



# New Self Growing Rod

*Preliminary Results on a Series  
of 18 Neuromuscular Scoliosis*

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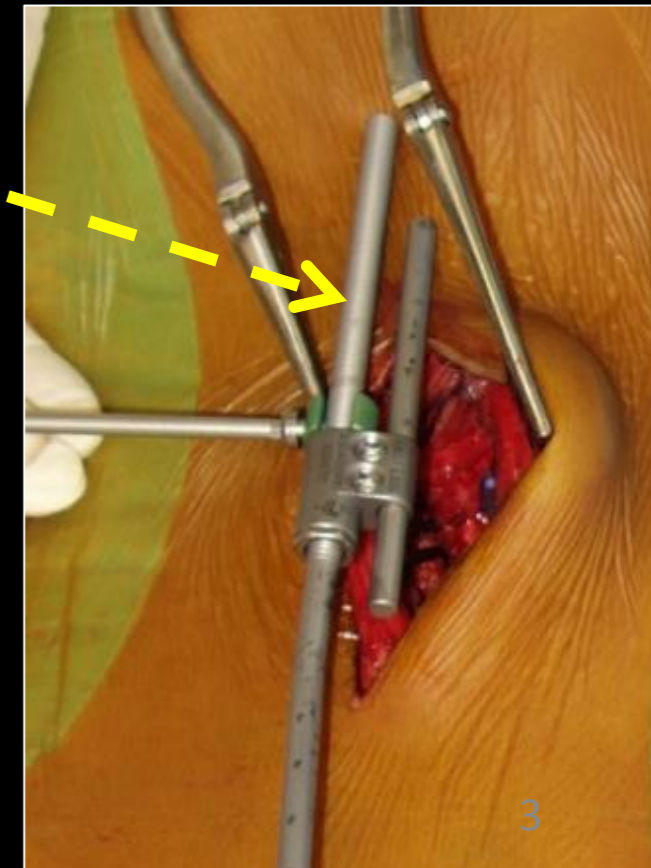
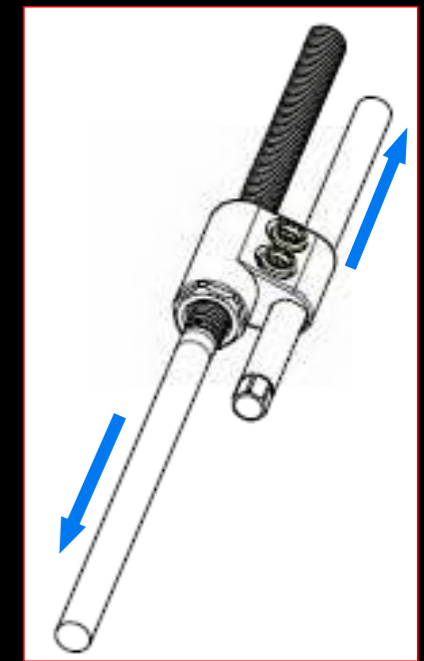
# Disclosures

- L. MILADI Euros
- R. HAJJ No relation
- N. KHOURI No relation
- V. TOPOUCHIAN No relation
- C. GLORION No relation



# Introduction

- One direction Sliding Rod
- Mechanical principle
- 2 Sizes of lengthening reserve (50 or 80mm)
- "CE" Marked



# ● ● ● | How does it work

## 1- By passive expansion:

- Spontaneously by **daily activity** (transfers, sports...)
- Spontaneously by **natural growth** of the spine



## 2- By active expansion:

- With **axial traction** « *On demand* »



Cotrel auto-elongation method



Cast frame



Spinal surgery table



Physiotherapy



Halo gravity

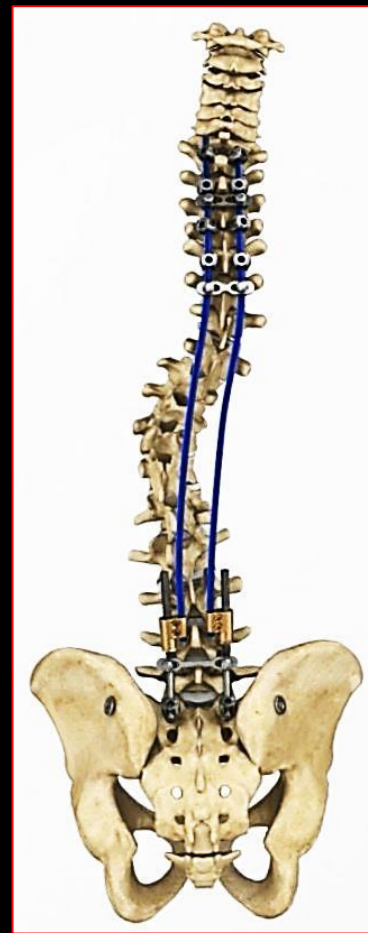
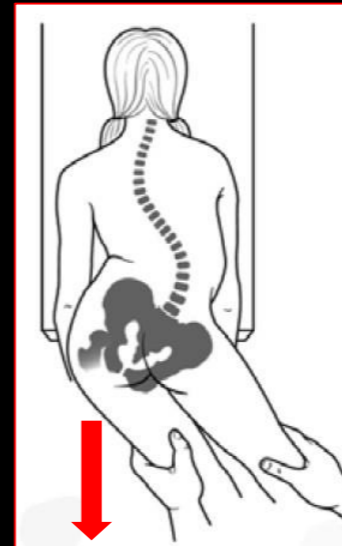


Stagnara cast



## How to use it

1. With a minimally invasive approach
2. In a bilateral construct
3. Traction for stiff curves (+/- symmetrical)

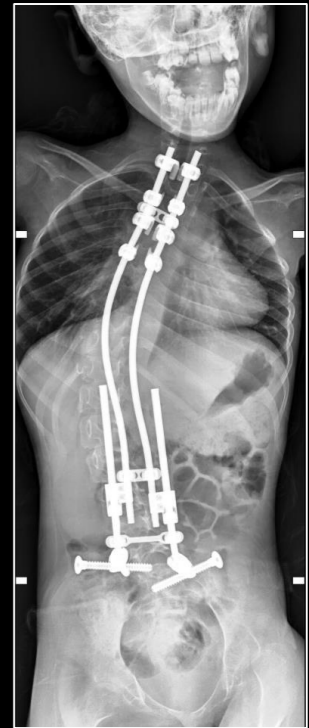
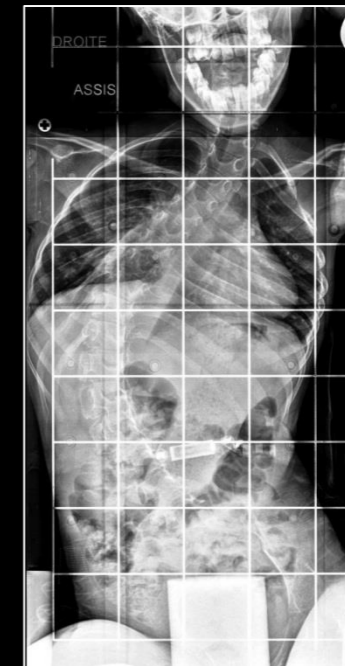




## Our series

### 18 cases of Neuro Muscular Scoliosis

- Average follow up 2 years
- 9 girls + 9 boys
- Average operating age 11 years
- Etiologies: 10 CP, 4 SMA, 2 MD, 2 others neuro
- Mean Initial Cobb Angle :  $78^{\circ}$ , mean Pelvic obliquity :  $20^{\circ}$





## Results

- Rod expansion in 16 cases/18 (spontaneously) = 89%
- No rod expansion in 2 cases (conflict with crosslink)
- 3 complications in 2 patients (11%) :
  - 2 cases of infections
  - 1 Crosslink bulkiness
- No neurologic complications, no rod fracture, no implant dislodgement





# Results

- No complication in relation with the device = 0%
- Spontaneous expansion of the device leading to a continuous improvement of residual curve and residual pelvic obliquity

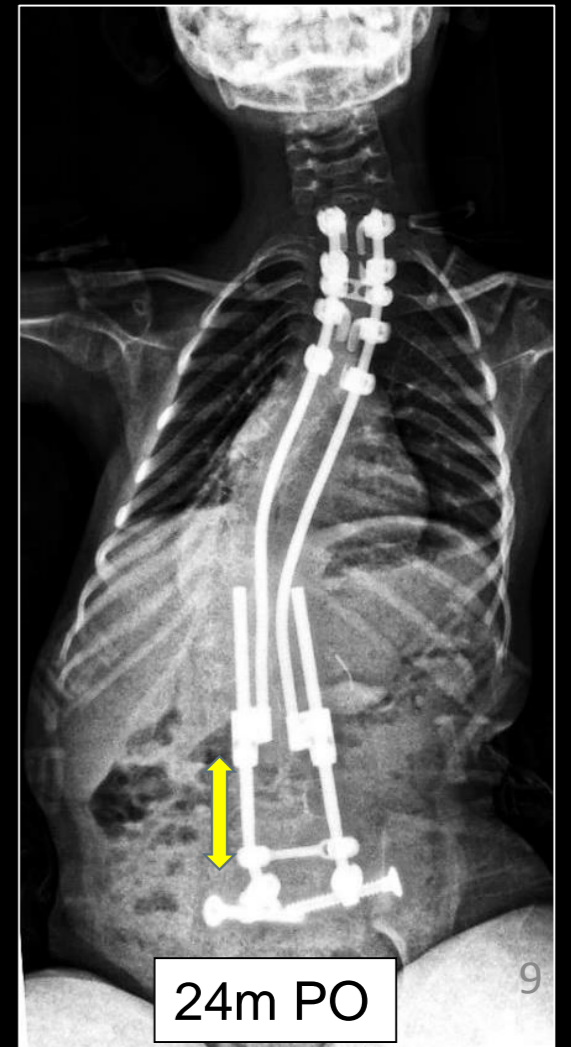
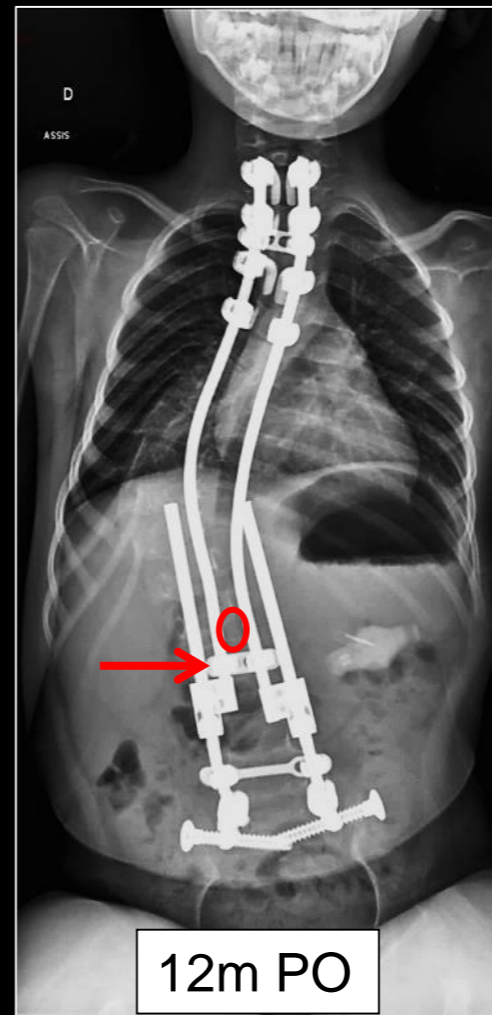
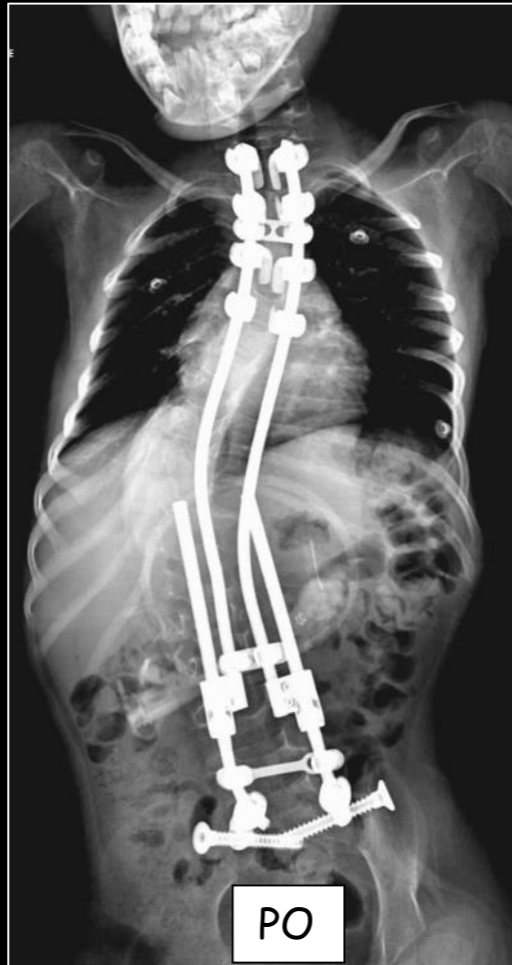
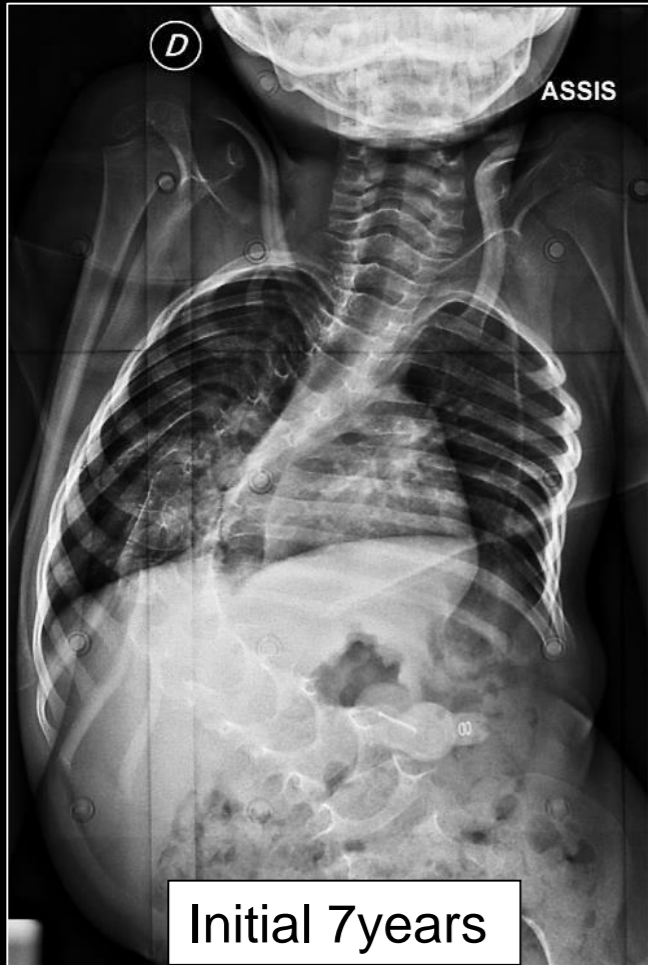
	Preop	Postop	Follow Up
Cobb Angle	78°	30° (62%)	26° (66%) +4%
Pelvic Obliquity	20°	12° (40%)	3° (85%) +45%
T1-T12 Length	19,80cm	21,85cm (+2,05)	23,72cm (+1,87cm/2a)
T1-S1 Length	31,97cm	35,23cm (+3,26)	38,44cm (+3,21cm/2a)



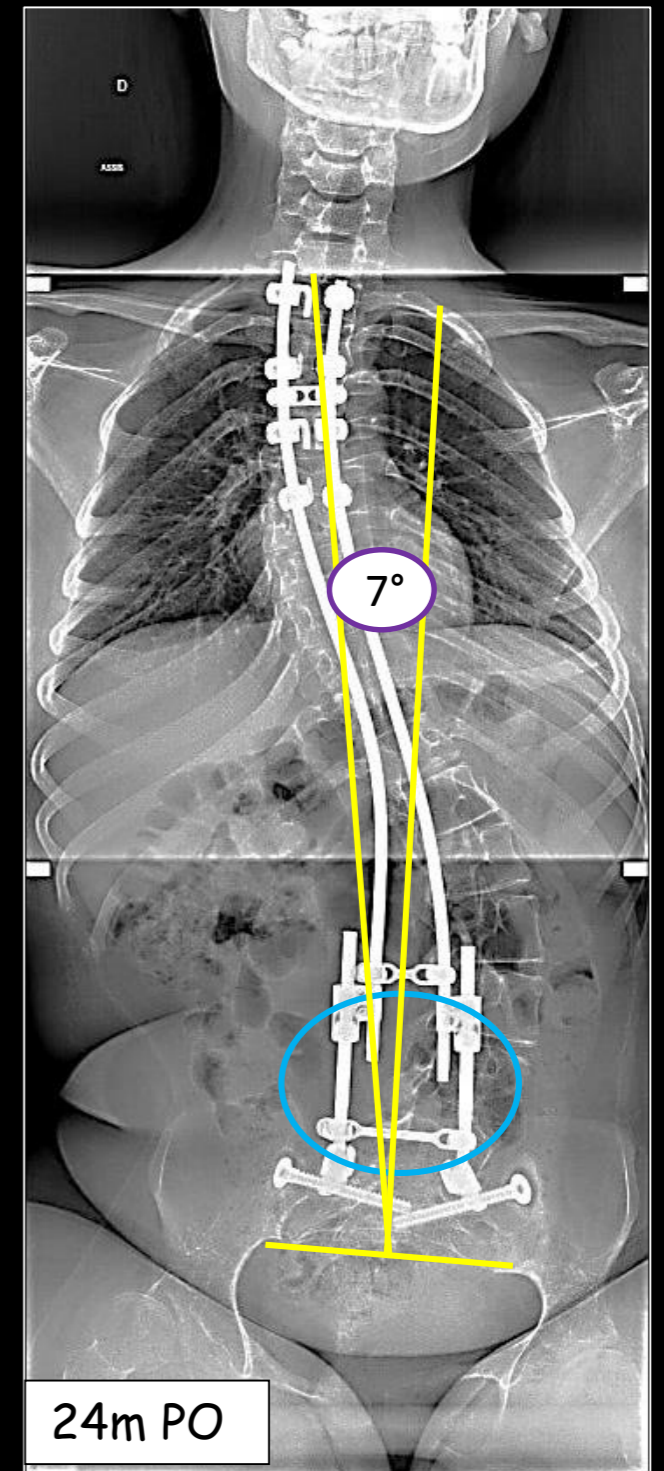
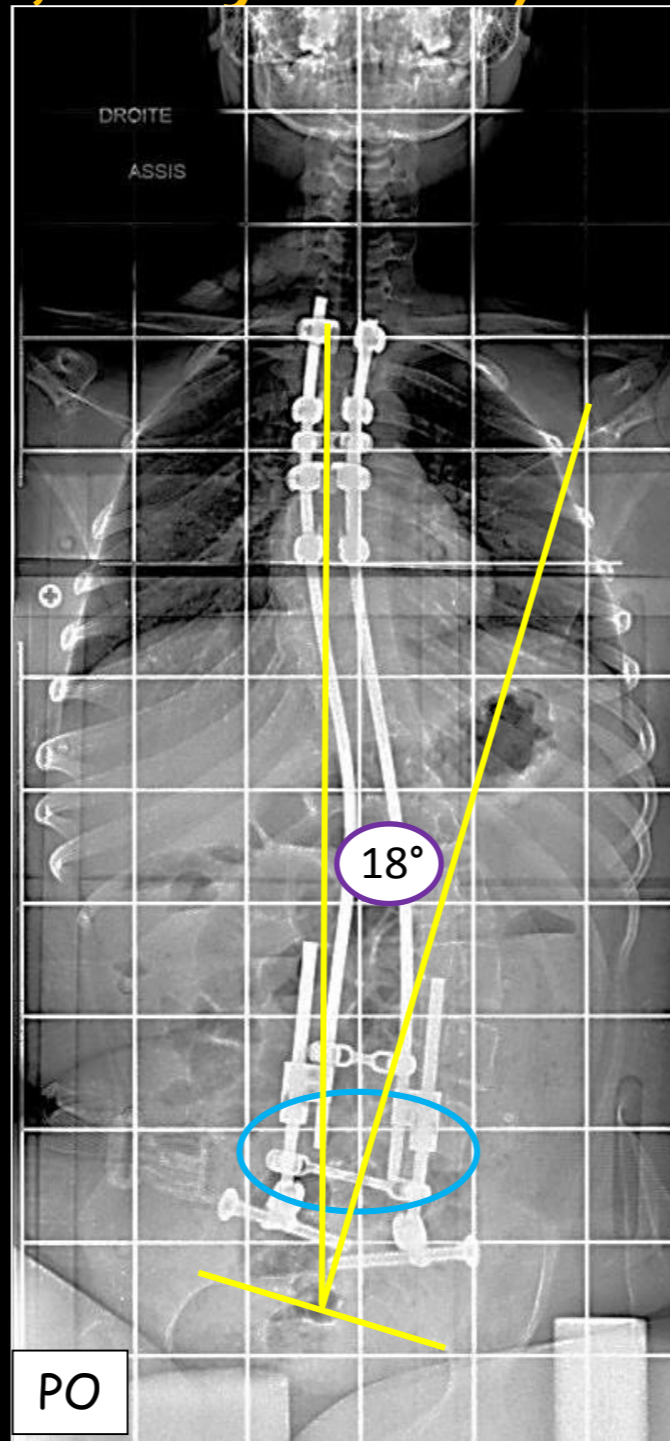
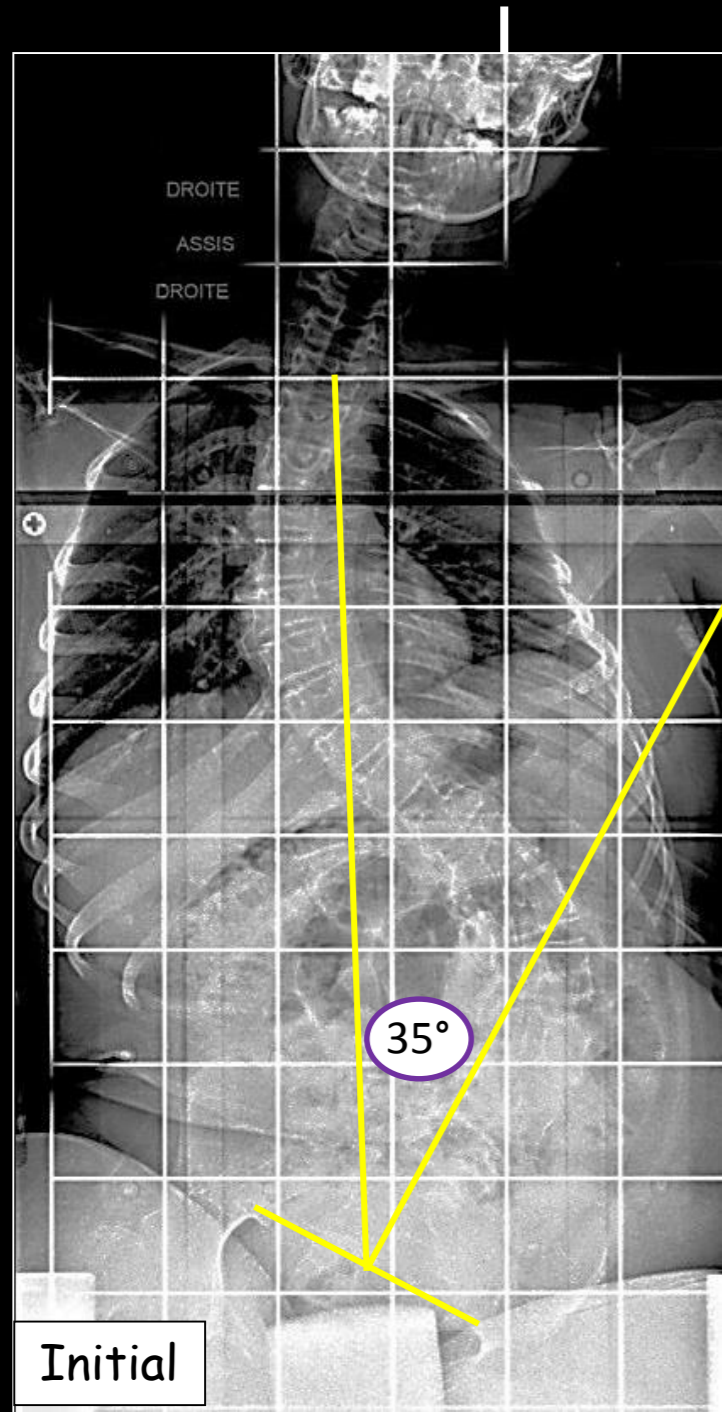


# Results

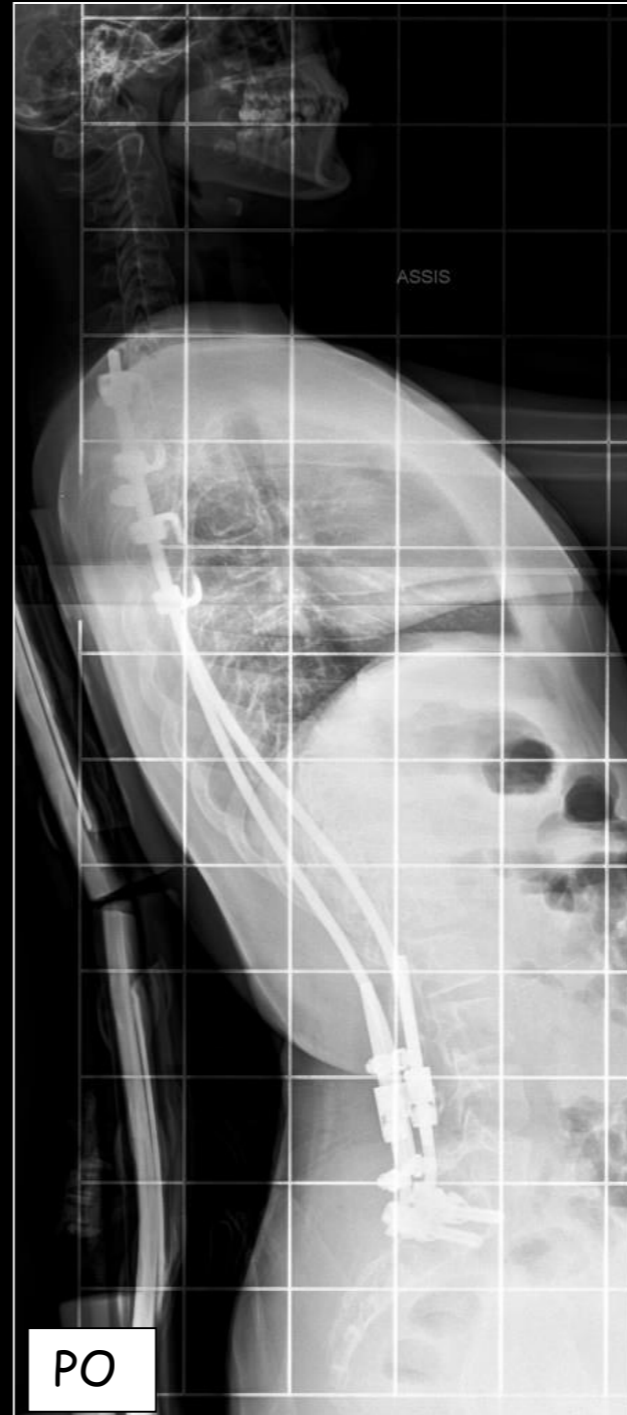
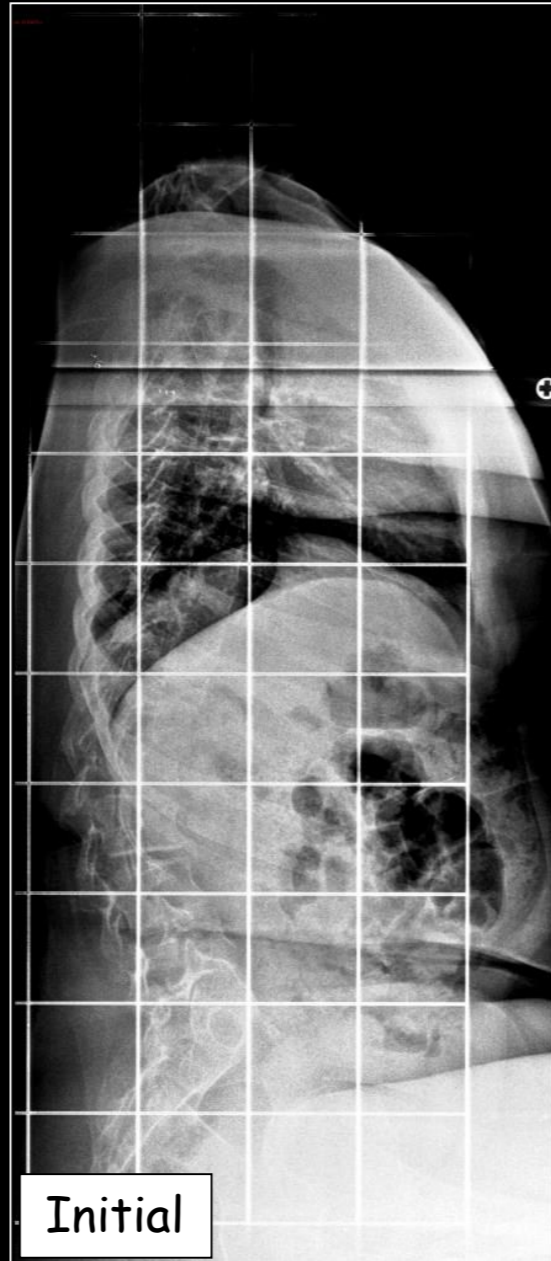
No expansion in 2 cases (conflict between crosslink and spinous process)



# Case 1 (SMA, 11years)



# Case 1



# Case 1



Initial



12m PO



24m PO

# Case 1



Initial

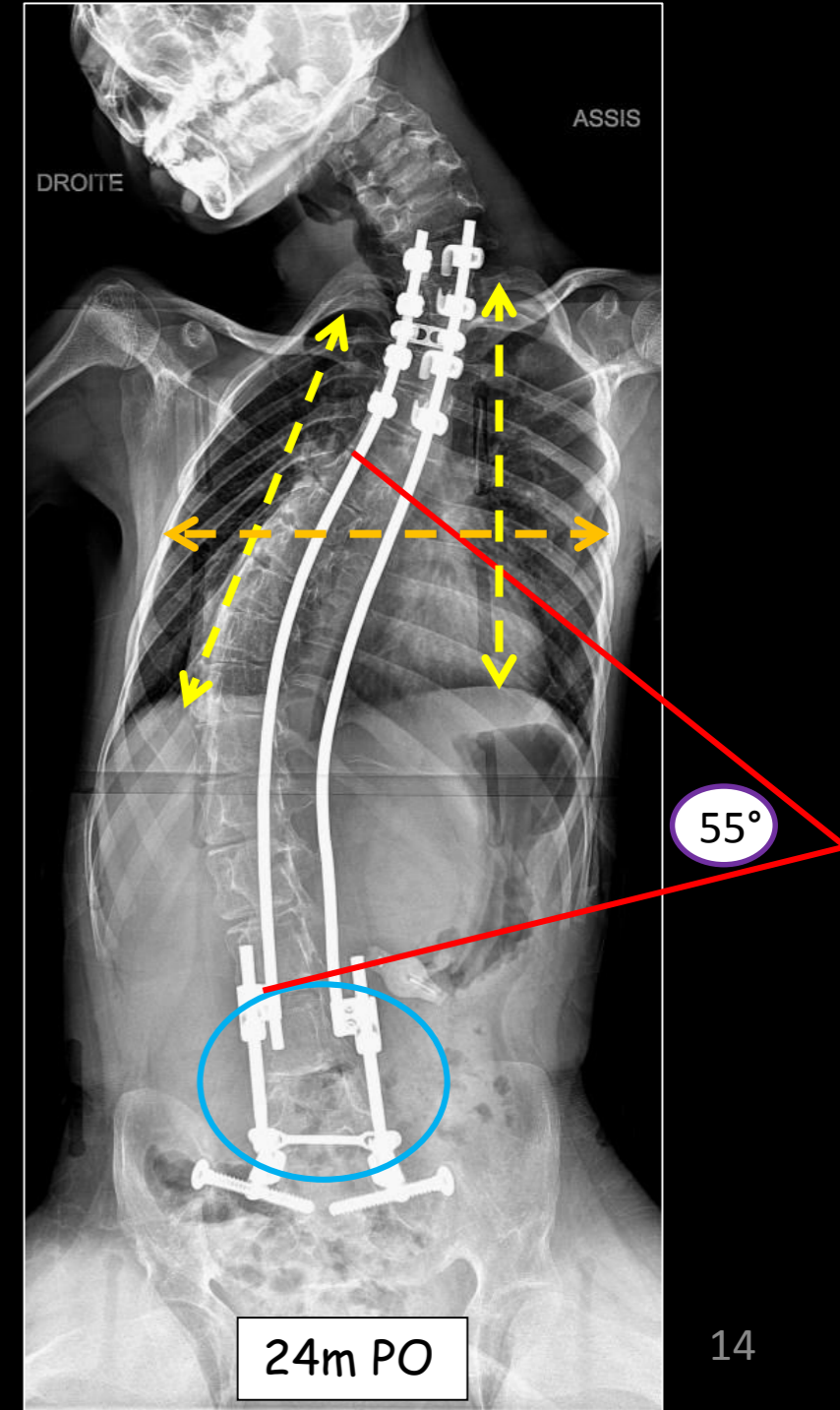
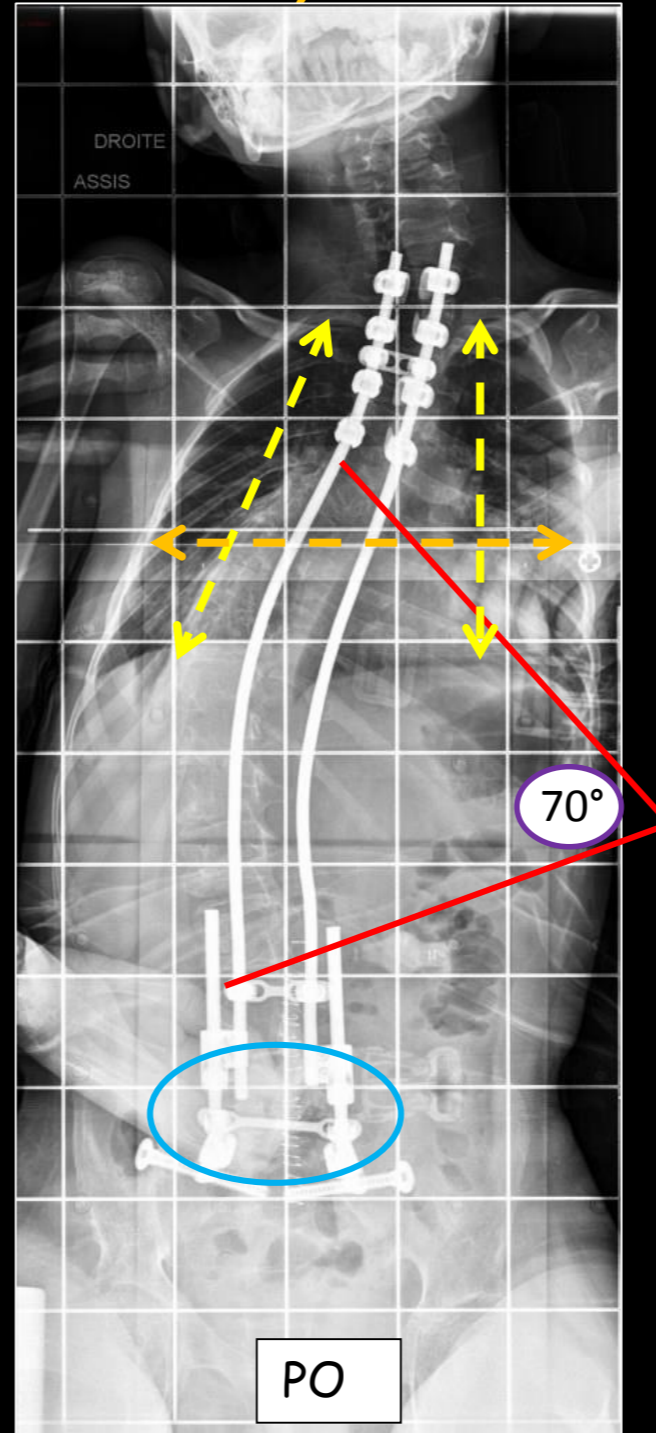
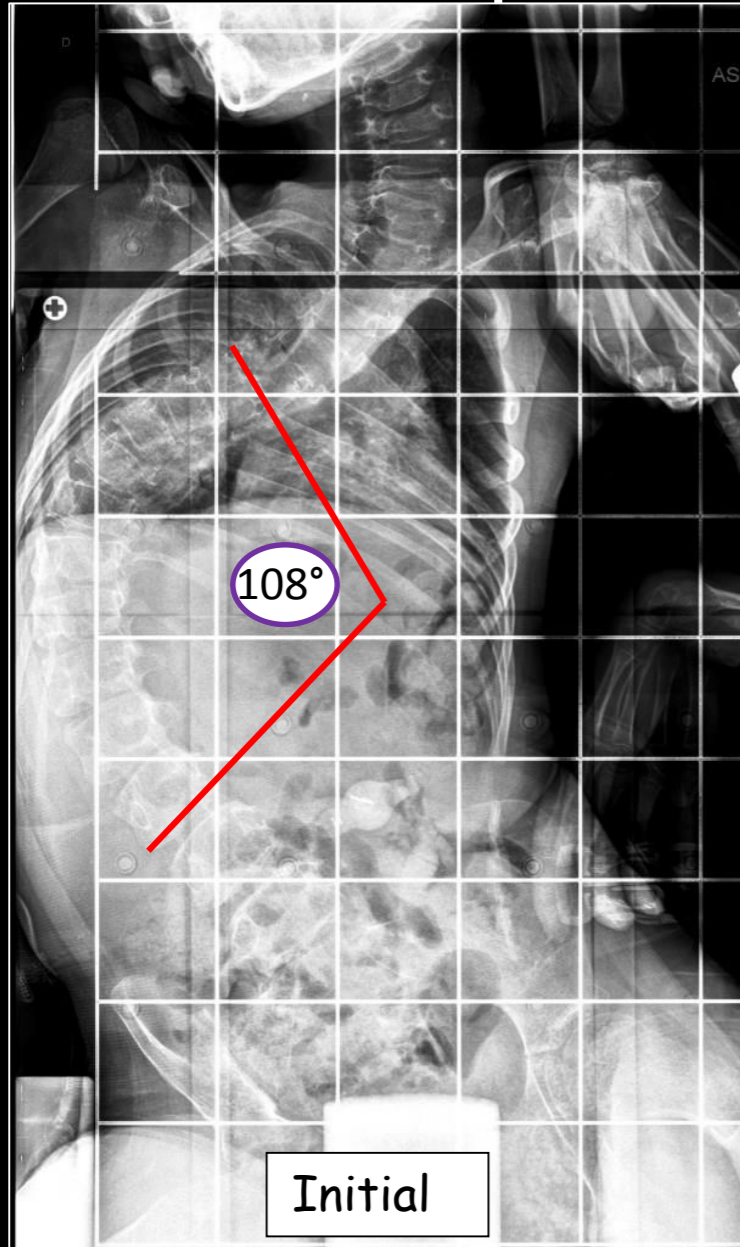


12m PO

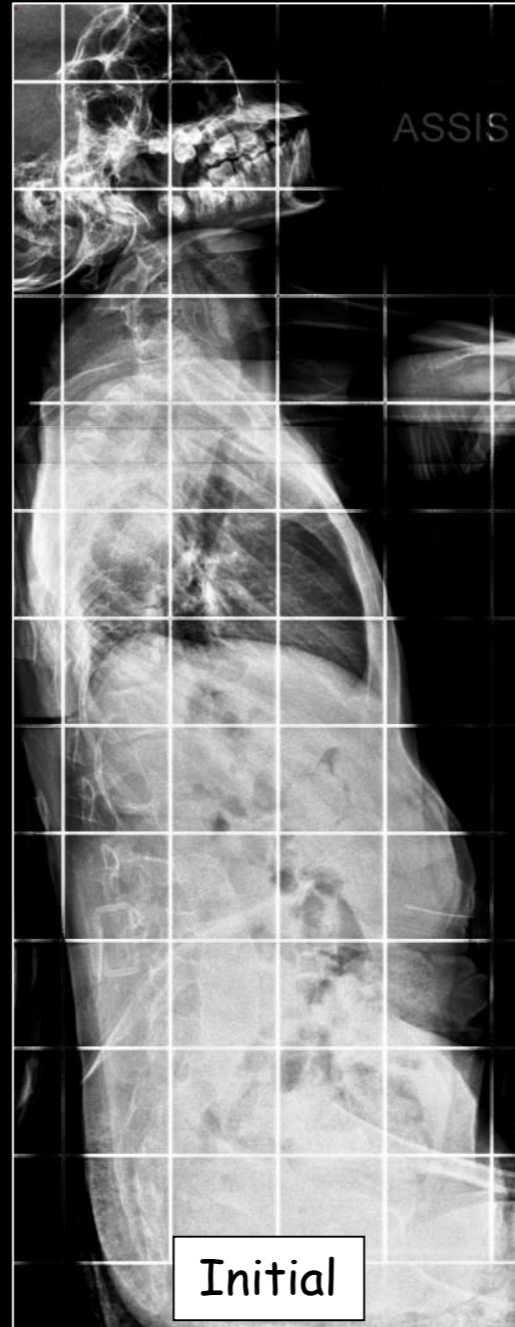


24m PO

# Case 2 (CP, 13ans)



# Case 2



# Case 2





# Case 2



Initial



24m PO



## Conclusion

- *Encouraging preliminary results*
  1. *Simple and reliable mechanical principle*
  2. *Bendable rod as desired*
  3. *Large reserve (80mm)*
  4. *Strong and durable device*
  5. *Rigorous surgical technique*
  6. *Spontaneous progressive lengthening*
  7. *Reduced cost*
- → *Real reduction of complications rate!*
- More follow up is nevertheless necessary

