KYPHOPLASTY

VS

VERTEBROPLASTY

OUR ADVANCED INDICATIONS

AND

RESULTS

G. Calvosa, M.D'Arcangelo.

PRIMA CLINICA ORTOPEDICA

UNIVERSITA' DI PISA

KYPHOPLASTY

Vs

VERTEBROPLASTY

1984

Hervè Deramond

(Amiens)

VERTEBRAL ANGIOMA

IN

CERVICAL DISTRICT

KYPHOPLASTY

Vs

VERTEBROPLASTY

VERTEBROPLASTY

MINIMALLY INVASIVE TECHNIQUE

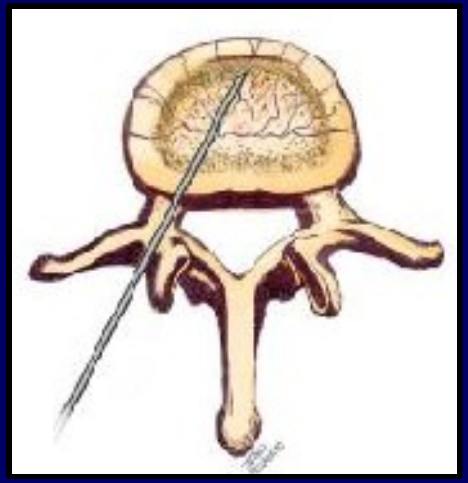
KYPHOPLASTY

Vs

VERTEBROPLASTY

VERTEBROPLASTY

- Easy execution technique
- A monolateral transpedicular approach
- Pain relief by 80% of patients



KYPHOPLASTY

Vs

VERTEBROPLASTY

VERTEBROPLASTY

LIMITS OF THE TECHNIQUE

- ✓ Absence of an improvement of the rachidian biomechanics due to lack of reduction of the fracture

KYPHOPLASTY

Vs

VERTEBROPLASTY

VERTEBROPLASTY

LIMITS OF THE TECHNIQUE

- ✓ Increases the risk of fracture in the adjacent levels due to lack of restoration of vertebral balance (it alters the weight-bearing forces)

SUBSEQUENT FRACTURE AFTER KYPHOPLASTY.
DAVID M FRIBOURG PAPER no 189

KYPHOPLASTY

Vs

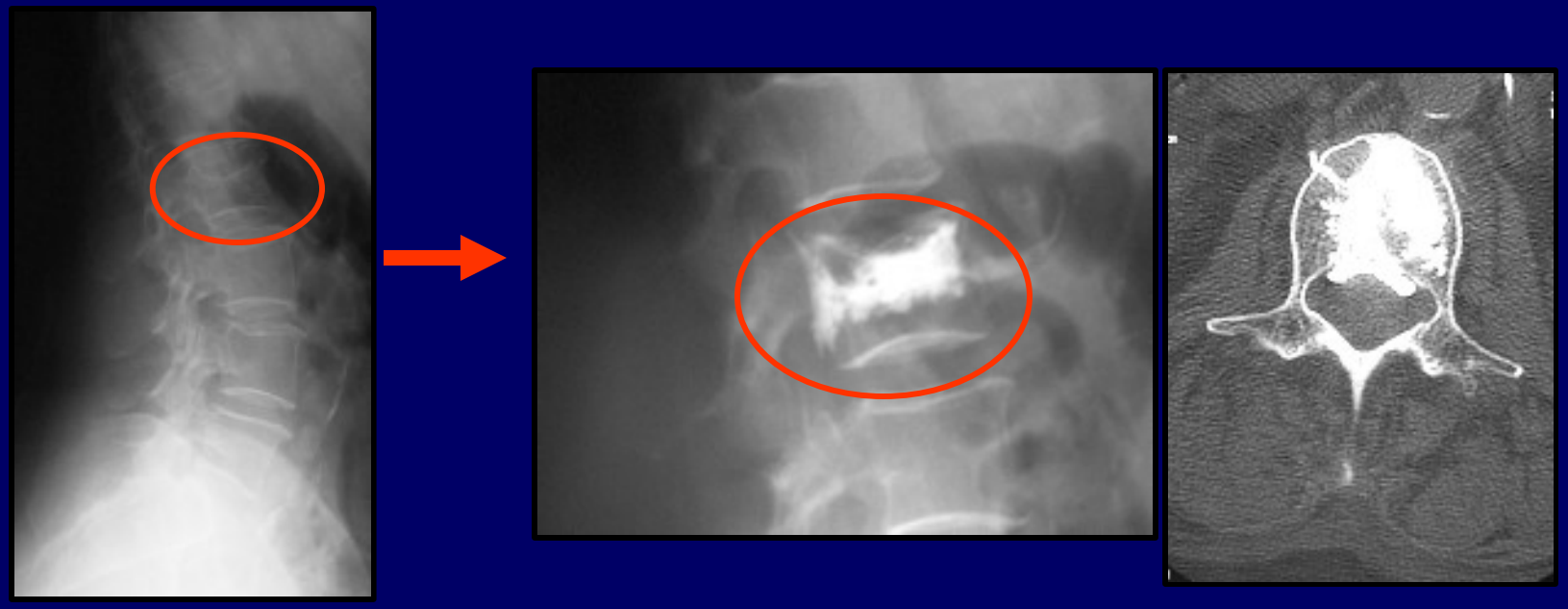
VERTEBROPLASTY

VERTEBROPLASTY

LIMITS OF THE TECHNIQUE

- ✓ Up to 65% extra-vertebral cement leak

  (vertebral canal or intraforaminal canal)



KYPHOPLASTY

Vs

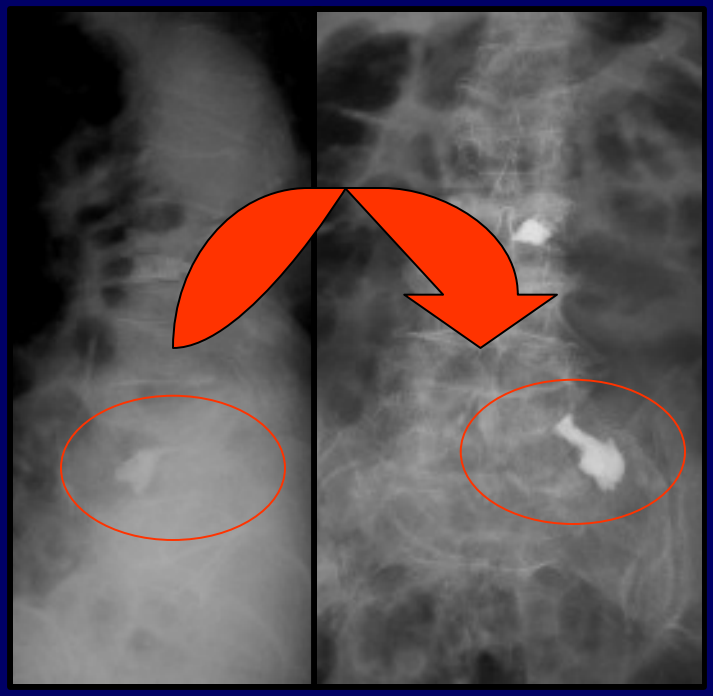
VERTEBROPLASTY

VERTEBROPLASTY

LIMITS OF THE TECHNIQUE

- ✓ Up to 65% extra-vertebral cement leak

  (vertebral canal or intraforaminal canal)



KYPHOPLASTY

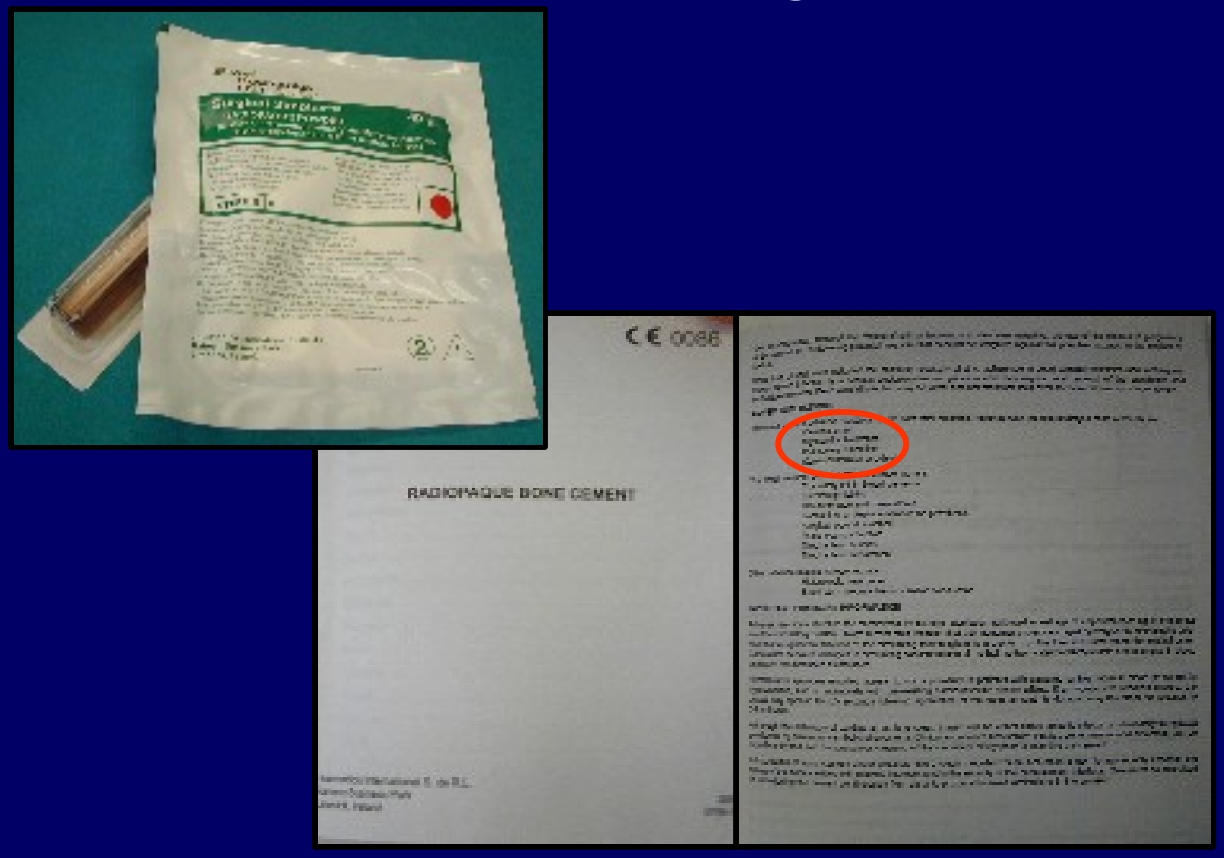
Vs

VERTEBROPLASTY

VERTEBROPLASTY

LIMITS OF THE TECHNIQUE

- ✓ PMMA monomer effects on lungs



KYPHOPLASTY

Vs

VERTEBROPLASTY

VERTEBROPLASTY

LIMITS OF THE TECHNIQUE

- ✓ Fat/marrow Embolism

Aebli et al.,Spine (2002) 27:5;460-6

KYPHOPLASTY

Vs

VERTEBROPLASTY

VERTEBROPLASTY

LIMITS OF THE TECHNIQUE

- ✓ Pressurized cement into cancellous bone due to lack of the " cementation room"

KYPHOPLASTY

Vs

VERTEBROPLASTY

1998

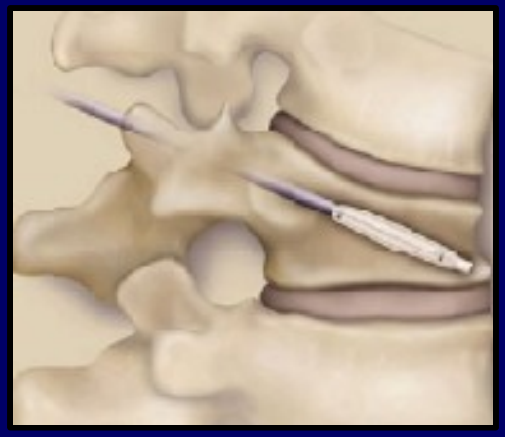
BALLON KYPHOPLASTY

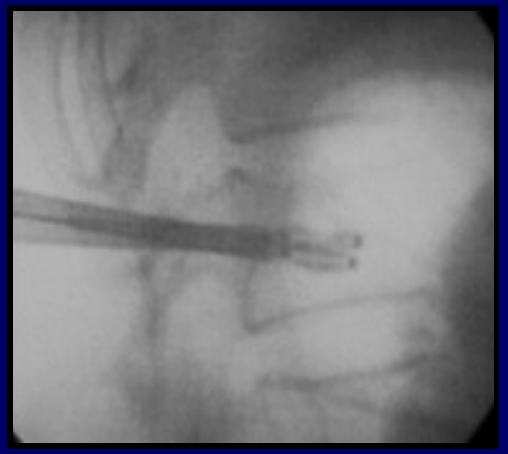
KYPHOPLASTY

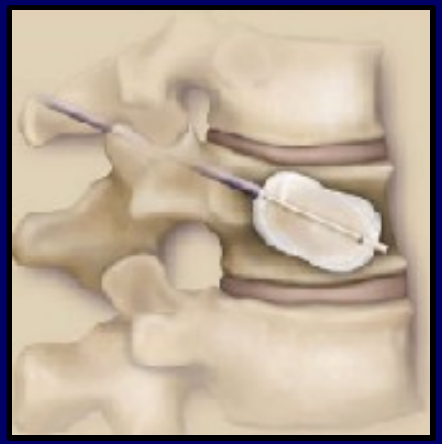
Vs

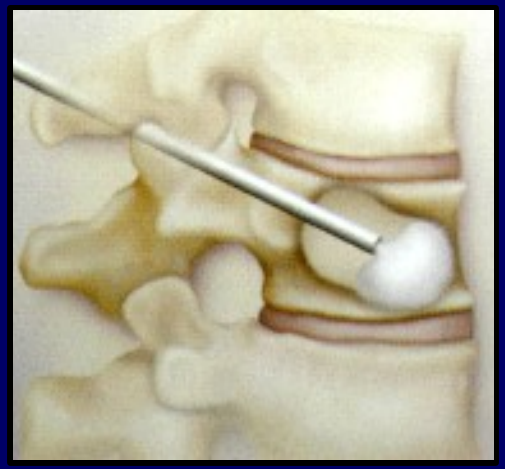
VERTEBROPLASTY

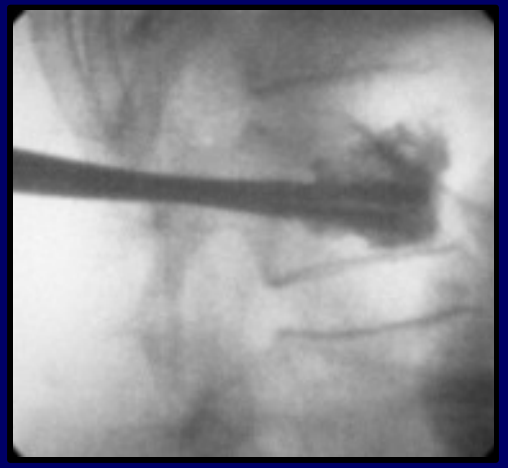
BALLON KYPHOPLASTY











KYPHOPLASTY

Vs

VERTEBROPLASTY

BALLON KYPHOPLASTY

THE IMPORTANCE of the IMAGINING

MRI is of fundamental importance for

(pre-opreatoria phase)

- Dating the lesions (T2, STIR)
- Identifing the symptomatic level

KYPHOPLASTY
Vs
VERTEBROPLASTY

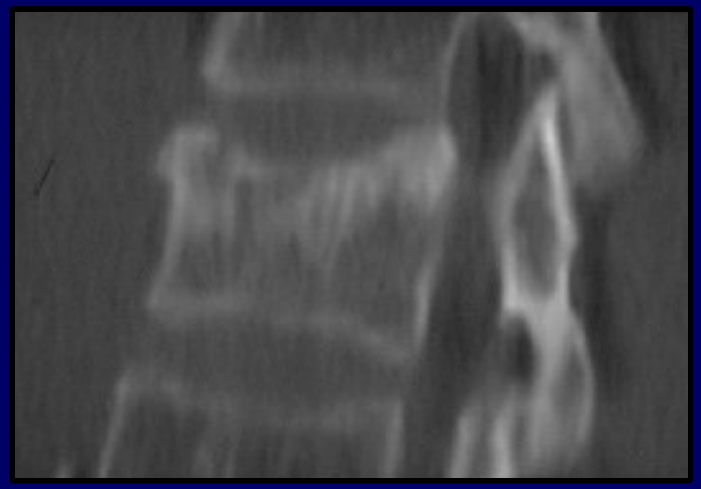
BALLON
KYPHOPLASTY

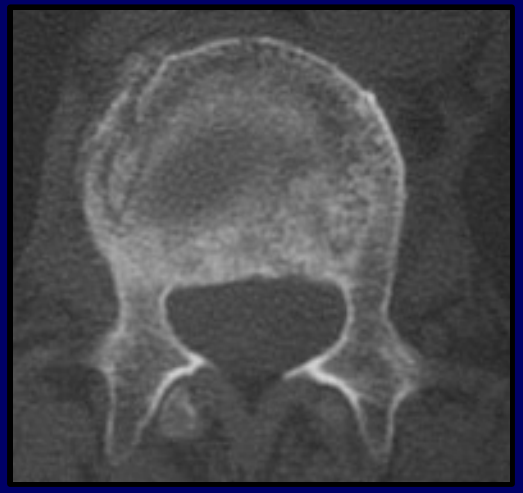
THE IMPORTANCE of the IMAGINING

CT is important (sagittal and cross-sectional scansions) for

(pre-opreatoria phase)

- Studing posterior vertebral wall





KYPHOPLASTY
Vs
VERTEBROPLASTY

BALLON KYPHOPLASTY

INDICATIONS

Painful osteoporotic or osteolytic compression fractures recent and not more than 50 days from the trauma, in the toracic or lumbar vertebrae stemming from:

- Primary or secondary osteoporosis
- Osteolytic tumor metastasis (no osteoblastic tumors)
- Symptomatic angioma

KYPHOPLASTY
Vs
VERTEBROPLASTY

BALLON KYPHOPLASTY

CONTRAINDICATIONS

Absolute

- Pregnancy
- Uncorrectable Coagulopathy
- Osteomyelitis
- Spondilodiscitis

KYPHOPLASTY
Vs
VERTEBROPLASTY

BALLON KYPHOPLASTY

CONTRAINDICATIONS

Relative

- Vertebra plana
- High velocity fractures
- Burst fractures with retropulsed bone < 20% in spinal canal (in association with rigid stabilization)

KYPHOPLASTY

Vs

VERTEBROPLASTY

BALLON KYPHOPLASTY

ADVANTAGES

- Stabilizes fracture and allows more selective cementation and at low pressure

KYPHOPLASTY

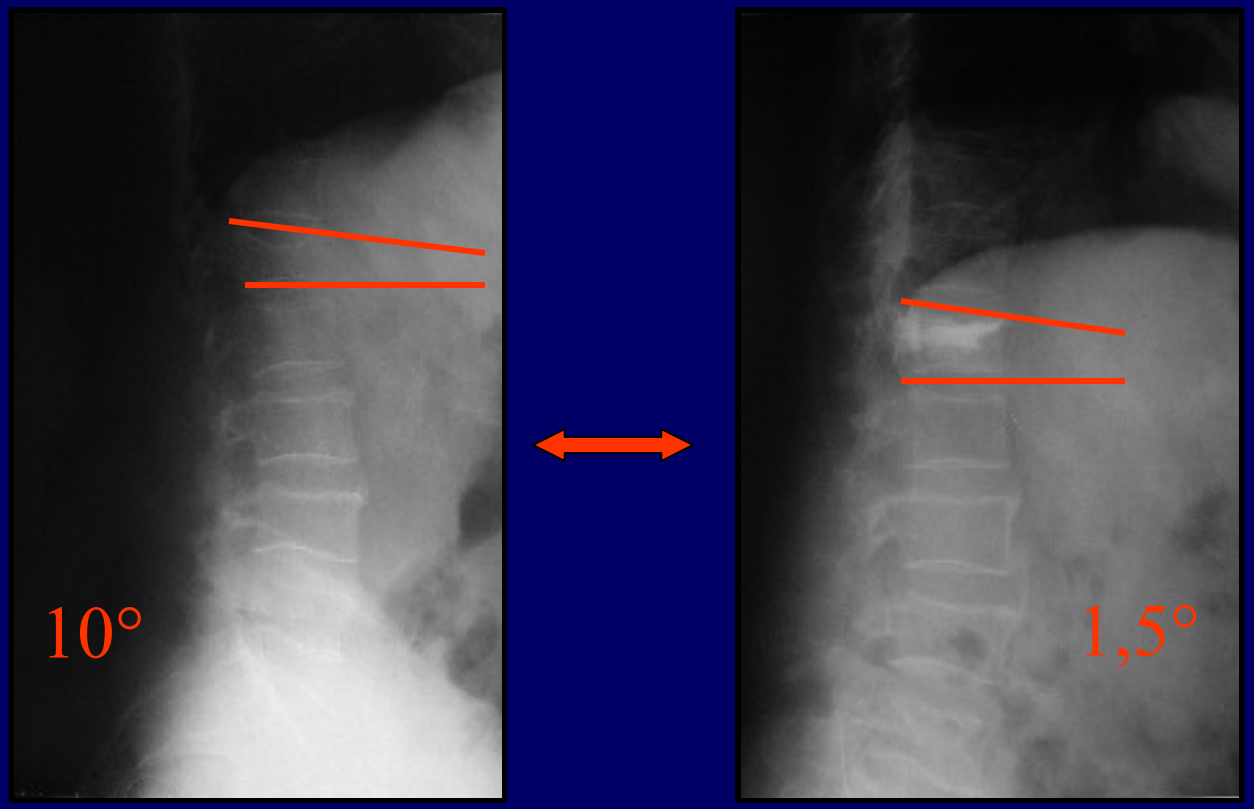
Vs

VERTEBROPLASTY

BALLON KYPHOPLASTY

ADVANTAGES

- Restores vertebral body height by about 50% in 70% patients (Lieberman 2001 Spine)



KYPHOPLASTY

Vs

VERTEBROPLASTY

BALLON KYPHOPLASTY

ADVANTAGES

- Reduces the spinal deformity with restoration of the vertebral balance

KYPHOPLASTY
Vs
VERTEBROPLASTY

BALLON KYPHOPLASTY

ADVANTAGES

- Pain relief is reported by 90% of patients

  (SF-36 and VAS scores with improvement of life quality)

Mitchell et all, Nass,10 -2001 Garfin et all, Spine,, 2001

Coumans MD et al, J Neurosug (Spine 1) 99, 2003

KYPHOPLASTY

Vs

VERTEBROPLASTY

BALLON KYPHOPLASTY

ADVANTAGES

- Creates bone void lowering leakage risk

Phillips et al, SPINE,2002

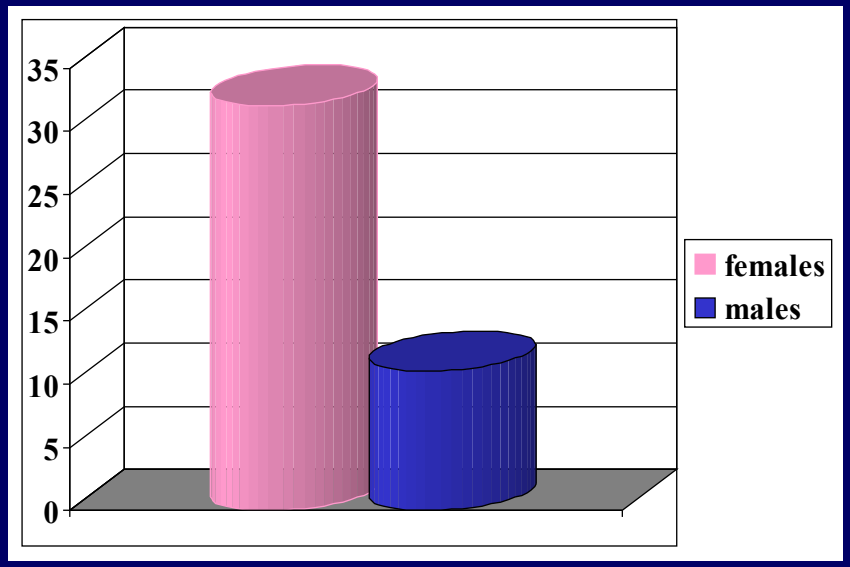
KYPHOPLASTY
Vs
VERTEBROPLASTY

BALLON KYPHOPLASTY

OUR EXPERIENCE

43 CASES

- 32 Females
- 11 Males



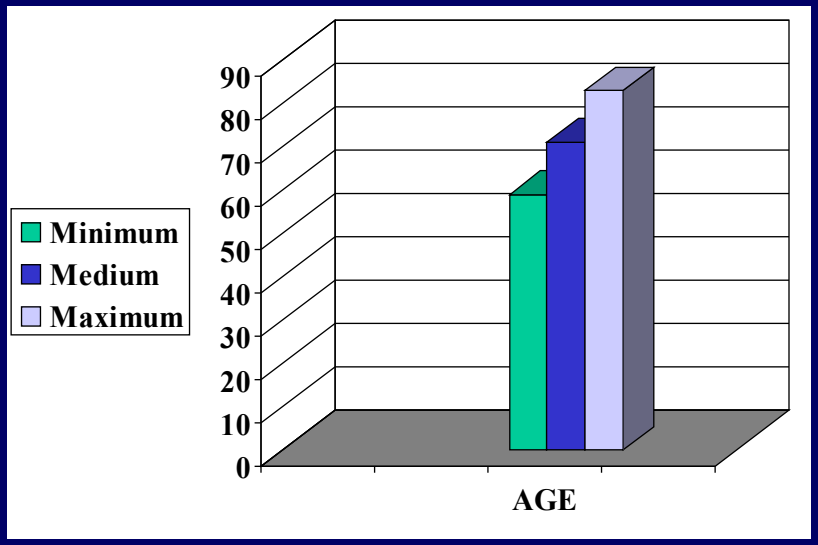
KYPHOPLASTY
Vs
VERTEBROPLASTY

BALLON KYPHOPLASTY

OUR EXPERIENCE

43 CASES

- 59 aa Minimal Age
- 71 aa Medium Age
- 83 aa Maximum Age



KYPHOPLASTY
Vs
VERTEBROPLASTY

BALLON KYPHOPLASTY

OUR EXPERIENCE

43 CASES

- 36 osteoporotic recent fractures to one or more levels
- 5 cases of fractures to 50 days
- We have not dealt with tumor metastasis

KYPHOPLASTY

Vs

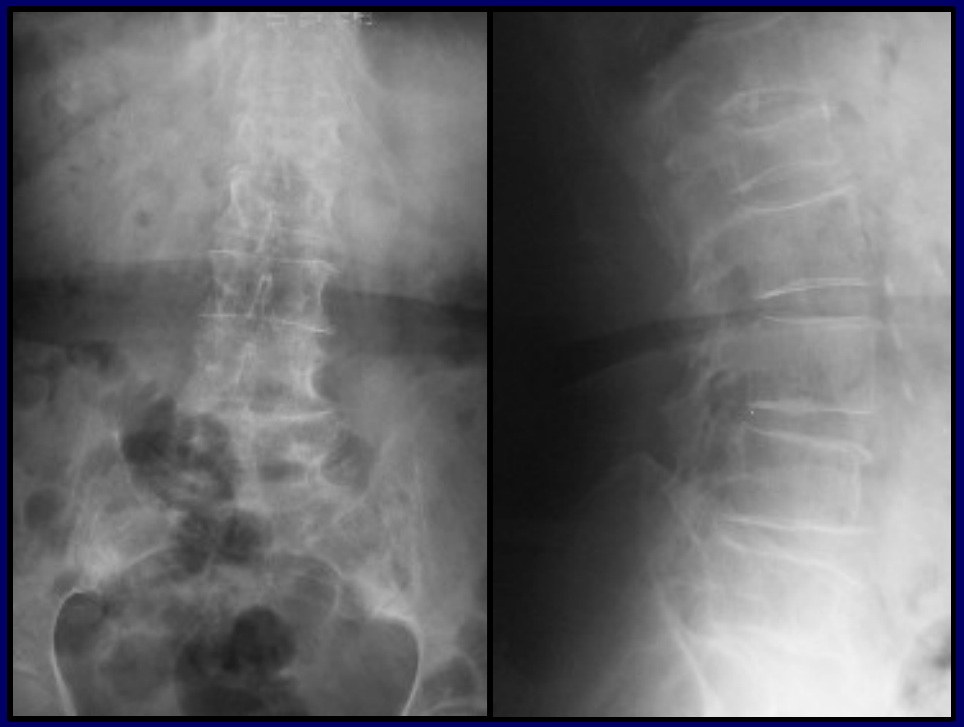
VERTEBROPLASTY

BALLON KYPHOPLASTY

OUR EXPERIENCE

43 CASES

- 36 osteoporotic recent fractures to one or more levels



KYPHOPLASTY

Vs

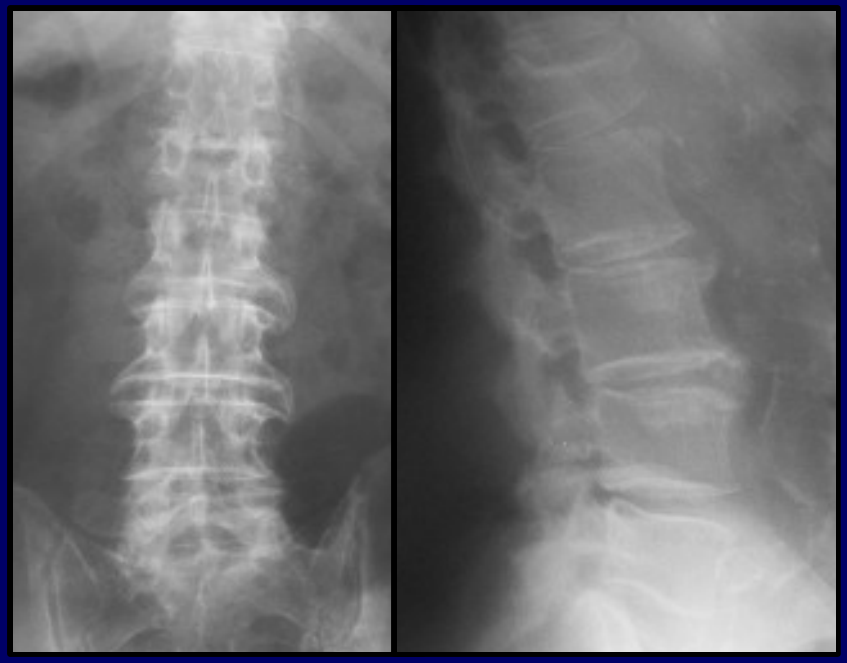
VERTEBROPLASTY

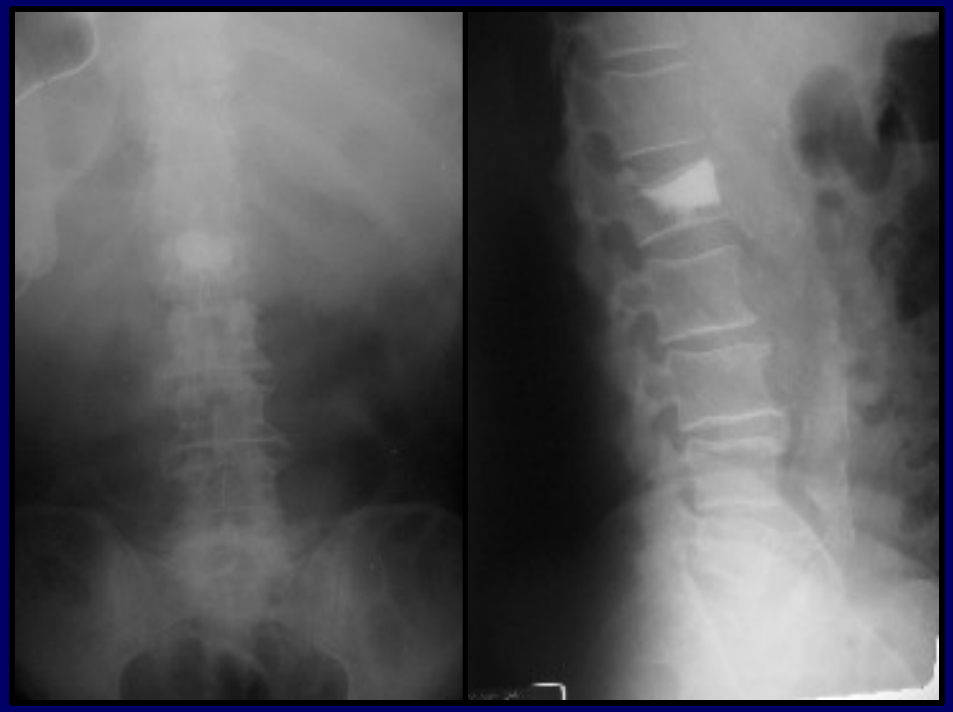
BALLON KYPHOPLASTY

OUR EXPERIENCE

43 CASES

- 36 osteoporotic recent fractures to one or more levels





KYPHOPLASTY

Vs

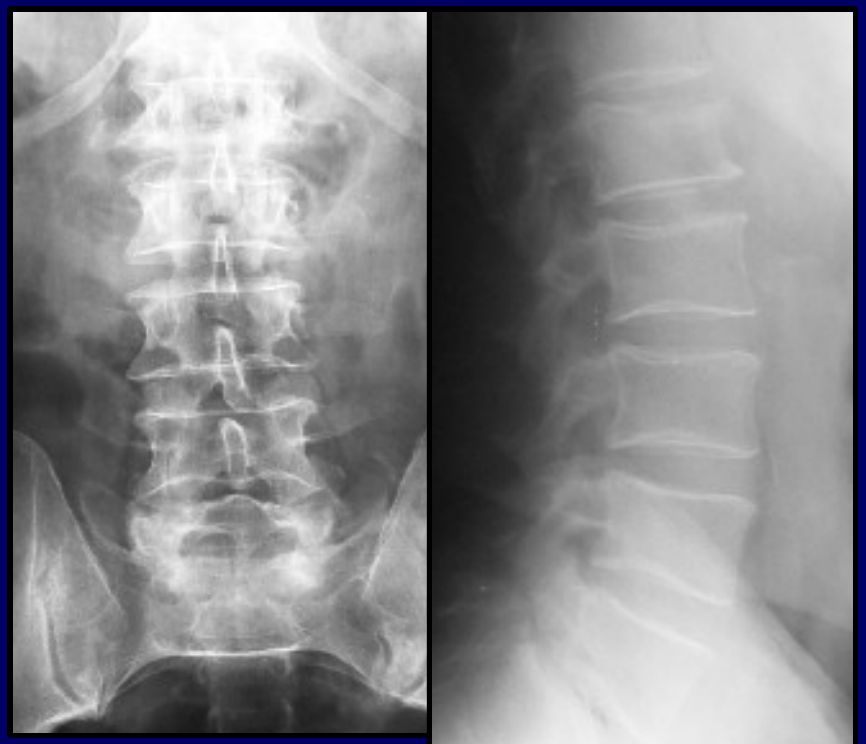
VERTEBROPLASTY

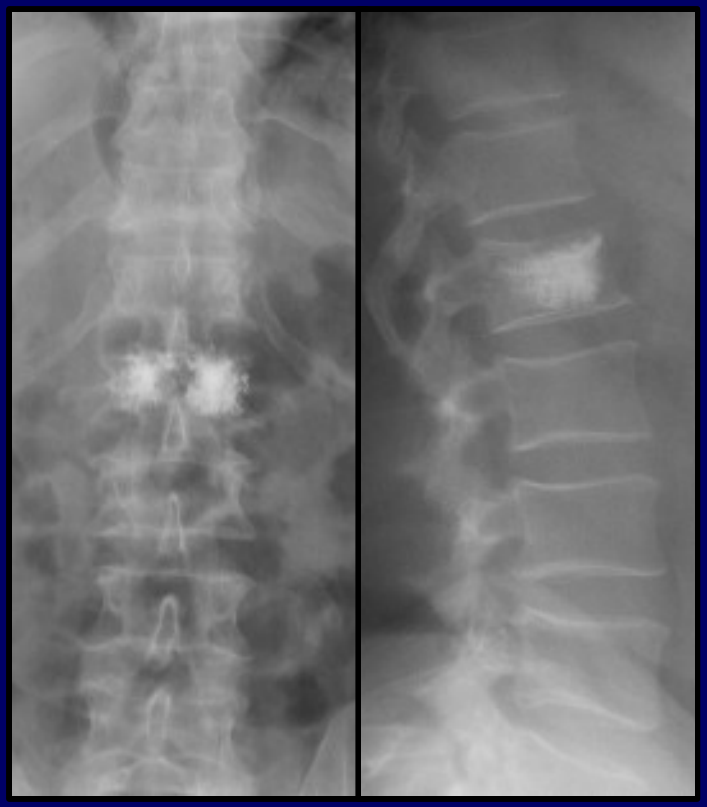
BALLON KYPHOPLASTY

OUR EXPERIENCE

43 CASES

- 36 osteoporotic recent fractures to one or more levels





KYPHOPLASTY

Vs

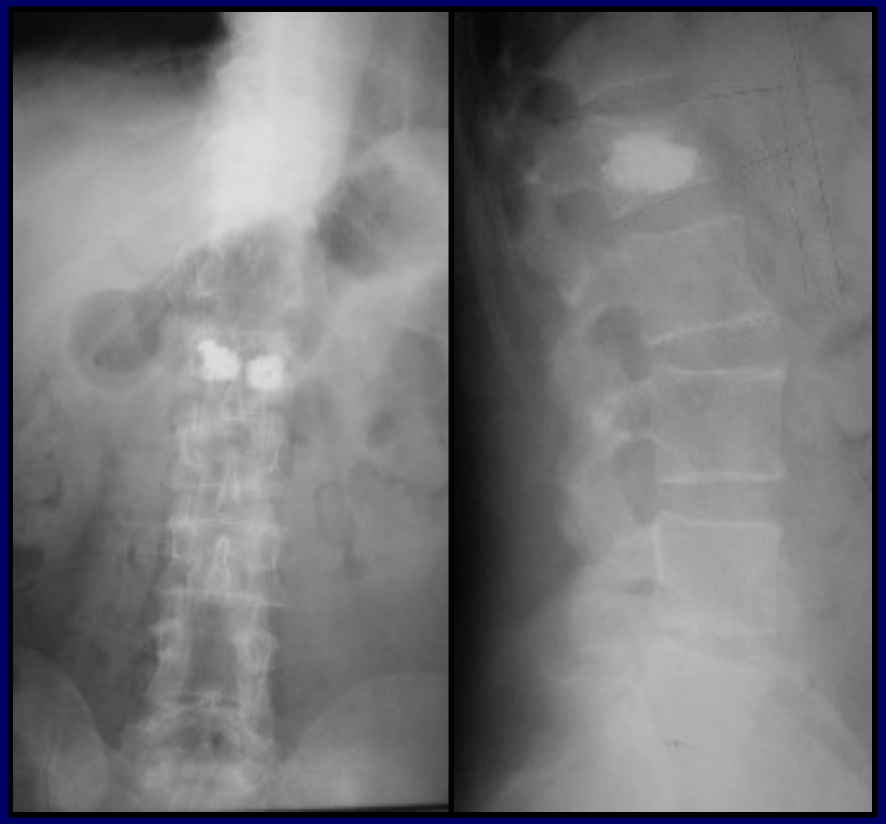
VERTEBROPLASTY

BALLON KYPHOPLASTY

OUR EXPERIENCE

43 CASES

- 36 osteoporotic recent fractures to one or more levels



KYPHOPLASTY

Vs

VERTEBROPLASTY

BALLON KYPHOPLASTY

OUR EXPERIENCE

43 CASES

- 2 traumatic high velocity fracture in lumbo-sacral district.

("A " according to Muller classification)

Kyphpoplasty in association with Rigid Stabilization

KYPHOPLASTY

Vs

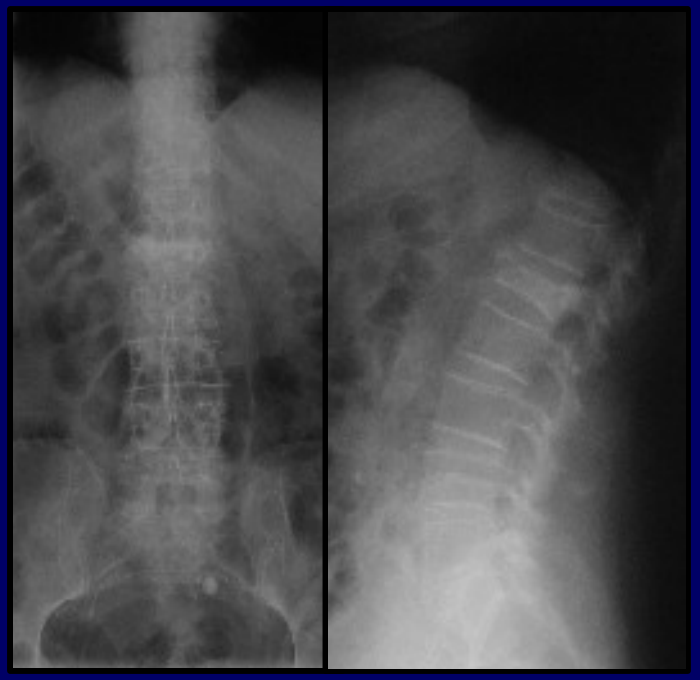
VERTEBROPLASTY

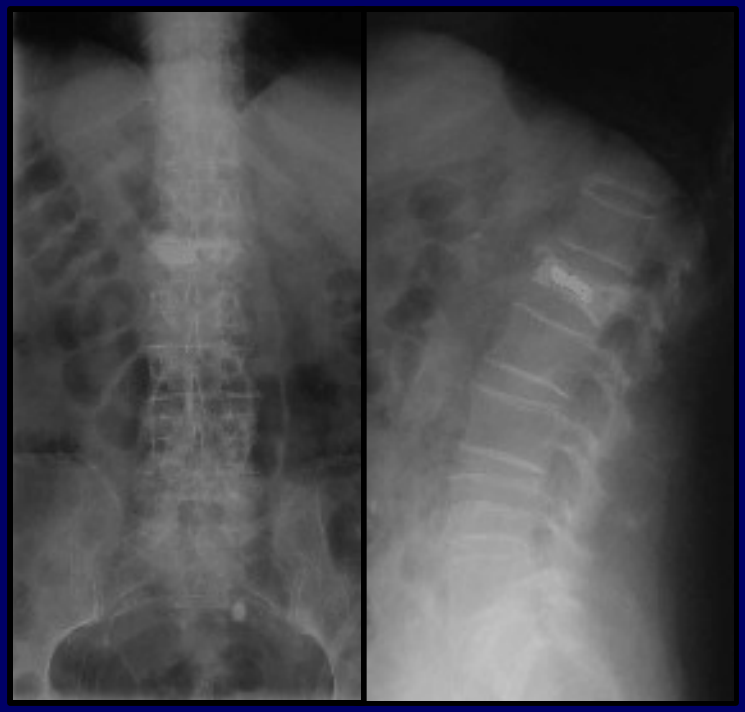
BALLON KYPHOPLASTY

OUR EXPERIENCE

43 CASES:

- 2 vertebre plane





KYPHOPLASTY

Vs

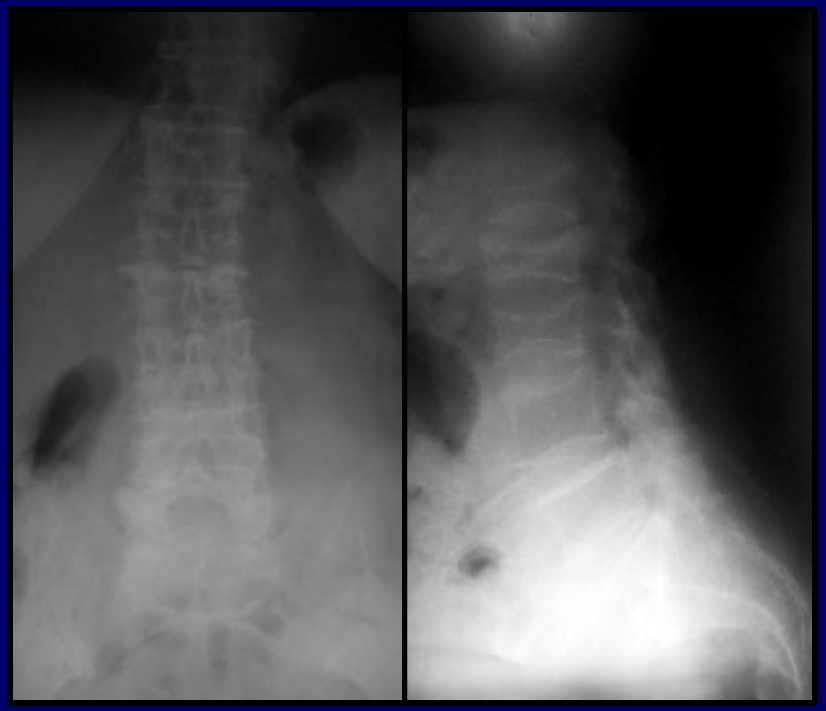
VERTEBROPLASTY

BALLON KYPHOPLASTY

OUR EXPERIENCE

43 CASES:

- 2 vertebre plane



KYPHOPLASTY

Vs

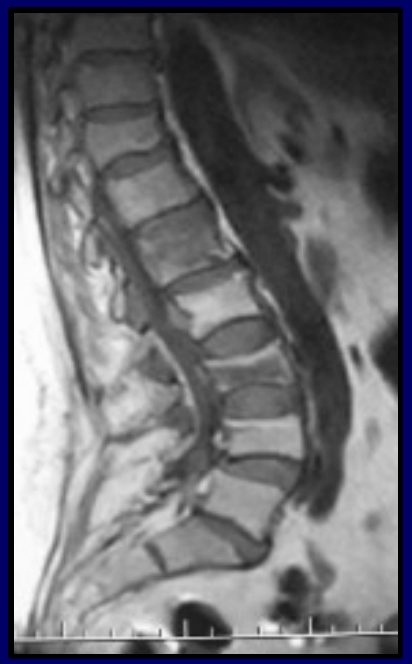
VERTEBROPLASTY

BALLON KYPHOPLASTY

OUR EXPERIENCE

43 CASES:

2 preventive ballon kyphpoplasty in the healthy levels adjacent to the fractured ones in order to avoid the risk of new fractures



KYPHOPLASTY

Vs

VERTEBROPLASTY

CONCLUSIONS

KYPHOPLASTY

KYPHOPLASTY

Vs

VERTEBROPLASTY

CONCLUSIONS

- Surer
- Better for pain relief
- More effective in the restoration of vertebral balance with reduction of the risk of new fractures

THANK YOU