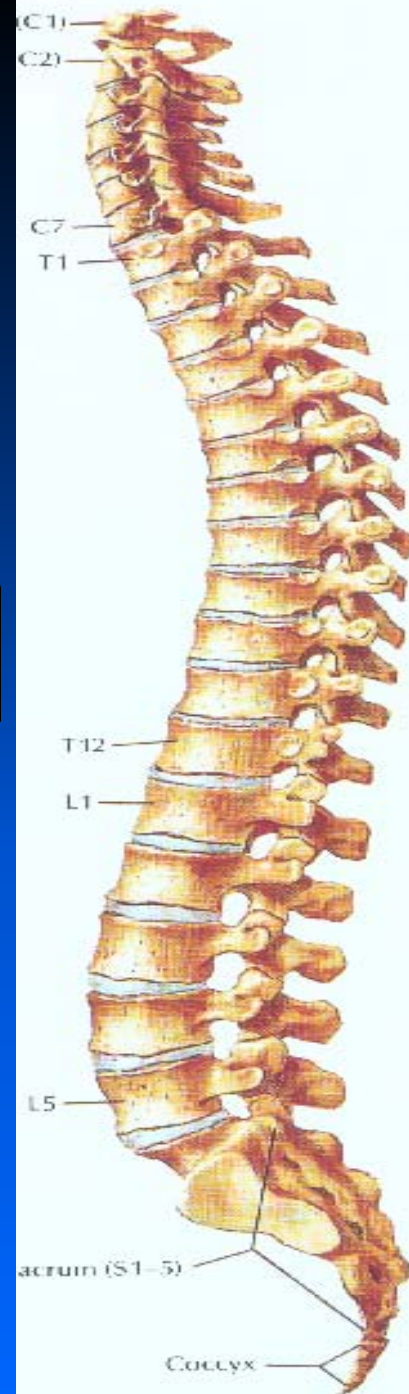


# ROLE OF FUSION IN CHRONIC LOW BACK PAIN

## CLBP



# CONSERVATIVE TREATMENT

- Boxall D, Bradford DS, Winter RB, et al.
- Conservative management of spondylolisthesis in children and adolescents. J Bone Joint Surg (Am); 61-A: 479-495.1979



# CONSERVATIVE TREATMENT

## BOXALL'S CASES

- ❖ All cases finally had to undergo surgery
- ❖ Reasons :
  1. Increasing CLBP
  2. Radicular symptoms
  3. Inability to do ADL



# FUSION

- Fusion was devised at the beginning of last century
- 100 years later the indications have not changed.
- Modalities have changed.
- 100% relief can be achieved below the age of 28.
- 92% relief above the age of 20.



**Hanley EN et al. Spine 14:48-50, 1989.**

# CHRONIC LOW BACK PAIN

## CLBP

- CLBP is disabling
- Spondylolisthesis is an important cause of CLBP
- It can be corrected
- CLBP can be relieved

**Ramani P.S. Text book of posterior lumbar inter body fusion Springer Verlag; 197-207, 1992.**



# HIGH GRADE SPONDYLOLISTHESIS



# CIRCUMFERENTIAL FUSION



# LOSS OF STRUCTURAL INTEGRITY

## ● Results :

1. Abnormal mobility
2. Additional mechanical stress
3. Results in CLBP

Weinstein J. Rydevik B. Spine Surg 1 100-105, 1989



# LOSS OF STRUCTURAL INTEGRITY



# INSTABILITY

- Instability in motion segment is the cause of CLBP
- Slippage beyond 25% is associated with CLBP
- Fusion corrects abnormal mobility  
prevents further slippage  
corrects slippage
- It is mandatory to relieve CLBP

Frymoyer JW: Spine 6: 284-290, 1989



# DEGENERATIVE SPONDYLOLISTHESIS

- Decompression and fusion is the correct treatment.
- Decompression alone does not relieve CLBP.

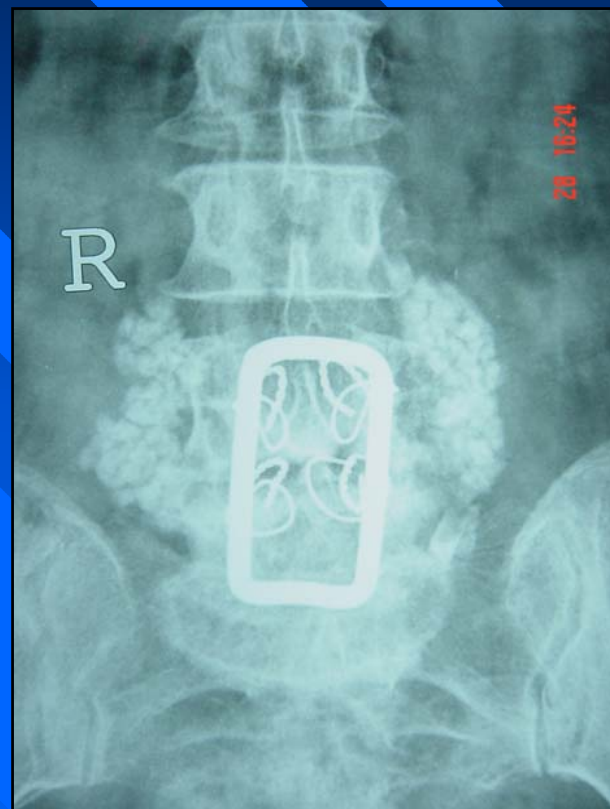


**Reynolds JB, Wiltse LL. Spine 4: 148-149, 1977**

# DEGENERATIVE SPONDYLOLISTHESIS



# POSTERO LATERAL FUSION AND HARTSHILL RING



# SEGMENTAL INSTABILITY

## ■ Diagnosis :

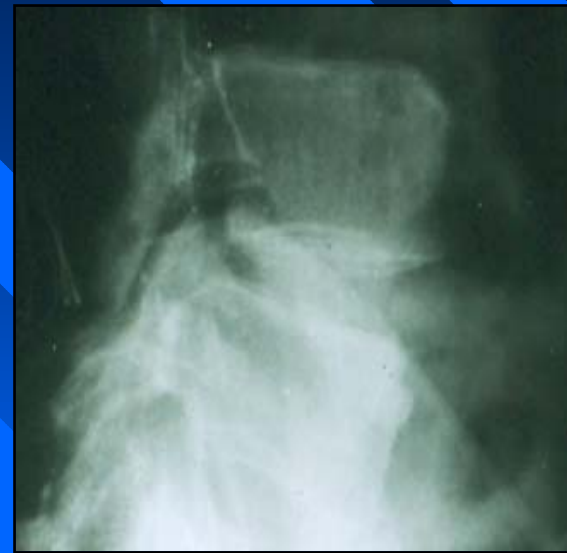
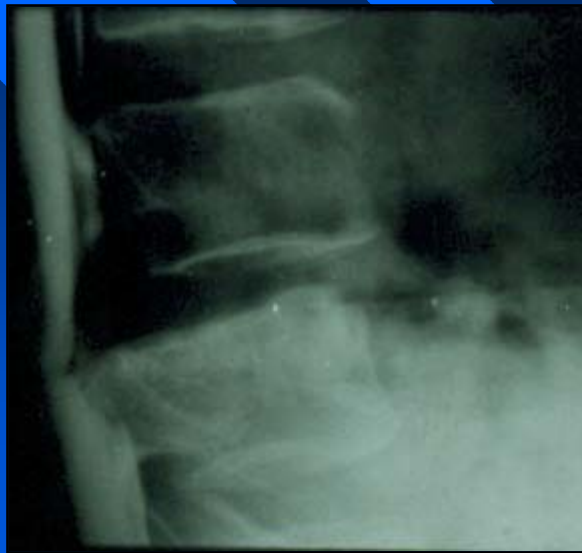
1. Dynamic X-rays
2. Traction spur
3. Abnormal translatory motion
4. Highest rate of relief of CLBP with fusion

A trial of ext. fixators clinches the issue



Olerud S et al. Clin Orthop 1986.  
Esses SI, et al. Spine 14: 594-601, 1989.

# INSTABILITY CORRECTED BY PLIF



# IOTROGENIC INSTABILITY

- Inadvertent cutting of pars
- Cutting 50% facets bilaterally
- Cutting entire one facet
  
- Renewed back pain with instability
- X-rays demonstrate the instability

White and Punjabi. St. Louis: C.V. Mosby. 457-483, 1981.



# DISCOGENIC PAIN

- ❖ Disc degeneration without prolapse is common.
- ❖ Important cause of CLBP

**North American Spine Society. Spine 13: 1343, 1988**

- ❖ Discography helps to pinpoint the lesion.
- ❖ Fusion is the only answer.



# FUSION AND DISC EXCISION

- To avoid disc space settlement following disc excision, fusion is advised in:
  - Large disc prolapse in young
  - Central disc prolapse
  - Massive disc prolapse

Cloward RB. J.Neurosurg,10:154-168,1953.  
Vaughan PA et.al.Spine 13:690-695, 1988.



# PLIF



# UNDERSTANDING CLBP

- CLBP has confounded clinicians for a long time
- Emphasis lies in understanding CLBP as:
  - Neurophysiological problem
  - Complex psychological and enviromentally modified experience.



# UNDERSTANDING CLBP

- **Good results of fusion depend on:**
  - **Good personality**
  - **Low ego strength**
  - **Freedom from hypochondriasis**
  - **Absense of depression and**
  - **Not prone to hysterical outbursts**



# DELETERIOUS EFFECTS ON FUSION

- Following factors have adverse effects on fusion:
  - Age
  - Sex
  - Osteoporosis
  - Smoking



Brown CW et.al.Spine 11:952-943,1986  
Hanley EN et.al.Spine 14:48-50,1989.

# EXPECTATIONS FROM FUSION

❖ Following factors should be considered:

- Relief from pain
- Pain cannot be quantitated like grading of tumours
- Visual analogs need pt's co operation
- Many times CLBP is depression from mind which has slipped into the back.



Fredrickson BE et.al.J.Bone Jt.Surg.66:699-707,1984

# CONCLUSIONS

- Fusion has a role in the treatment of CLBP
- Instability, at times, becomes a threat to neurological deficit. Fusion is the only answer
- There has to be intelligent rapport between clinician and patient.
- Fusion is technically demanding and needs experience.



**THANK YOU**

