Comparation between pedicle and sacroiliac screws versus sublaminar wires and unit rod in correction of complex spine and pelvic neuromuscular deformities.

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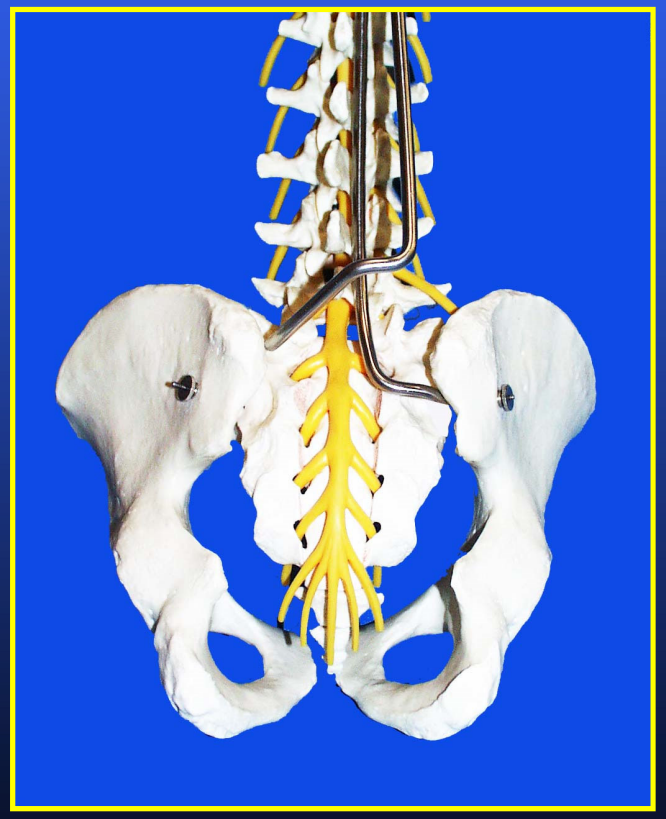
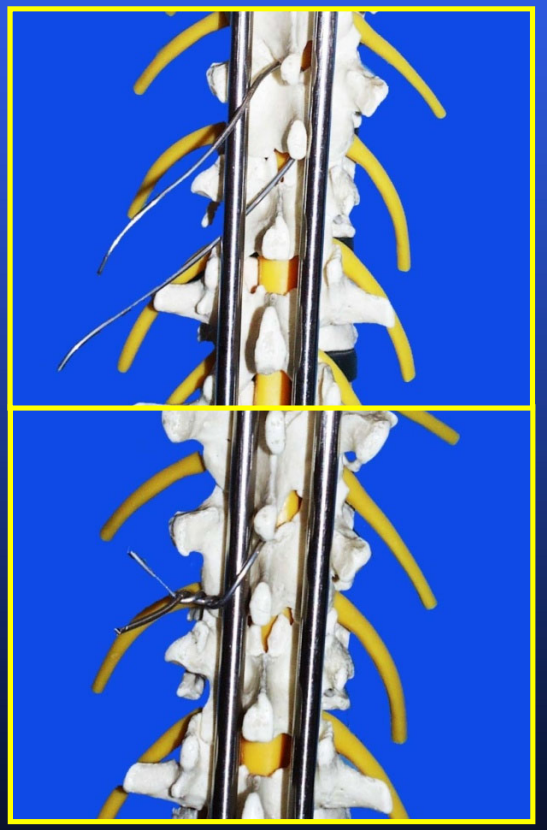
Introduction

Spinal deformity in neuromuscular patients is most frequently combined with:

- pelvic obliquity
- lumbar hyperlordosis
- hip deformity
- leg-length discrepancy
- associated organ dysfunctions

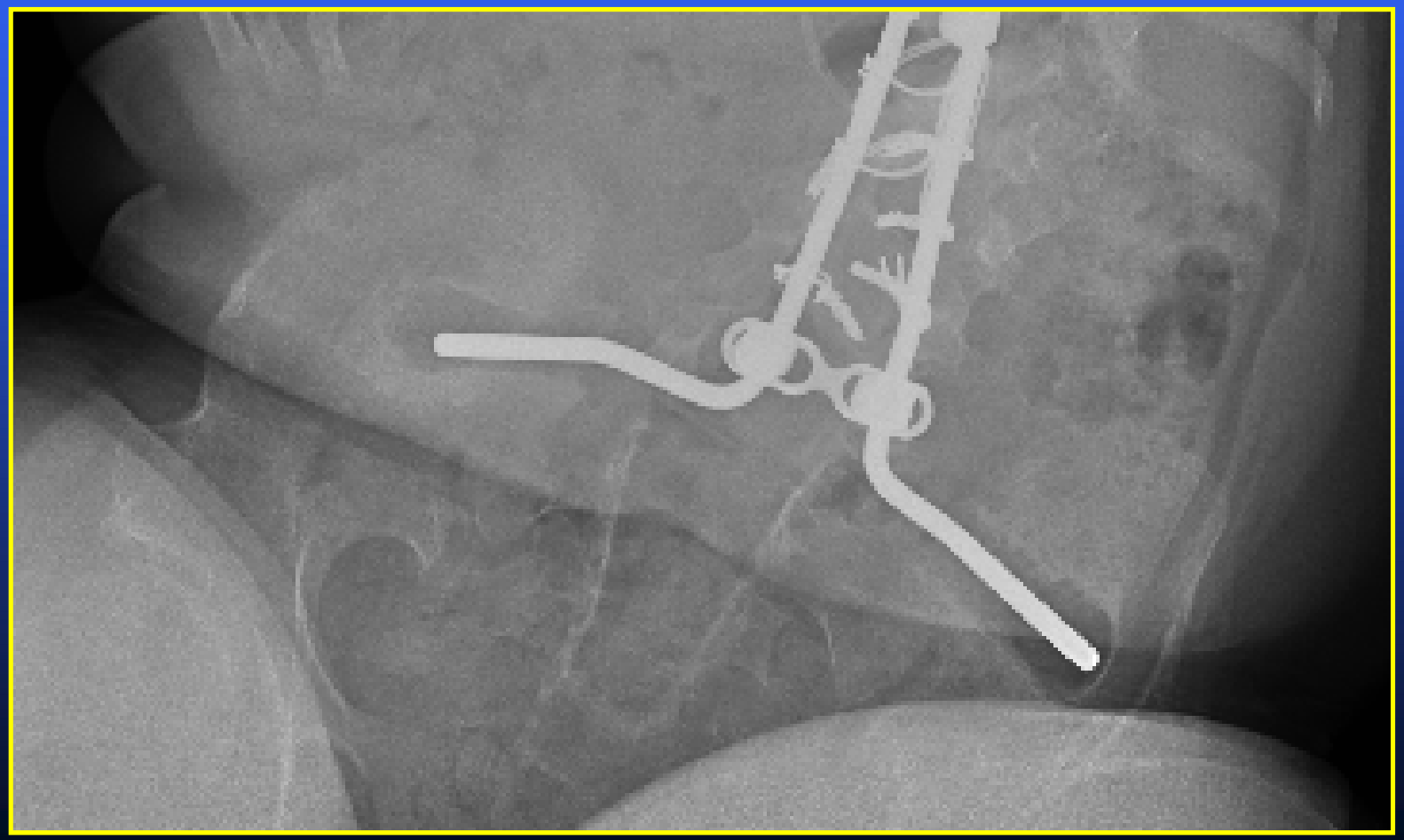
Classical surgical technique
Luque-Galveston





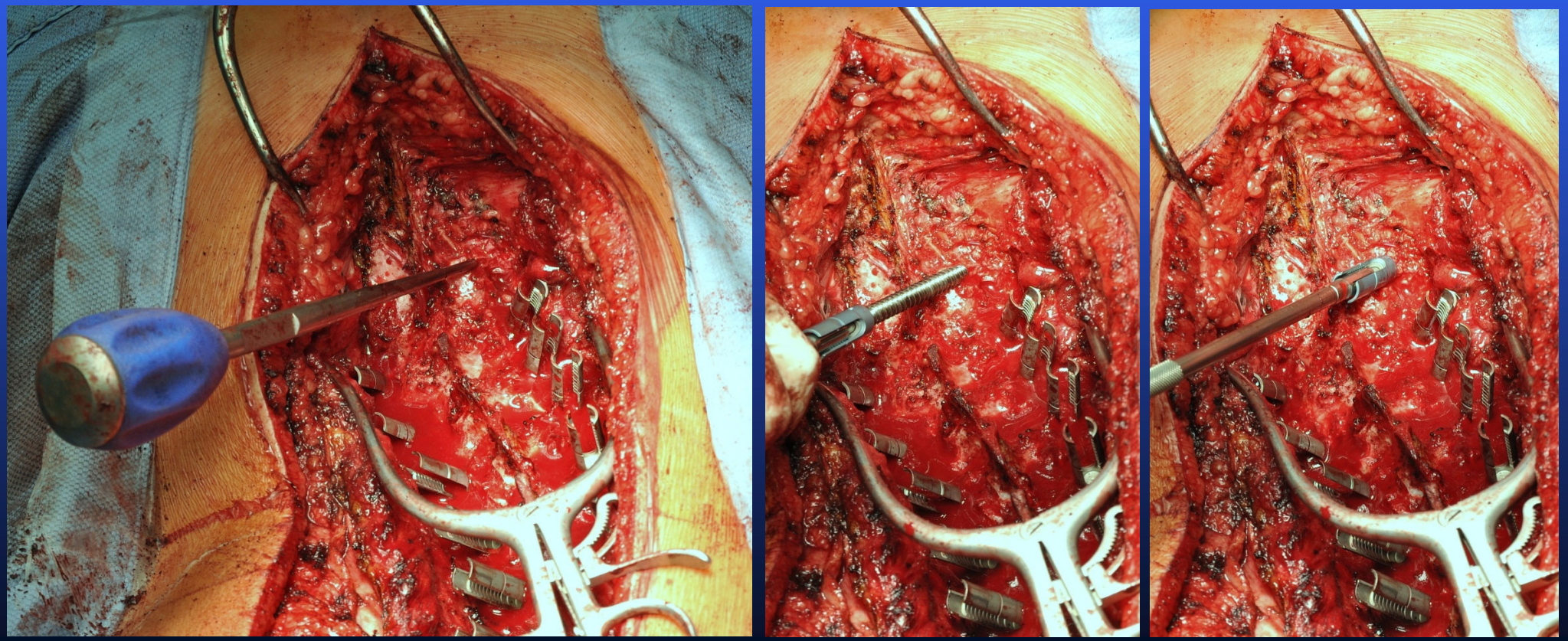
1st main problem

Loss of rod stability in pelvis
"halo effect"



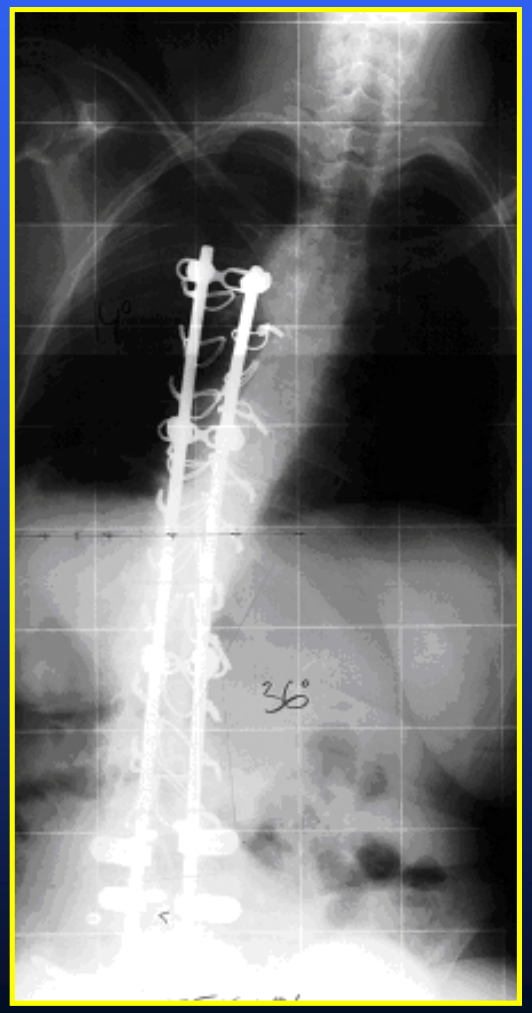
Solution

sacroiliiacal screw insertion



2nd main problem

Dislocation of instrumentation

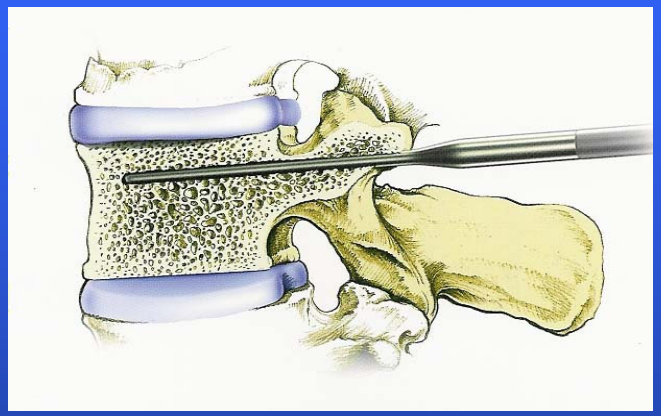


Due to:

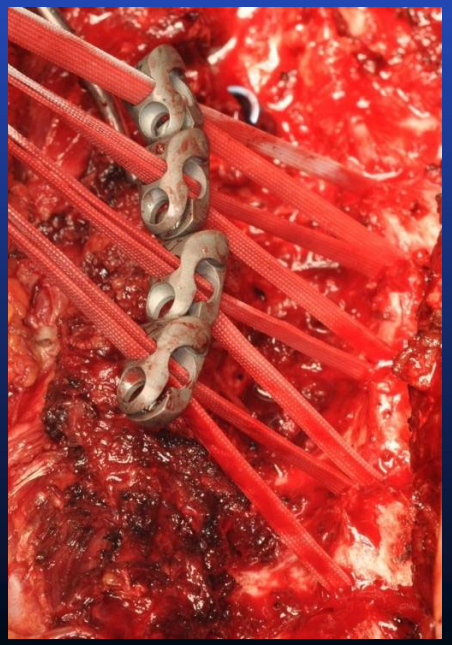
- Poor bone quality (osteoporosis)
- Inadequate material characteristics

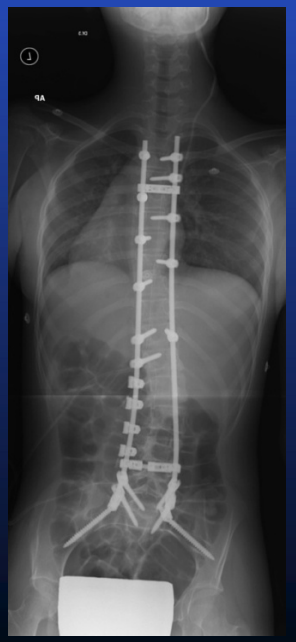
Solutions

Transpedicular screws



Universal clamps



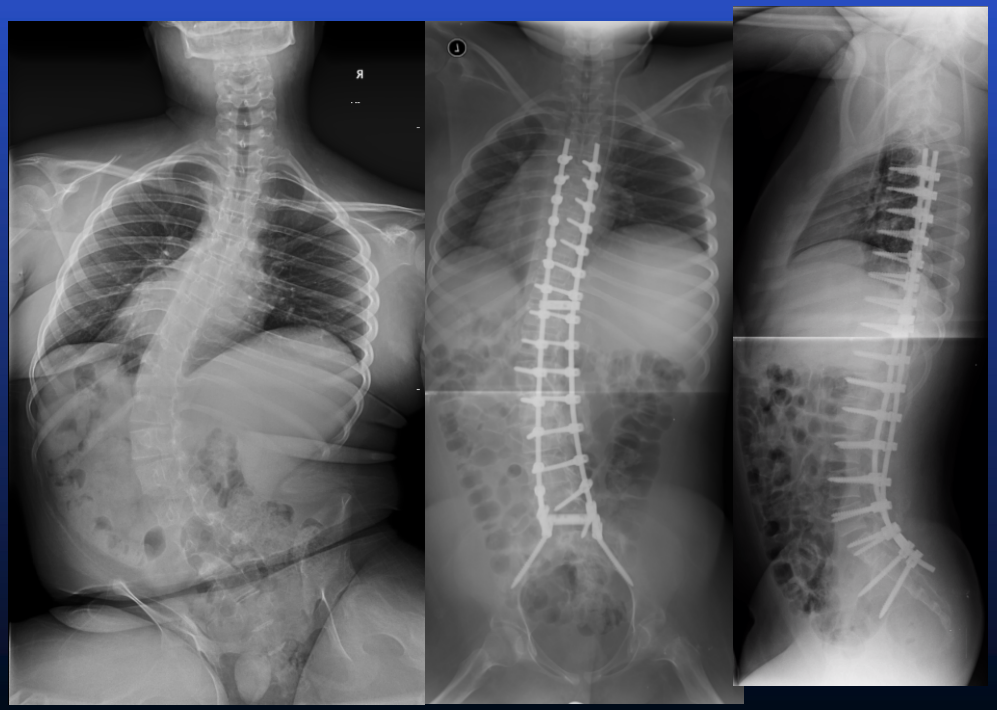


Modern surgical treatment

Pelvic correction and stabilisation

in combination with:

Transpedicular instrumentation



Hybride instrumentation (TP screws and sublaminar devices)

Material

82 patients (48girls,34 boys)

	Luque-Galveston	TP + SI screws
No.of patients	42	40
Average age	13y.+ 9m.	14y.+ 9m.
Follow up	11y. + 6m.	3y. + 5m.

Material

Types of curves

	Luque-Galveston	TP + SI screws
	42	40
Cerebral palsy	18	16
Duchenne dystrophy	7	13
Spinal atrophy	6	3
Paralysis	5	4
Meningomyelocele	3	3
Artrogryphosis	3	1

Results

	Luque-Galveston			TP + SI screws		
	Preop.	Postop.	% correction	Preop.	Postop.	% correction
Pelvic obliquity	21	7	67%	23	3	87%
Frontal profile	105	49	53%	108	35	68%
Rate of comlications	19%			7%		

Conclusions

The radiographic and clinical findings in the patients treated showed better correction of pelvic deformities in the frontal and sagittal planes as well as spinal scoliotic curve in patient operated using transpedicular screw systems with combination of sacroiliac screw than in patient operated with traditional Luque-Galveston technique.

Pelvic obliquity and spinal curve correction thus contributes to the improvement of sitting stability in physically disabled patients.