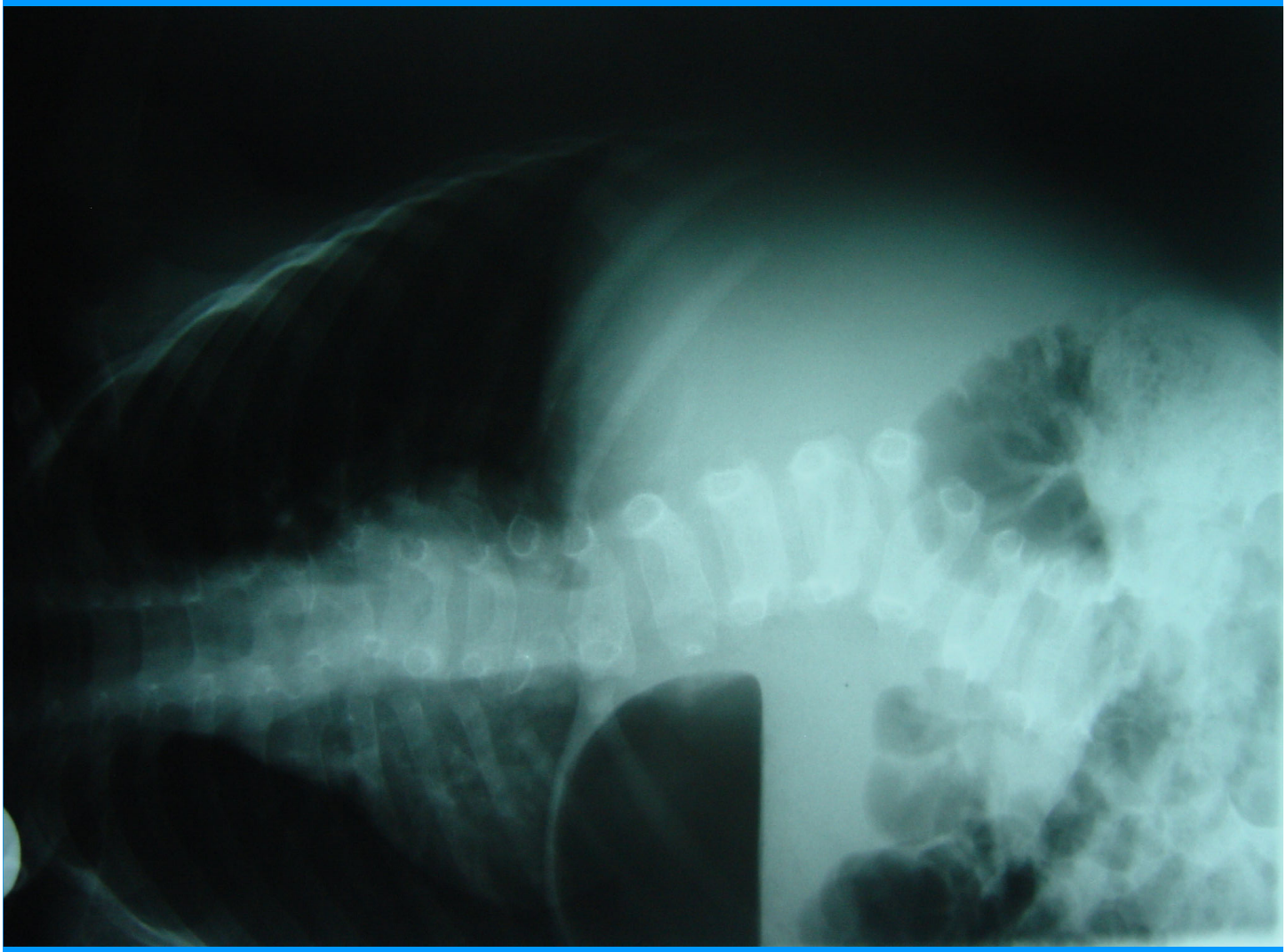
+ Neurosurgical Procedure

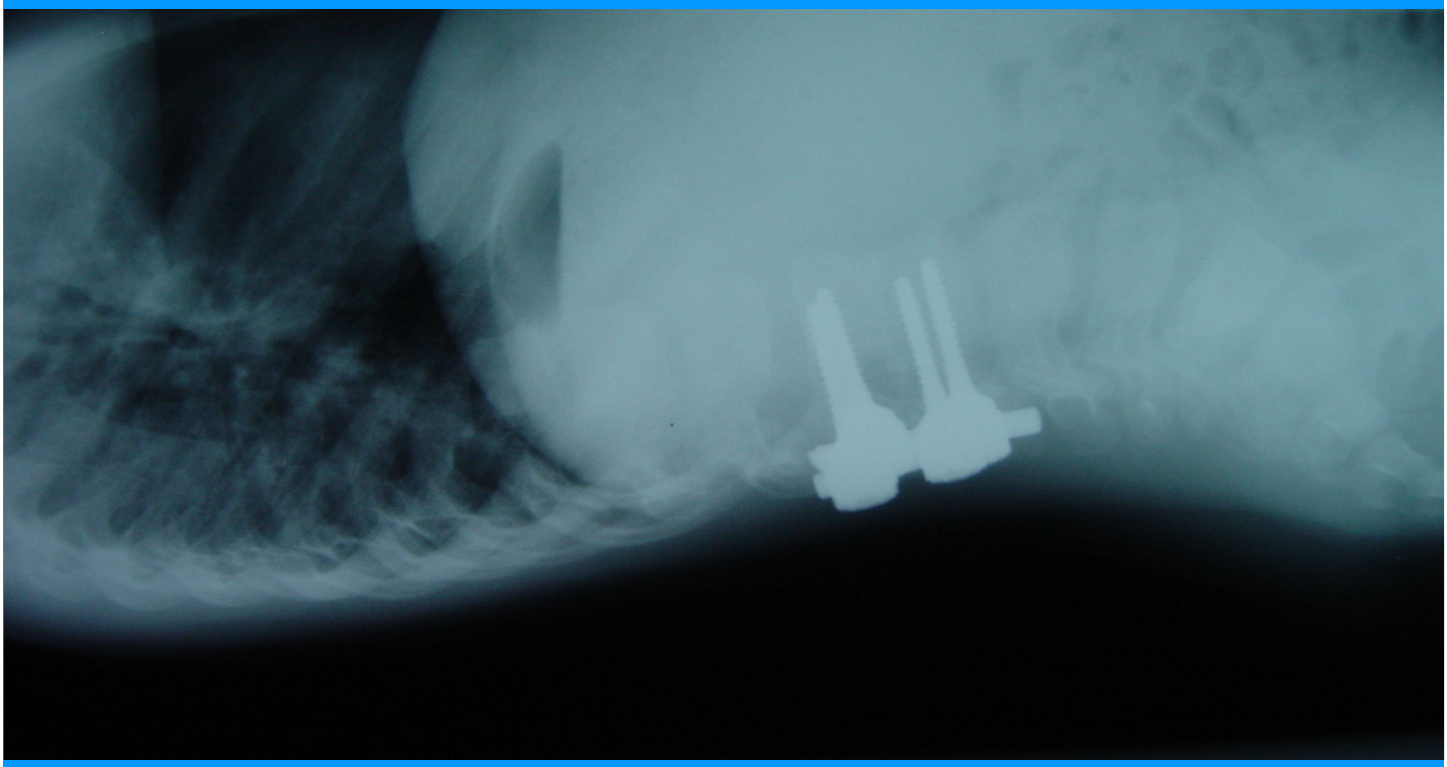
Release of Tether, etc

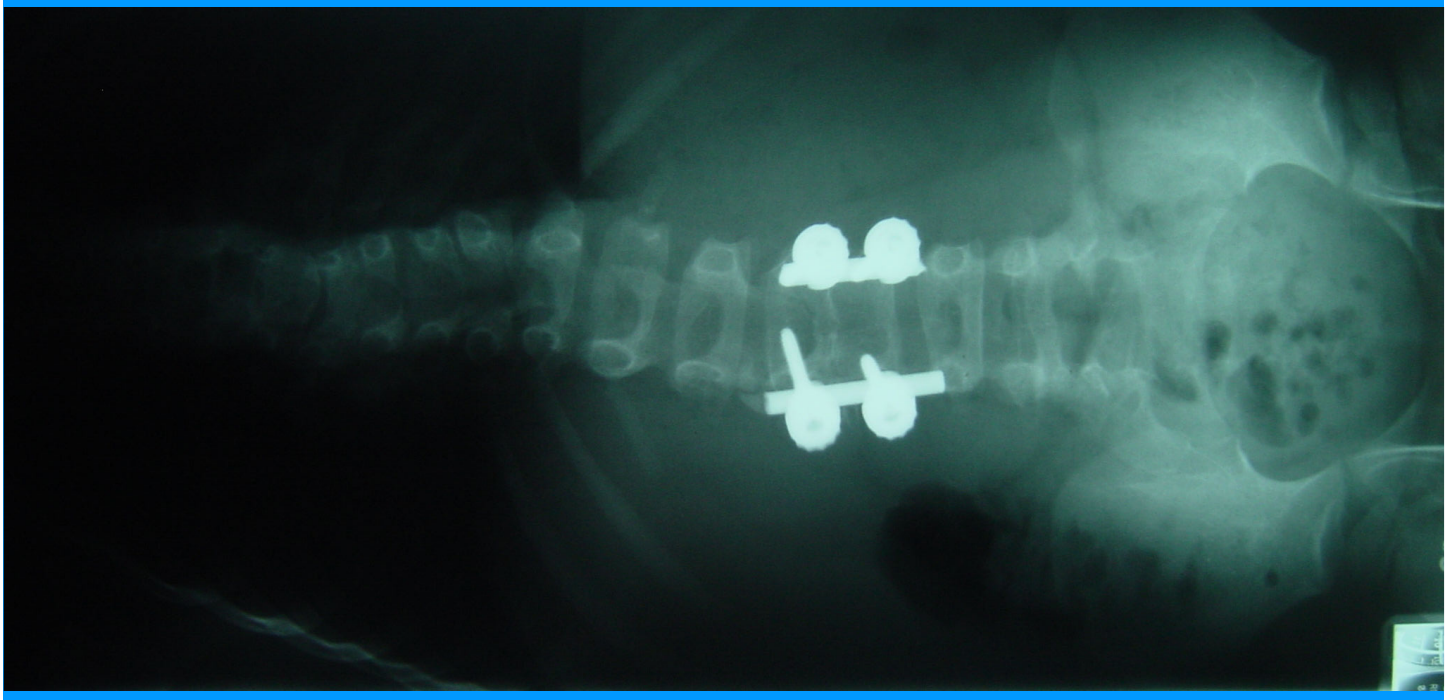
# CONGENITAL SCOLIOSIS

## Hemi Vertebra Excision (*Leatherman)*

- Segmented Hemivertebra
- Immediate Correction (30-100%)
- Short Angular Curves
- Junctional Zones - (Particularly Lumbo sacral)
- Surgery ASAP







# CONGENITAL SCOLIOSIS

## Convex Hemi-Ephysiodesis

**Progressive Curves**

**Cobb Angle > 70 Degrees**

**6 Segments or less**

**Under 5 years of age.**

*Roaf JBJS 45-B 1963*

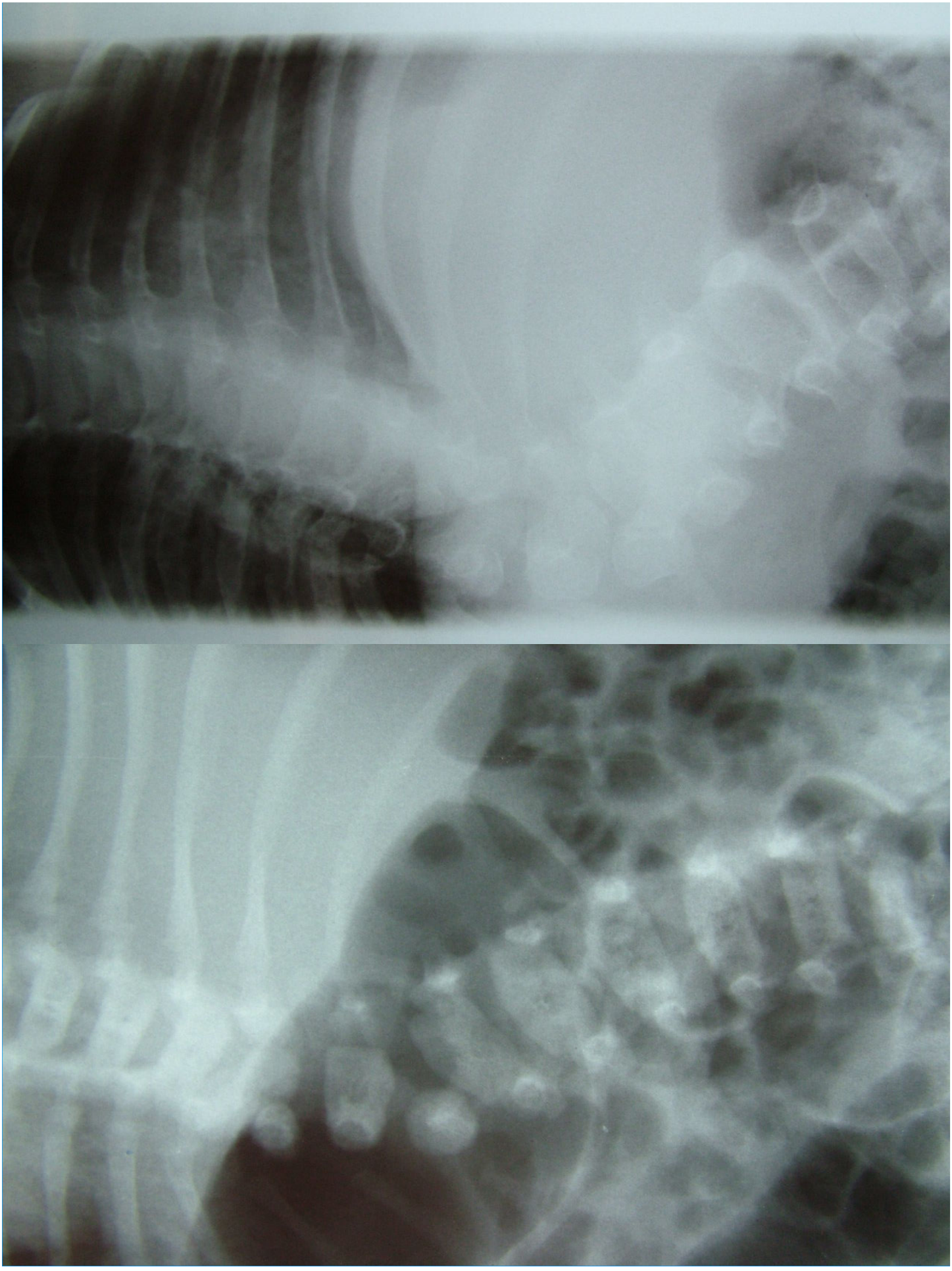
*Andrew & Piggott JBJS 67-B 1985*

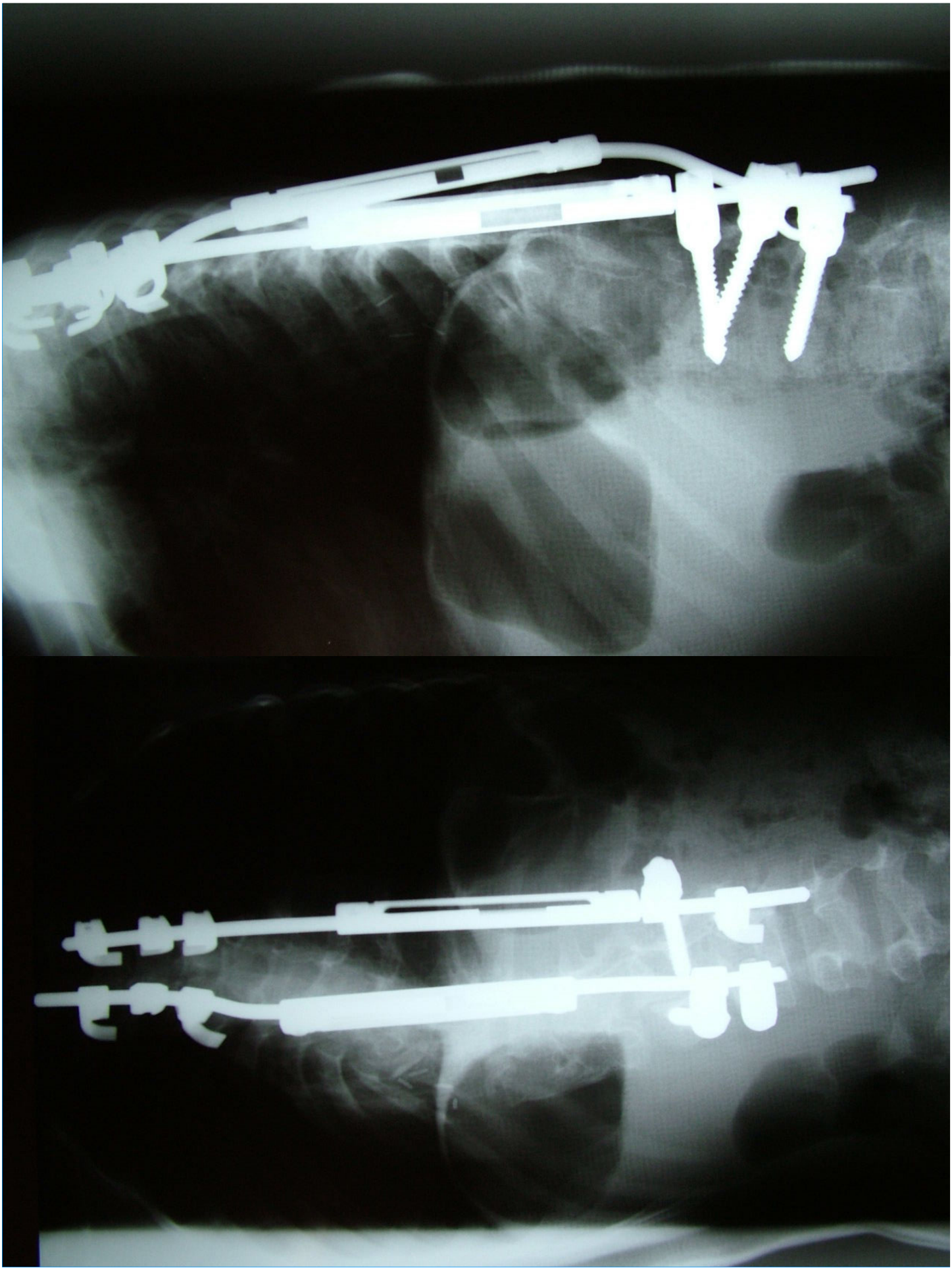
*Winter J. Paed. Orthop 1: 1981*

# CONGENITAL SCOLIOSIS

## Convex Hemi-Ephysiodesis

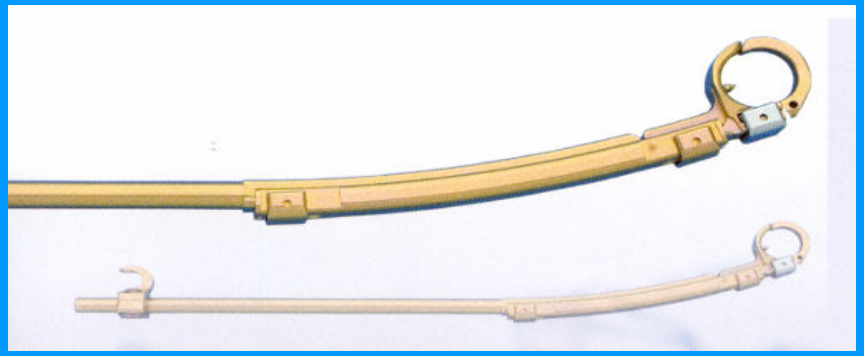
- Inhibition of growth on convexity,
- Requires concave growth potential,
- Anterior & Posterior Convex Arrest of whole curve not just apex.





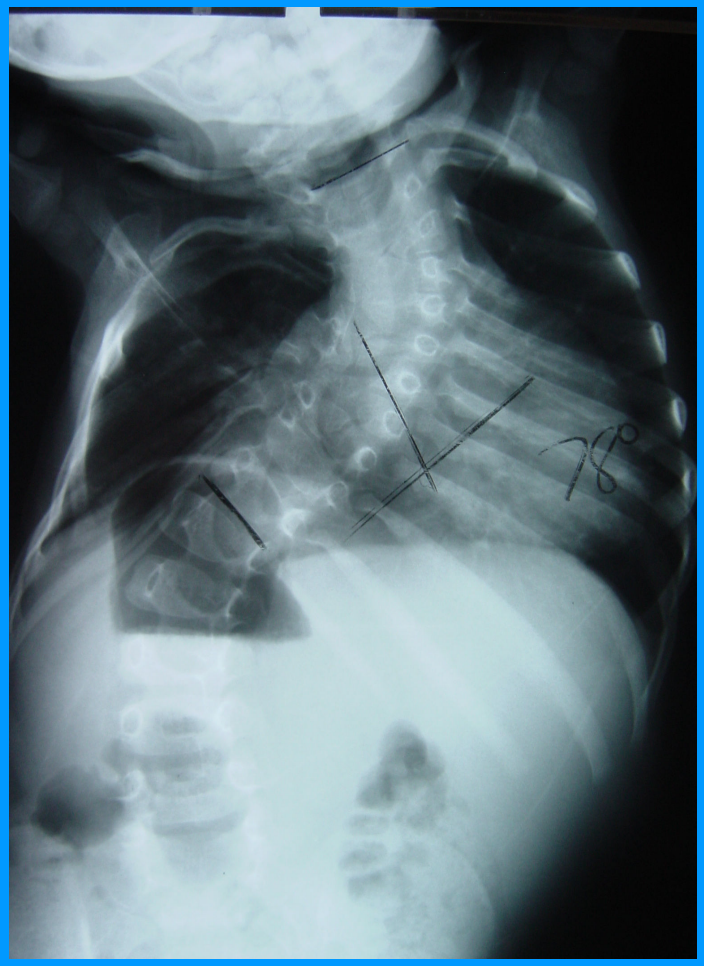
# Vertical Expandable Prosthetic Titanium Rib- VEPTR

- R Campbell & M Smith -San Antonio, Texas.
- Clinical use for over 14 years.
- Over 200 cases.
- Devised to treat respiratory insufficiency.



# VEPTR- Congenital Scoliosis + chest wall hypoplasia.

- 2 year old boy.
- Respiratory insufficiency.
- Complex multi-segmental anomalies + fused ribs.

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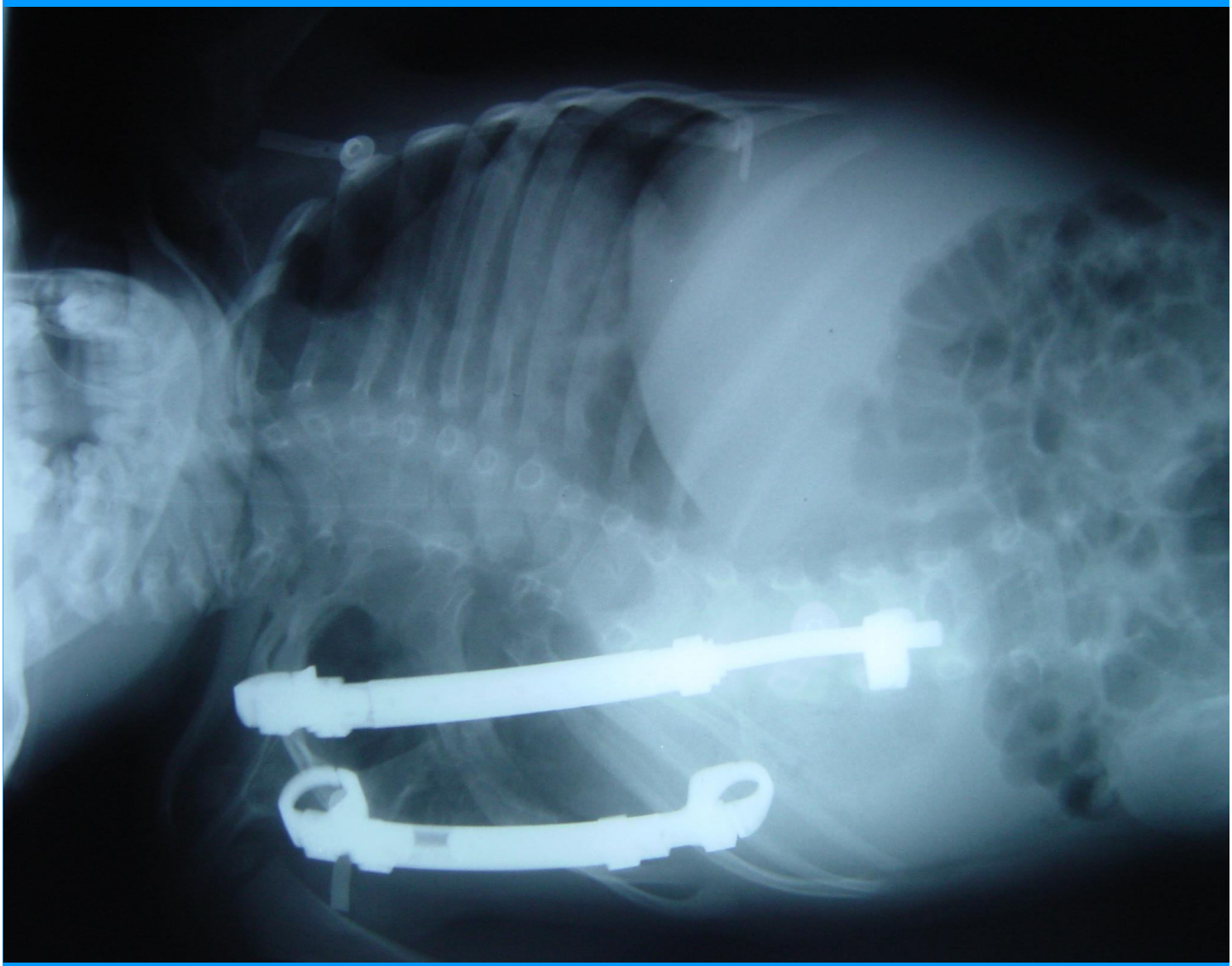

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- Early treatment to prevent development of deformity