A New Type of Torticollis ?
Complication of GRI ?

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ICEOS Utrecht 2016

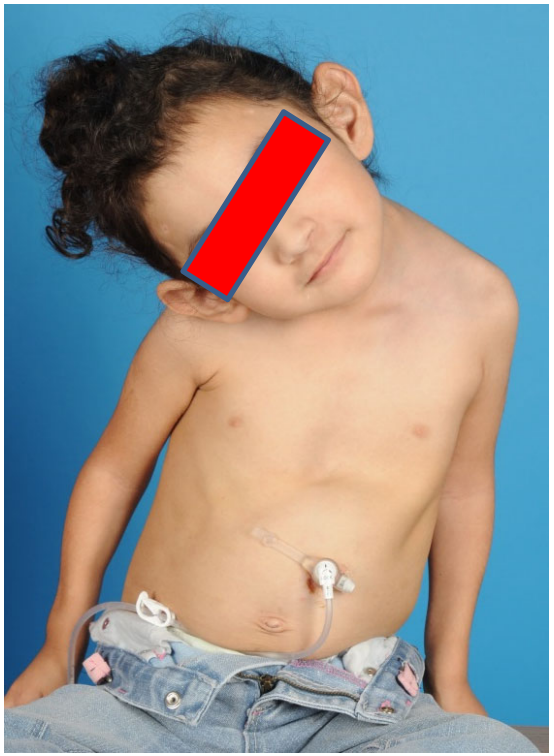
TEXAS SCOTTISH RITE HOSPITAL FOR CHILDREN

4 Cases – All RX by GRI ± HGT

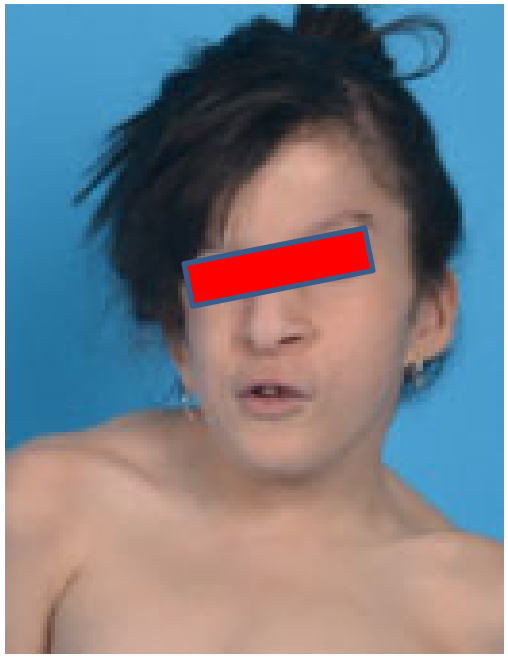
Preop

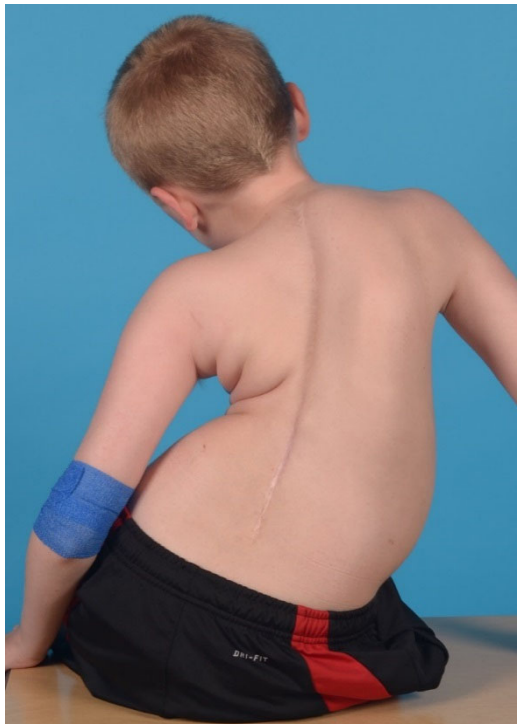
Postop

Presentation



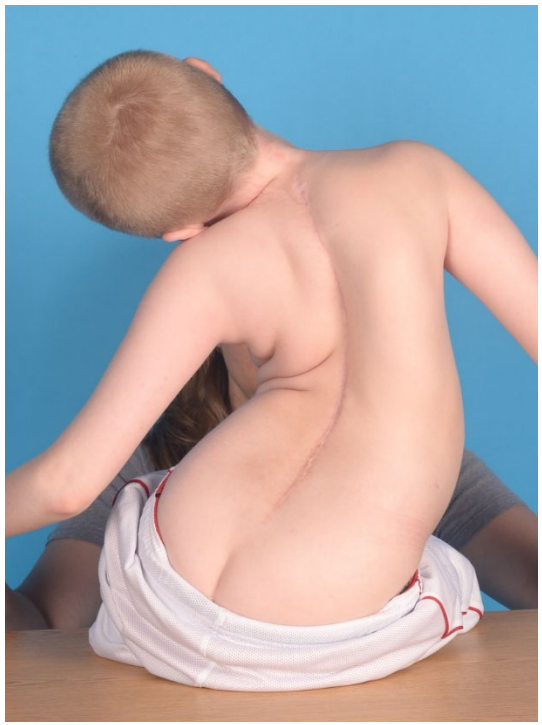
Postop





Preop

Postop



4 Cases – All RX by GRI ± HGT

Torticollis - Classification

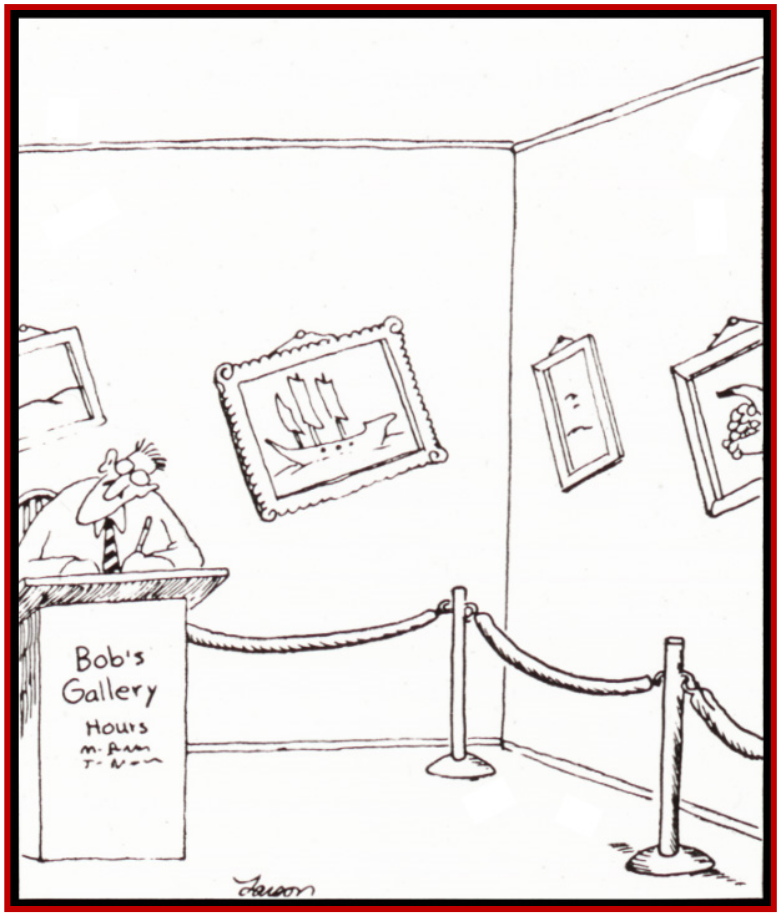
1. Congenital (w/o pain)

A. Congenital muscular
B. Vertebral anomalies (Klippel-Feil, etc.)
C. Ocular
D. Idiopathic (very rare)

2. Acquired (pain)

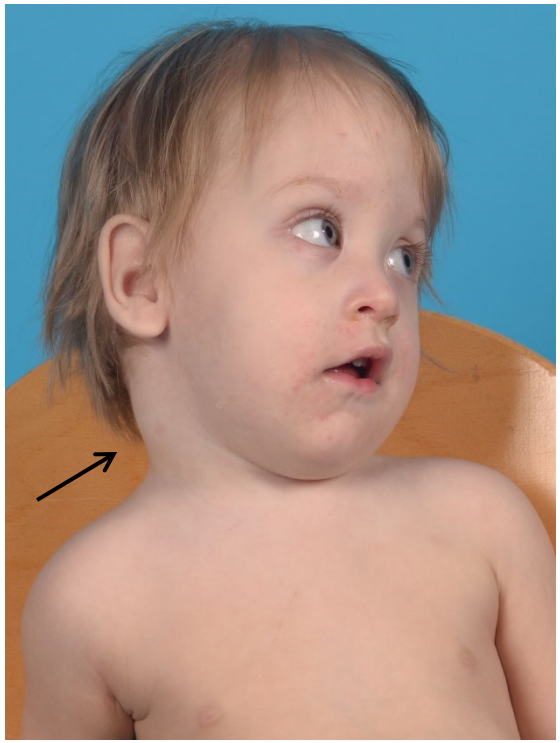
A. Cervical adenitis (Grisel's -> C1-2 AARD
B. Instability (trauma, developmental)
C. Inflammatory (Discitis/osteo/osteoid osteoma
D. Neoplasia (post fossa, cervical)

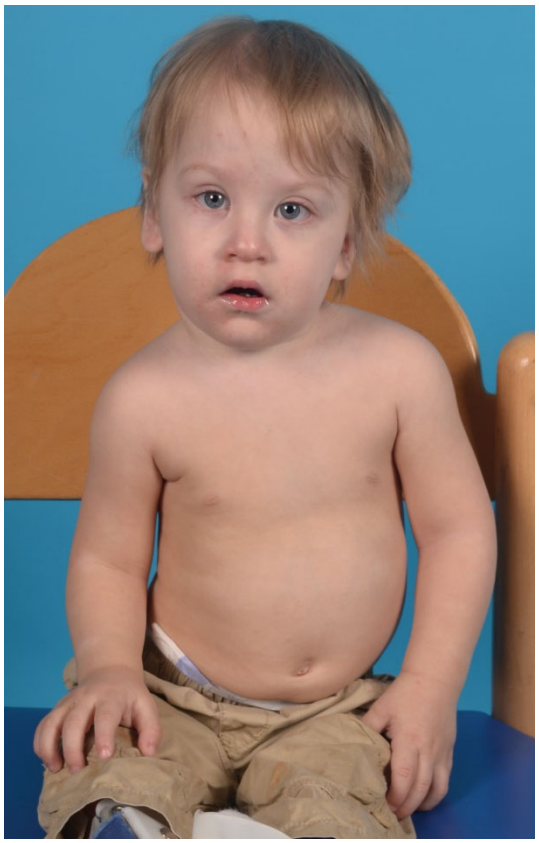
E. Associated w/ growth-friendly RX

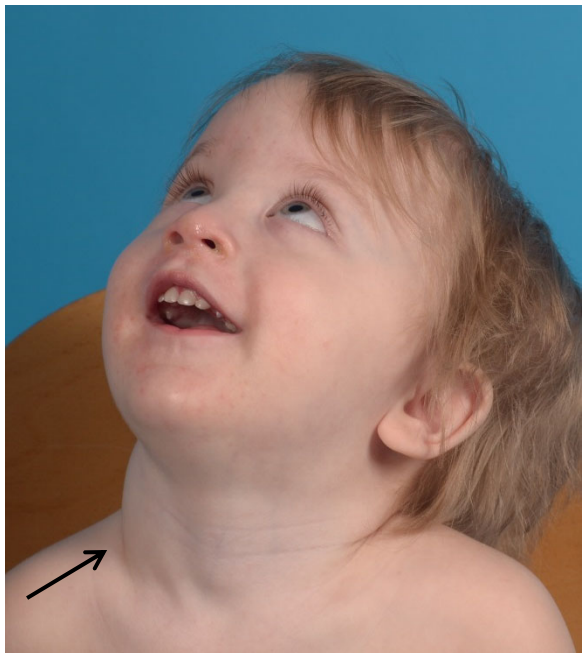


#202195 – 15 m

Hypotonia, dev delay, crawls using R leg only

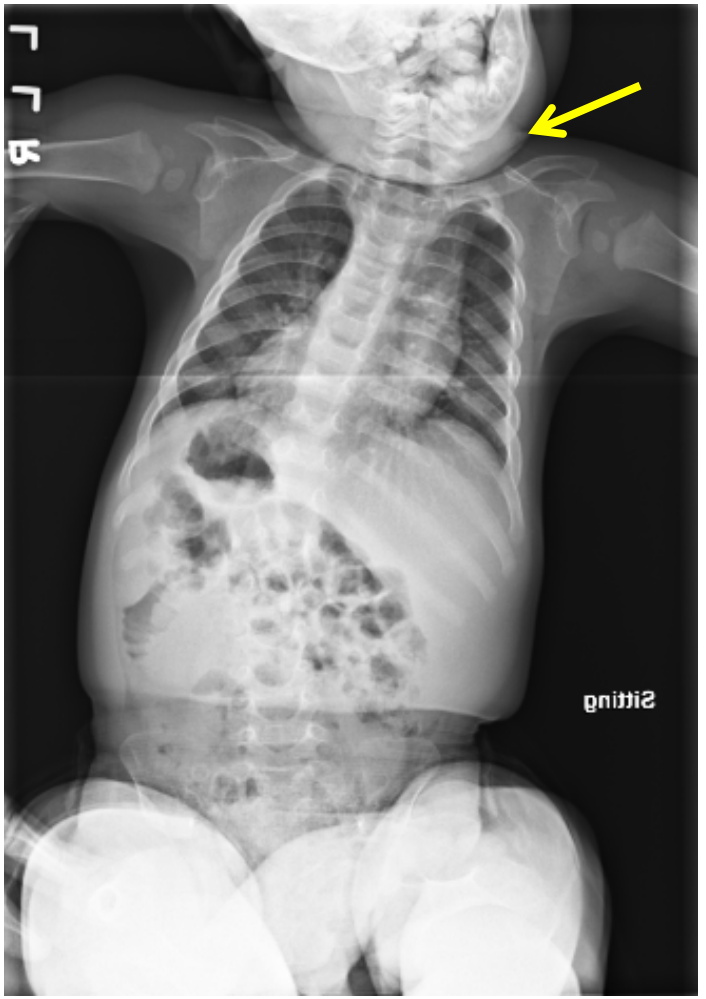






PX – 3 x 5 cm mass R neck = ?lymph node

Head tilt to L, cannot rotate to R, Lt. SCM nl



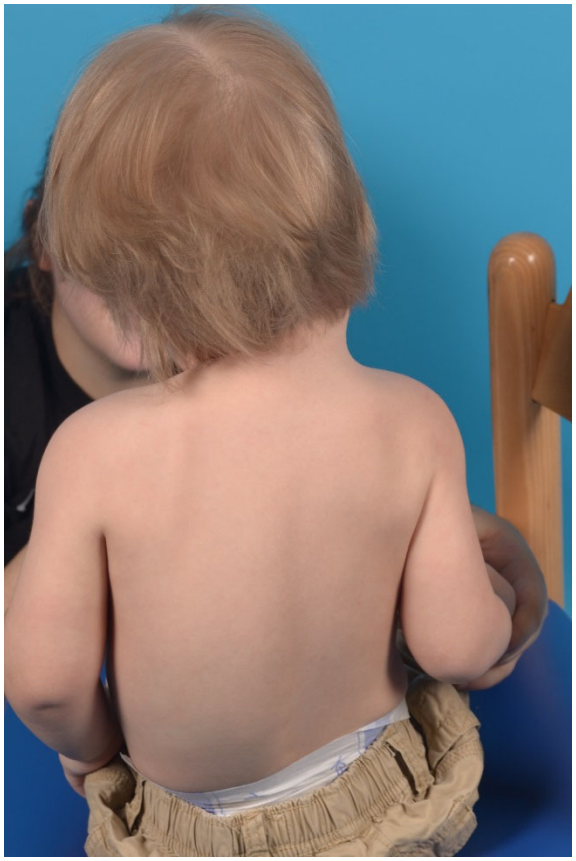
Dx – platyspondyly, odontoid hypoplasia

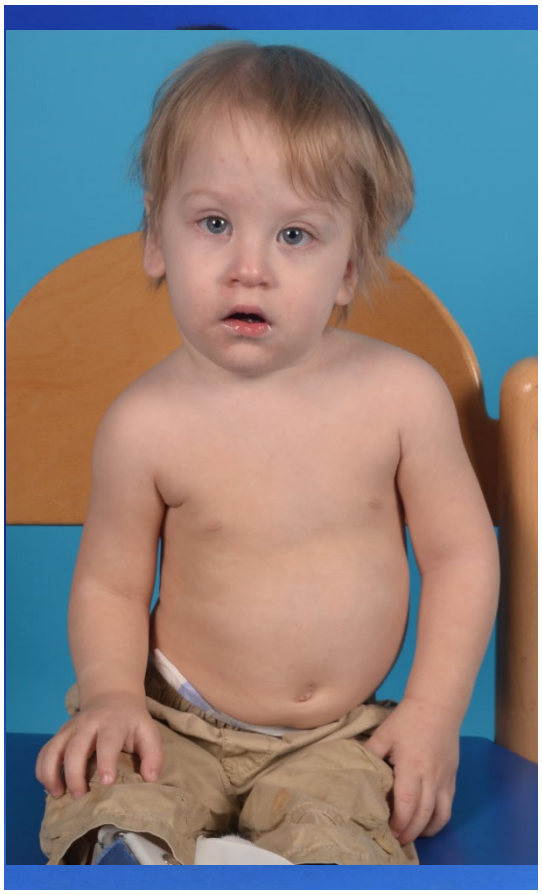
MRI = nl. Neuro dx -> ??

Rx -> excision (delayed), passive ROM “restored”

202195 – 5 yr later
Time to RX Scoliosis

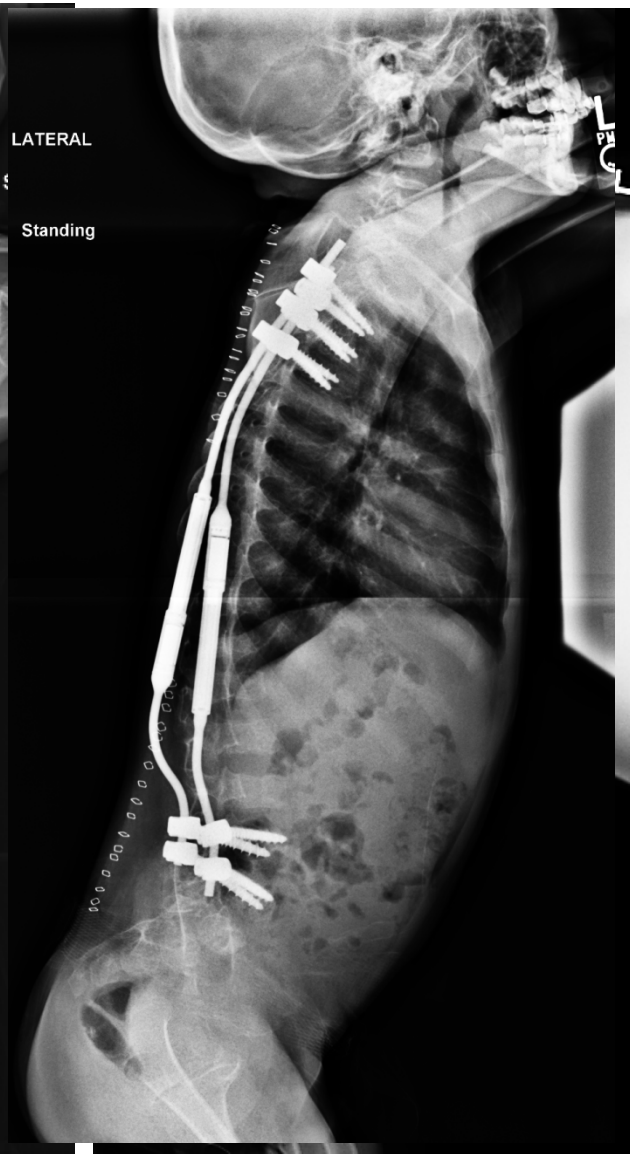
01/11

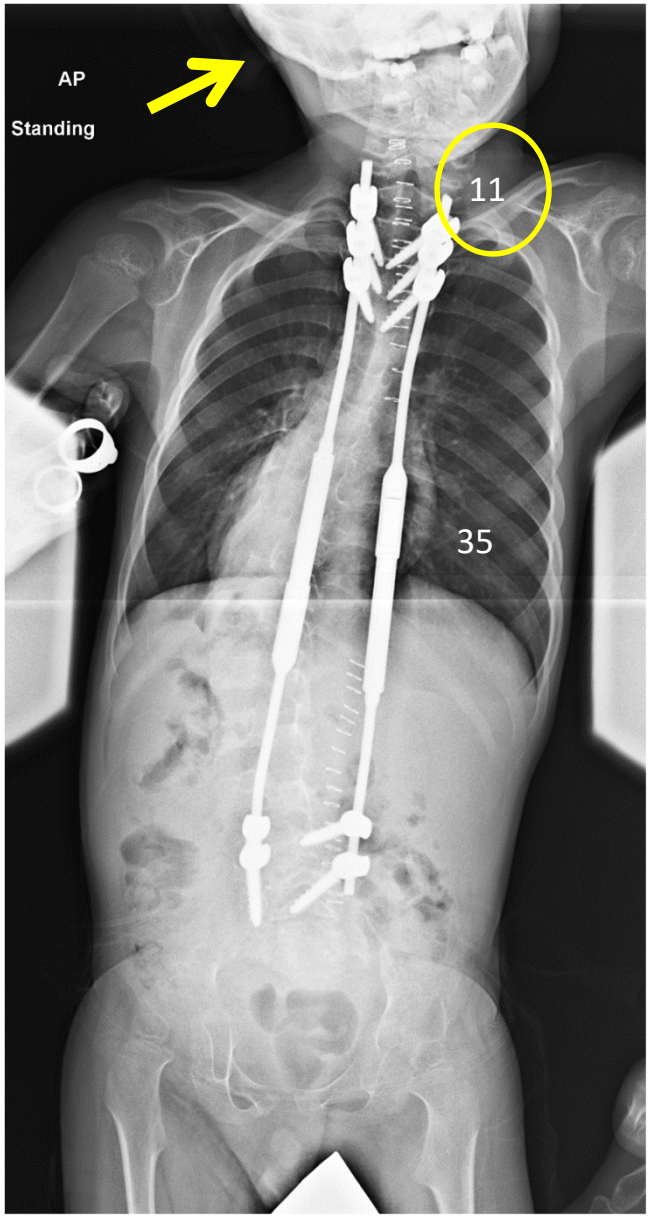




4/16

Ambulates w/AFOs, walker, still hypotonic, no neuro dx

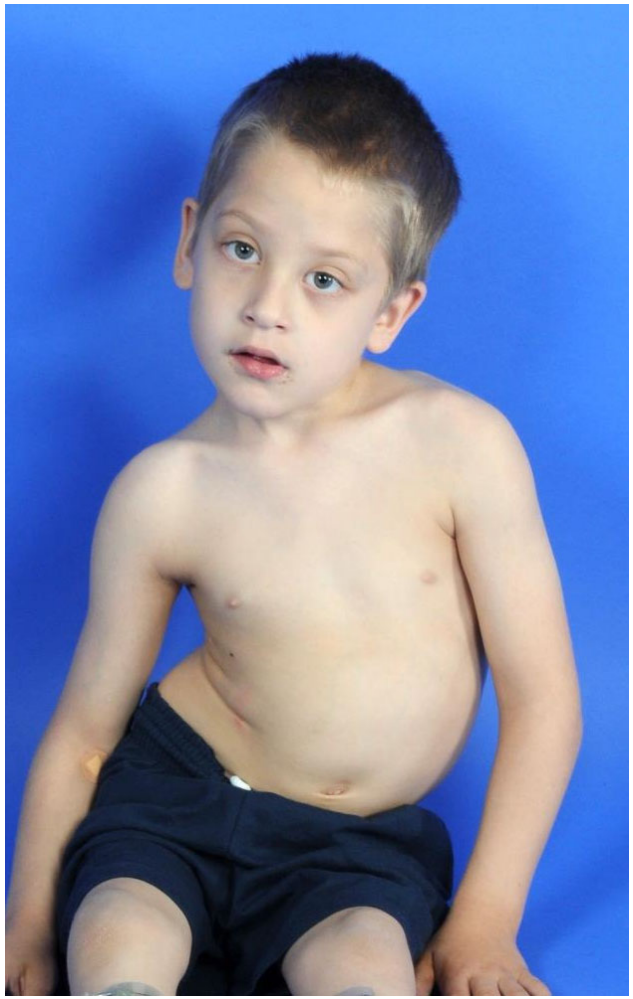




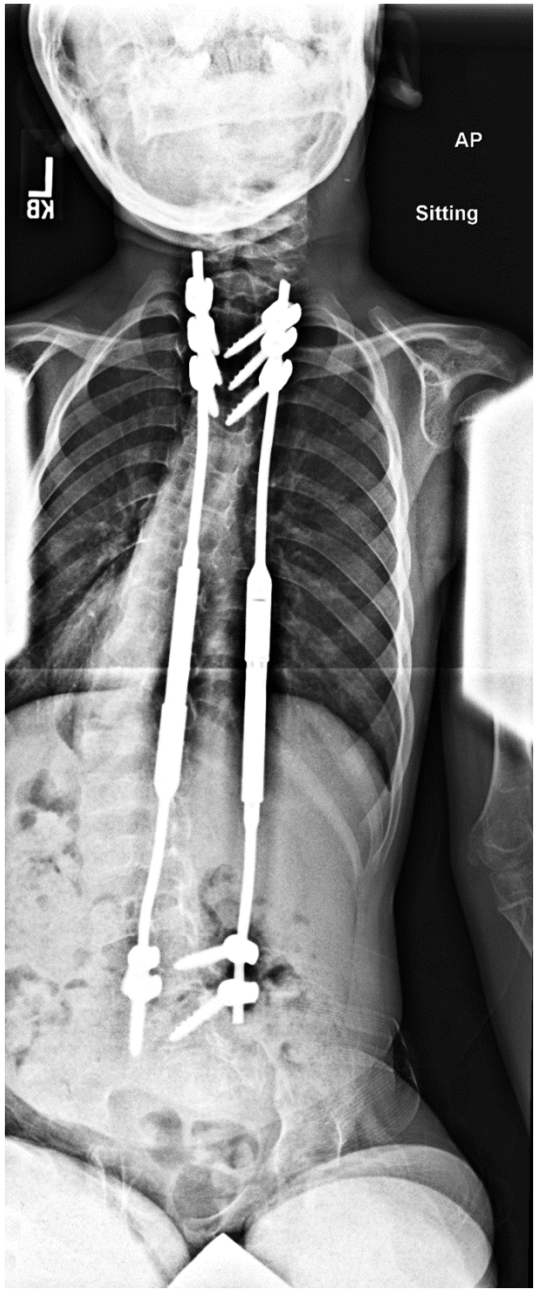
1 mo p.o.

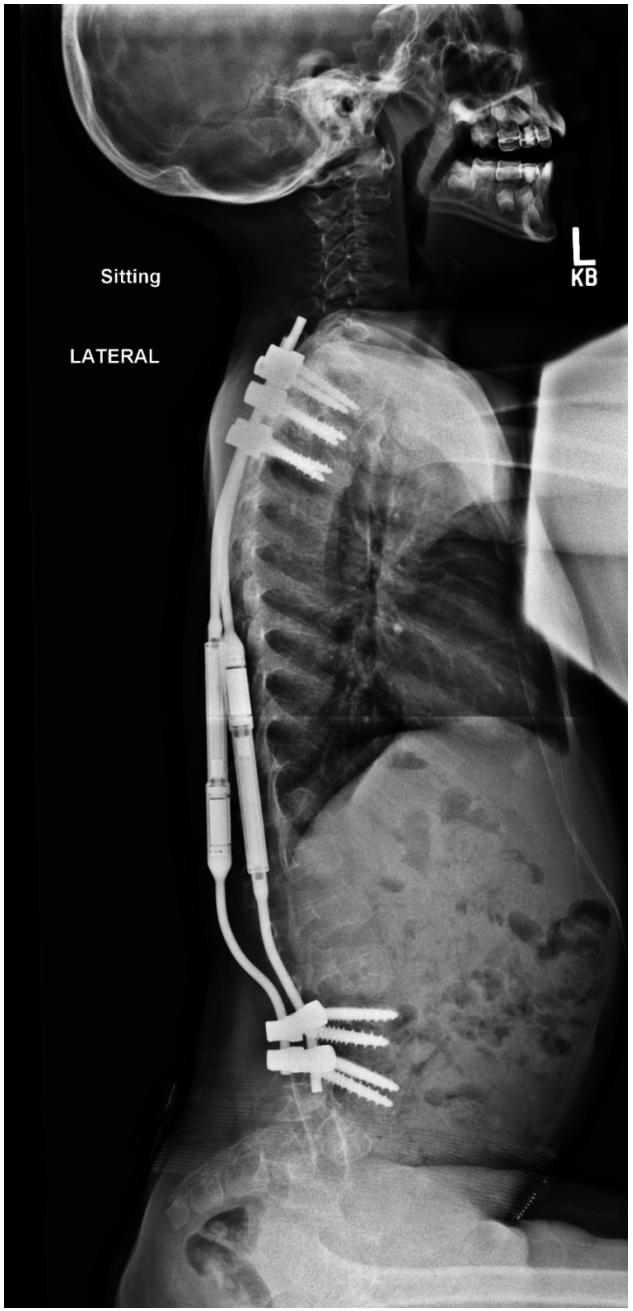
Neck Magec – Missing C spine curve structural

T1 tilt ↓ to 11°

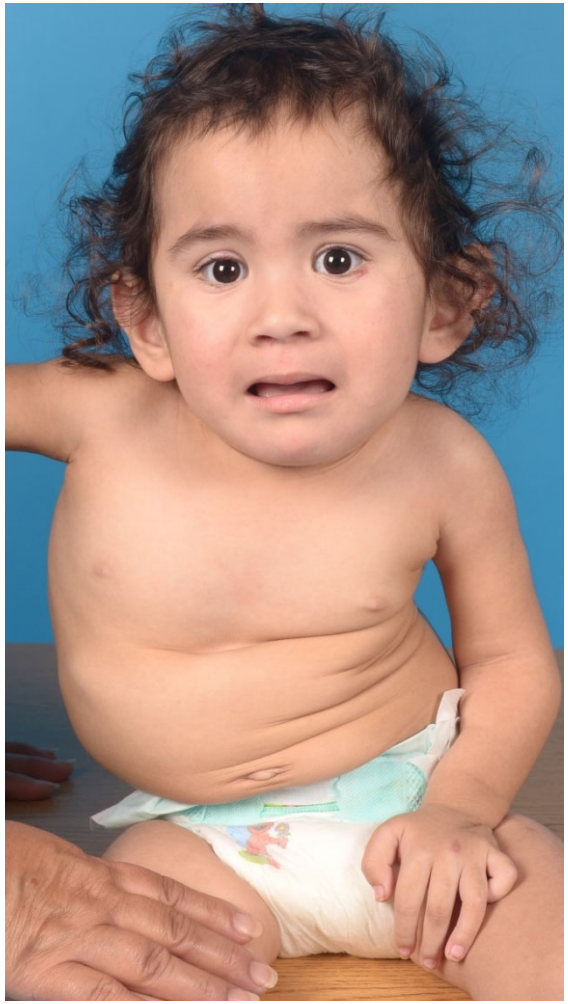


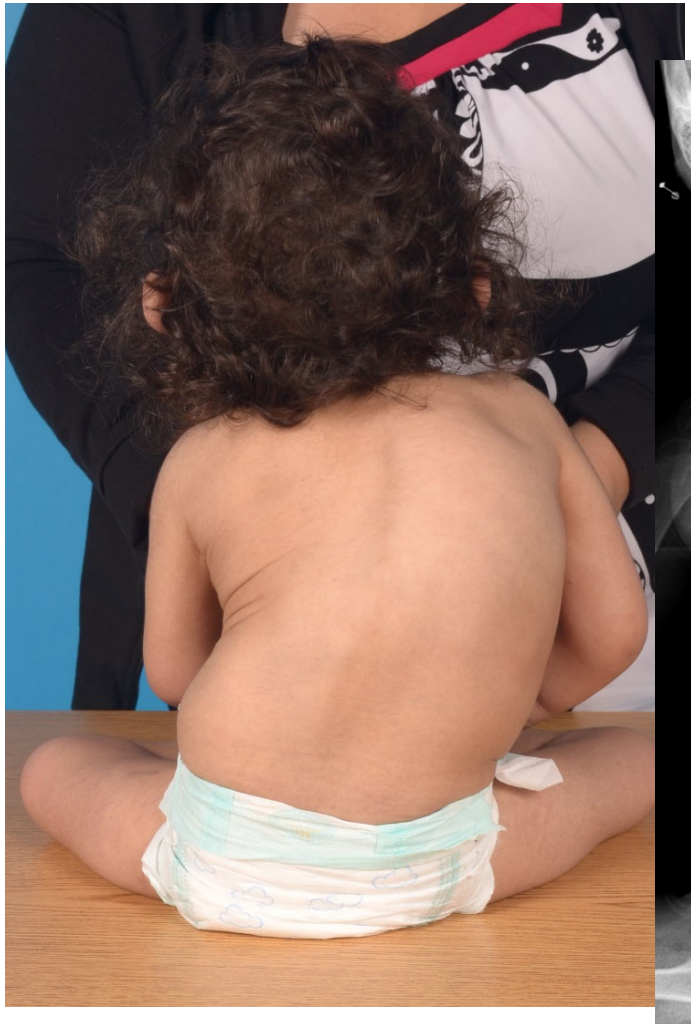
6 mo p.o.





#2 214026 1+10 Dx: cong myopathy





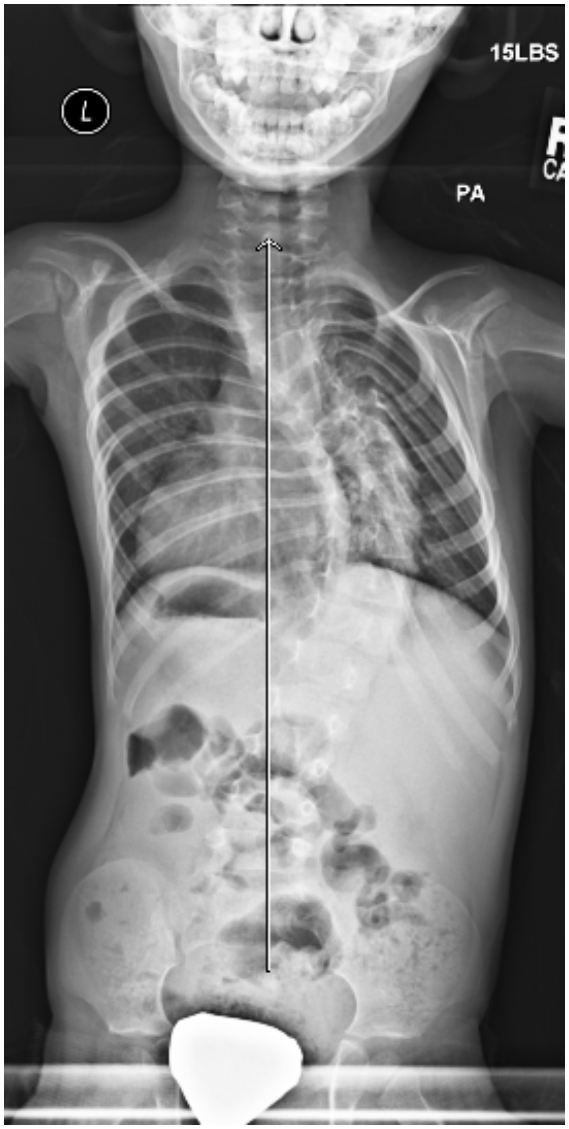
Hyperlax

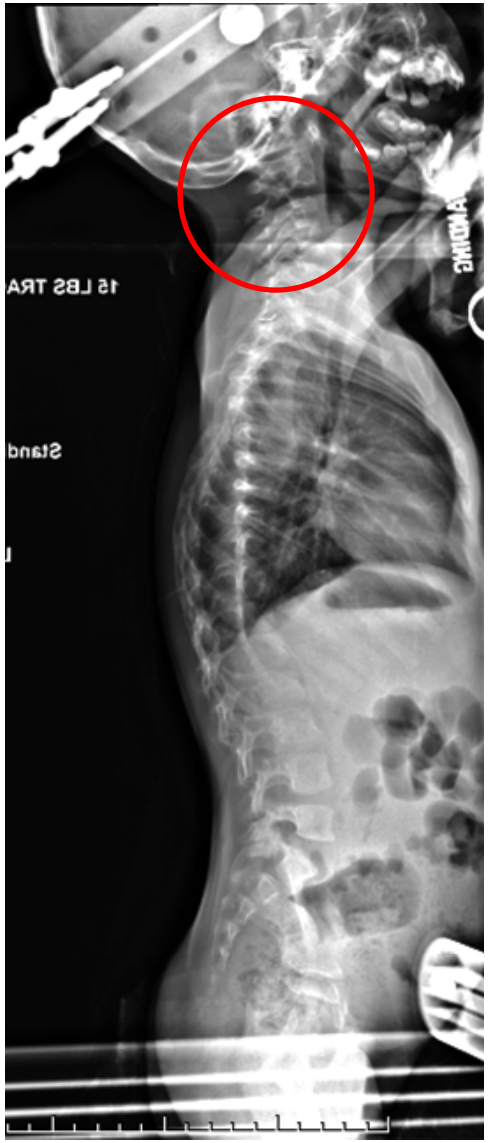
Tachypneic –> I&O ICU

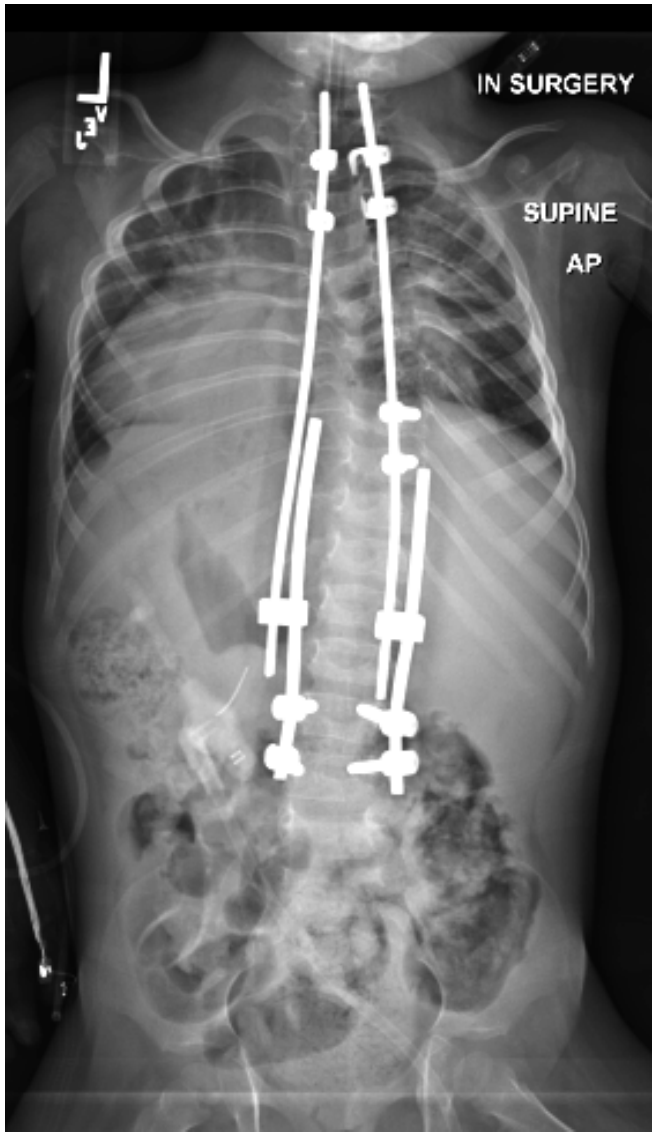
R head tilt ?

Traditional TSRH rx

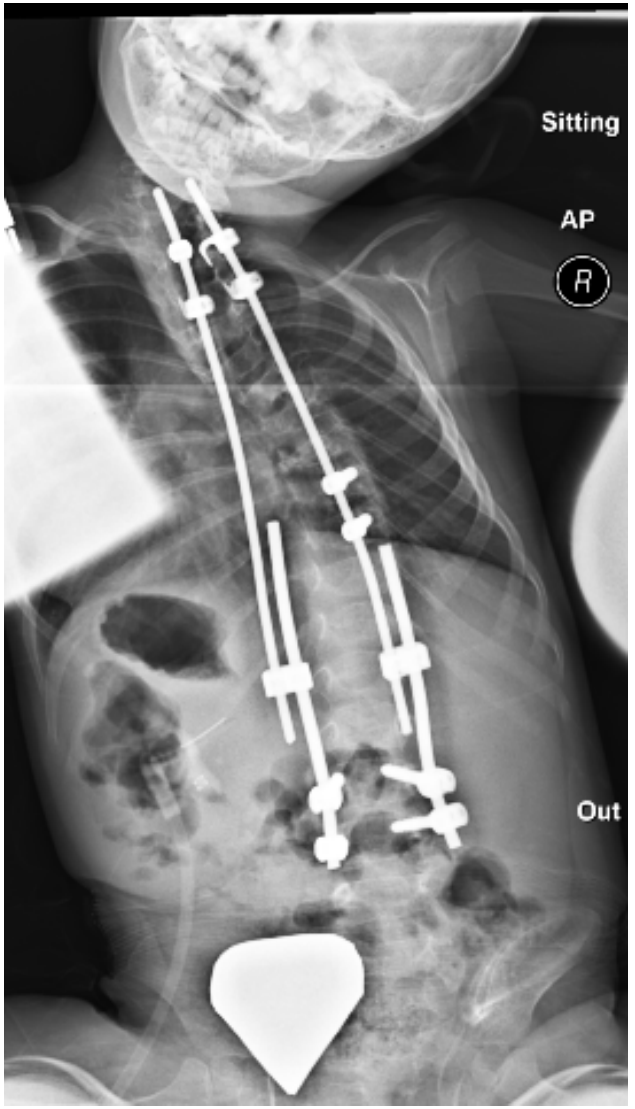
In traction – torticollis and T1 OCTO corrected







Early postop loss of head control – R head tilt exacerbated



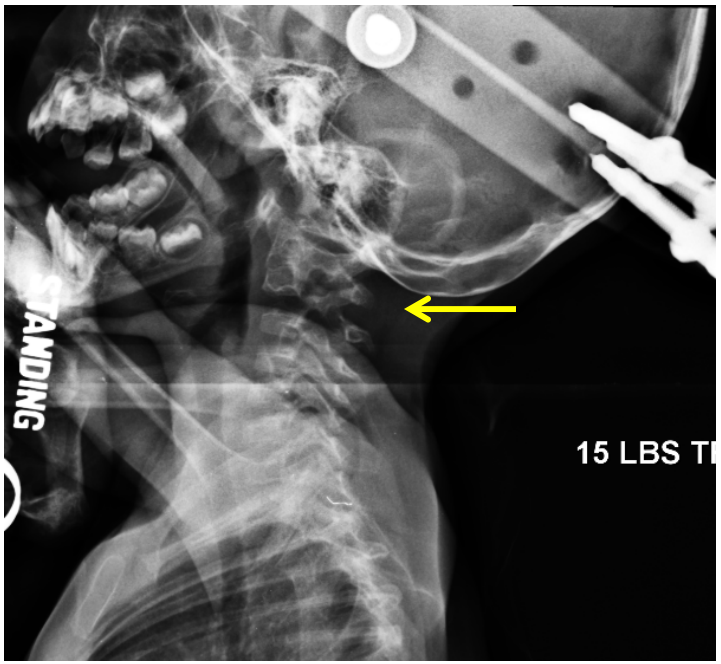
Initial dx : weakness/atrophy from traction in patient w/ myopathy
Plan : observe, brace

EMG -> <u>Left</u> SCM denervated 11th CN palsy, ? 2/2 stretch

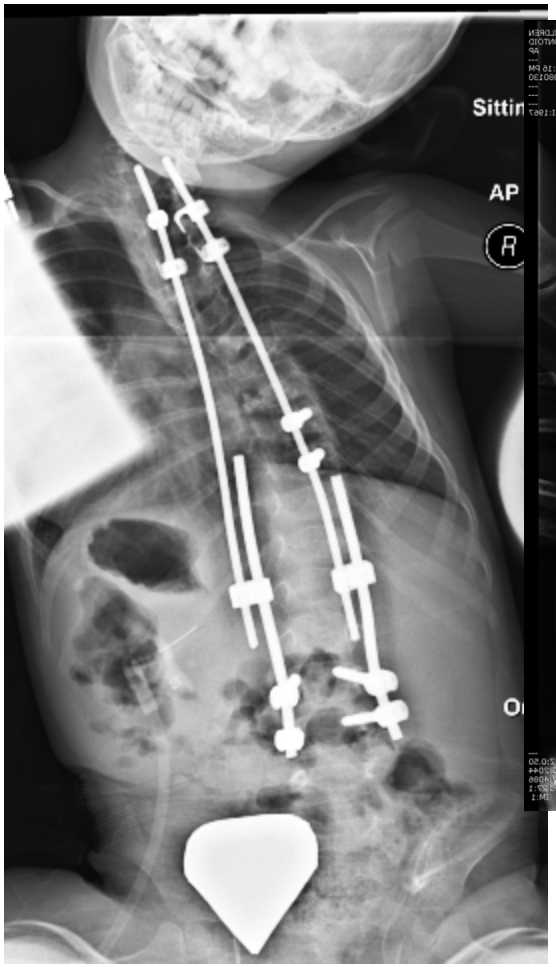
RX: observation, brace

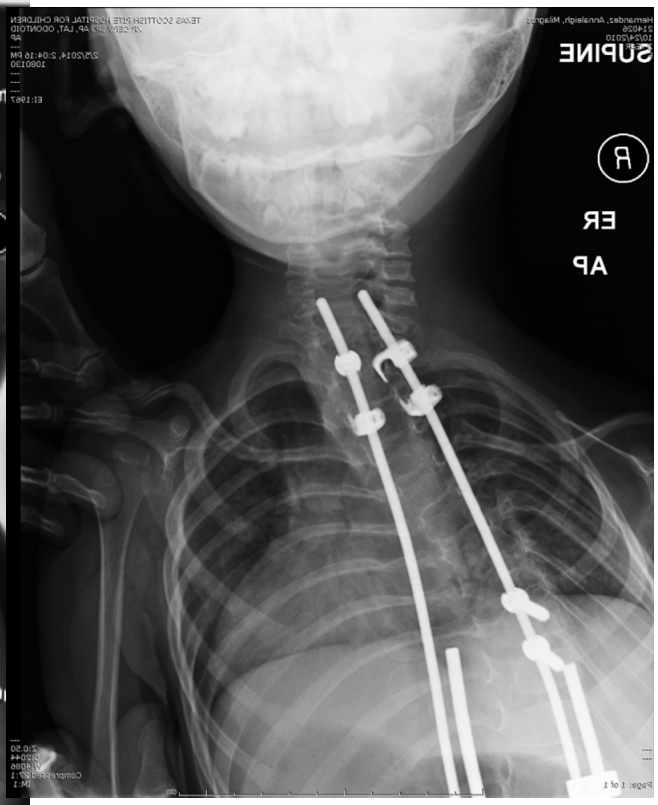
Resolution > 1 yr

In retrospect…..



Myopathic In traction

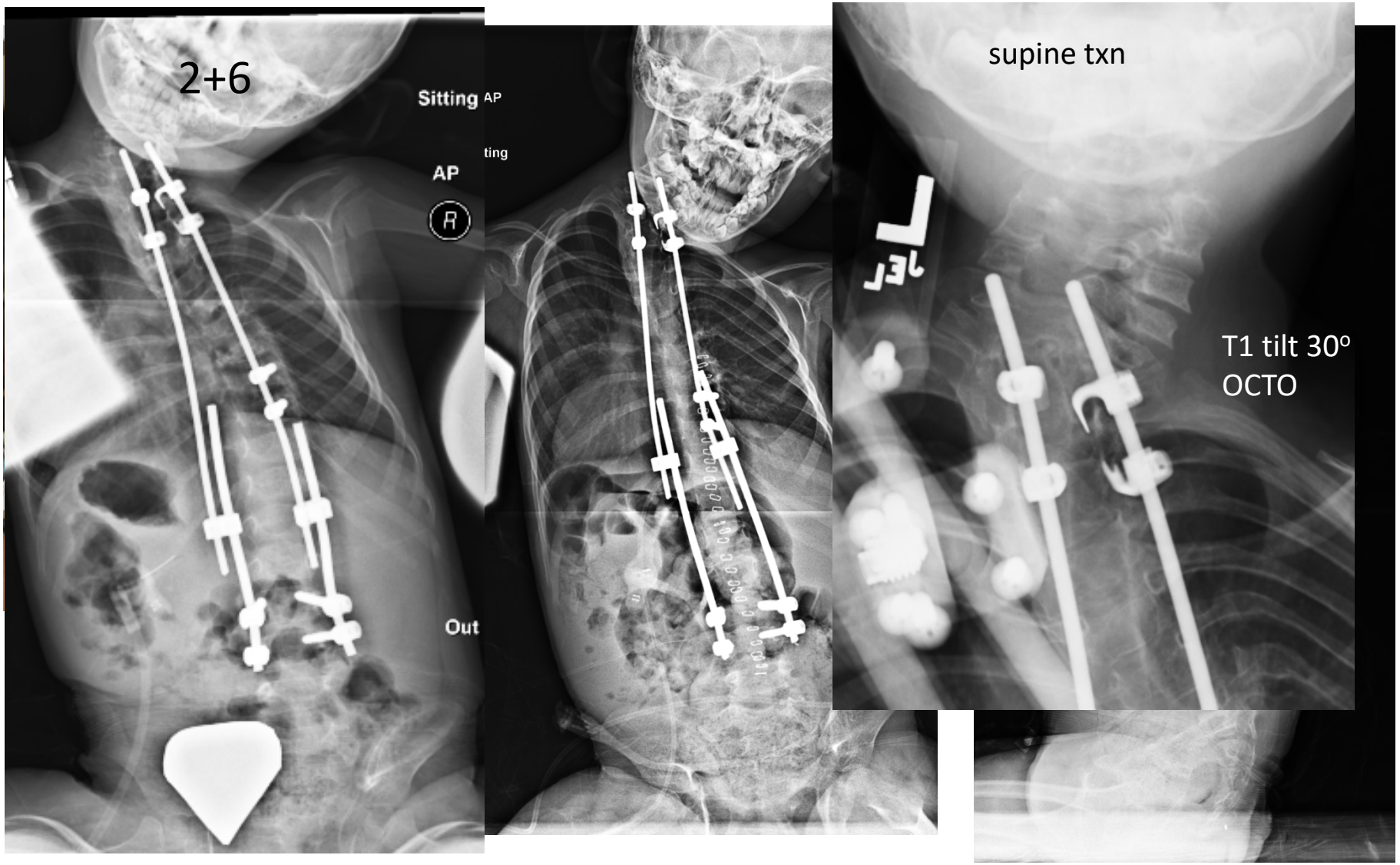




Passive correction – painful, stiff

CT – no rotatory subluxation

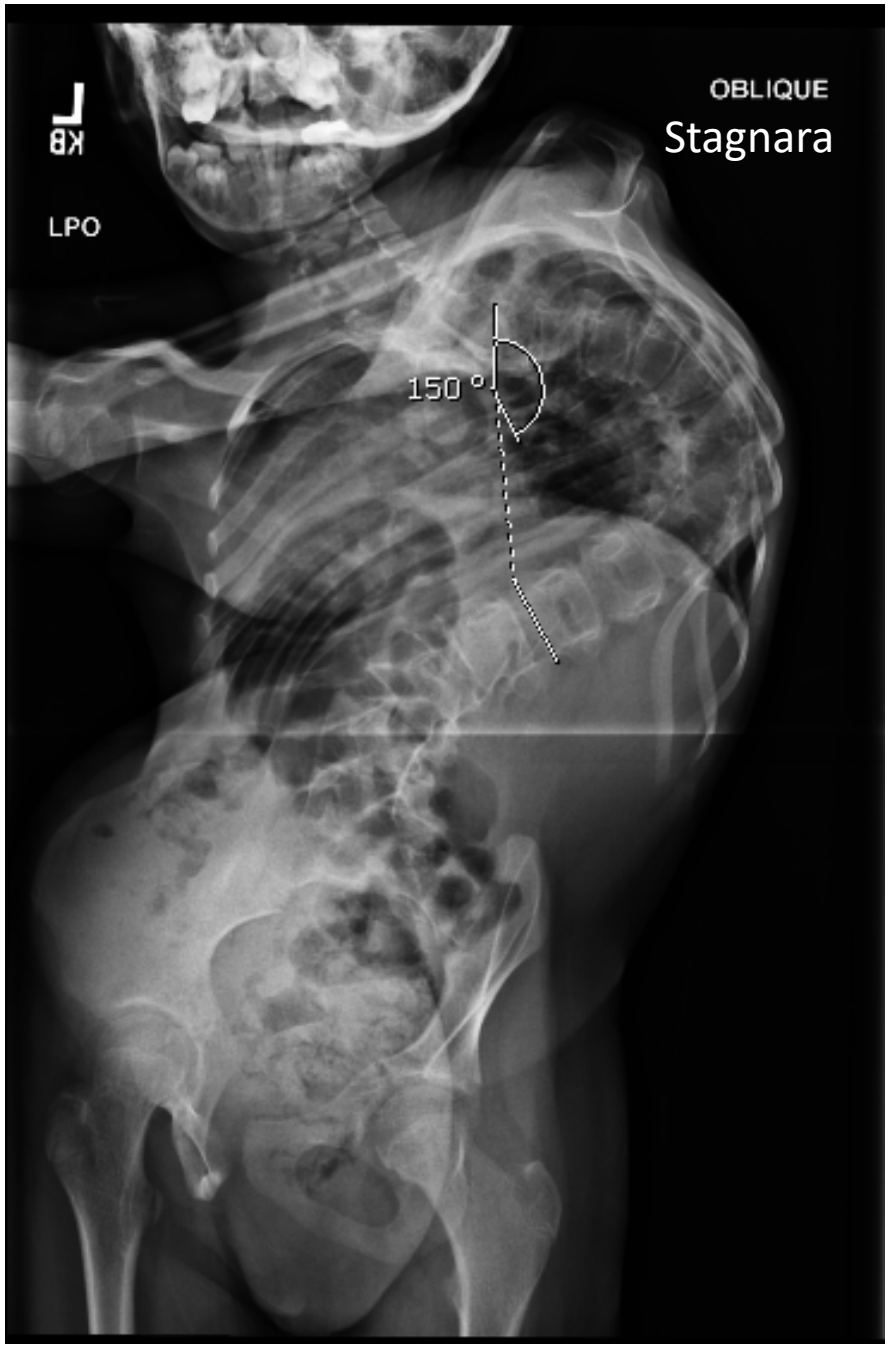
Most recent age 5+3, lengthening X 3

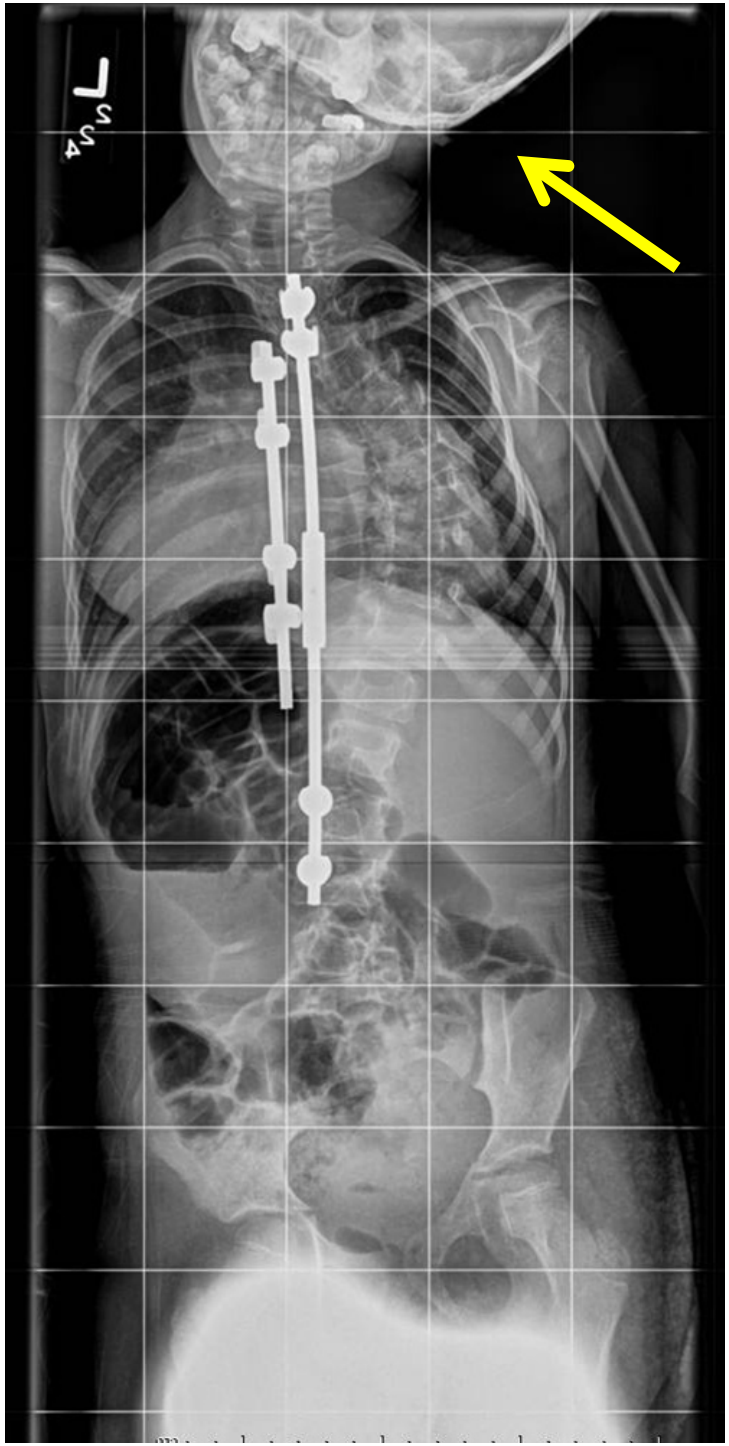


#3 N. D.

- 9+11 year old female
- developmental delay
- Severe kyphoscoliosis
- Functions around the level of a 5 year old
- Dysmorphic facies (R face hypoplasia)
- Symmetric reflexes
- Normal gait

MRI – No abnormalities





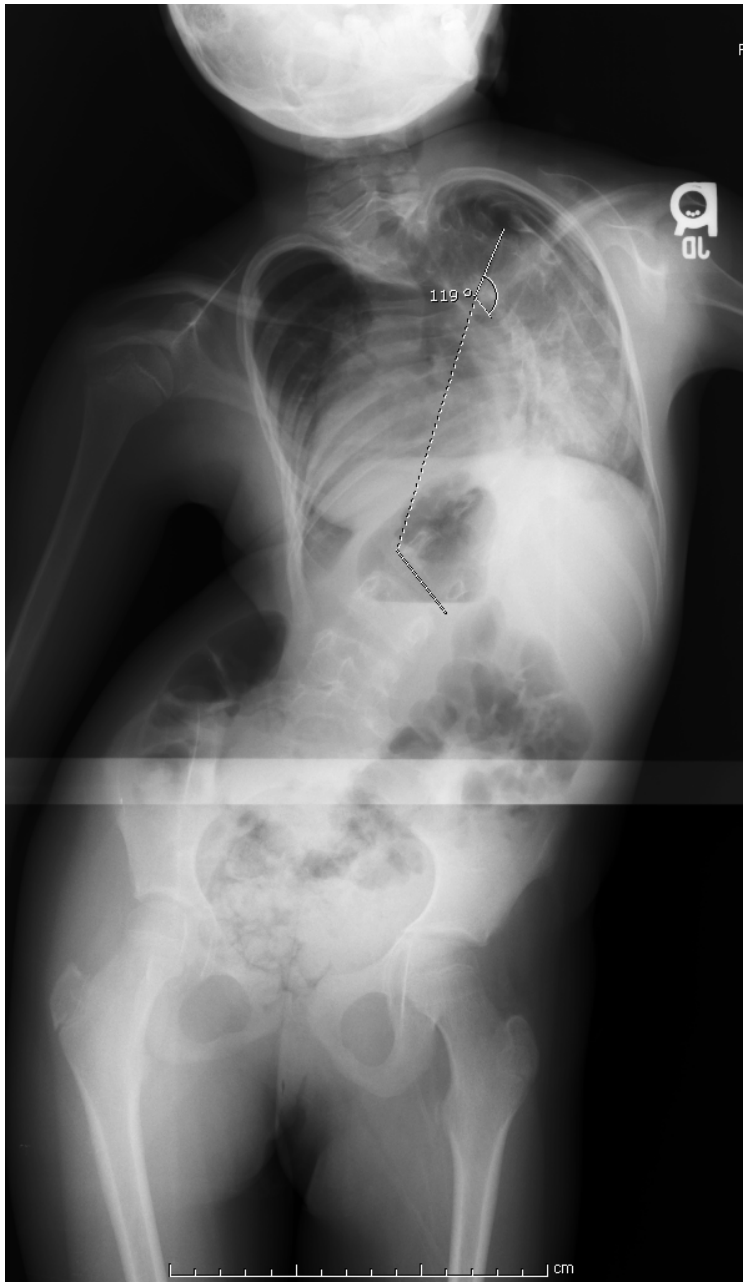
- Prior to referral…..
  Implants at age 8 (2 years ago)
  growing rods
- Early loss of fixation
- Wound infection
- Implants removed

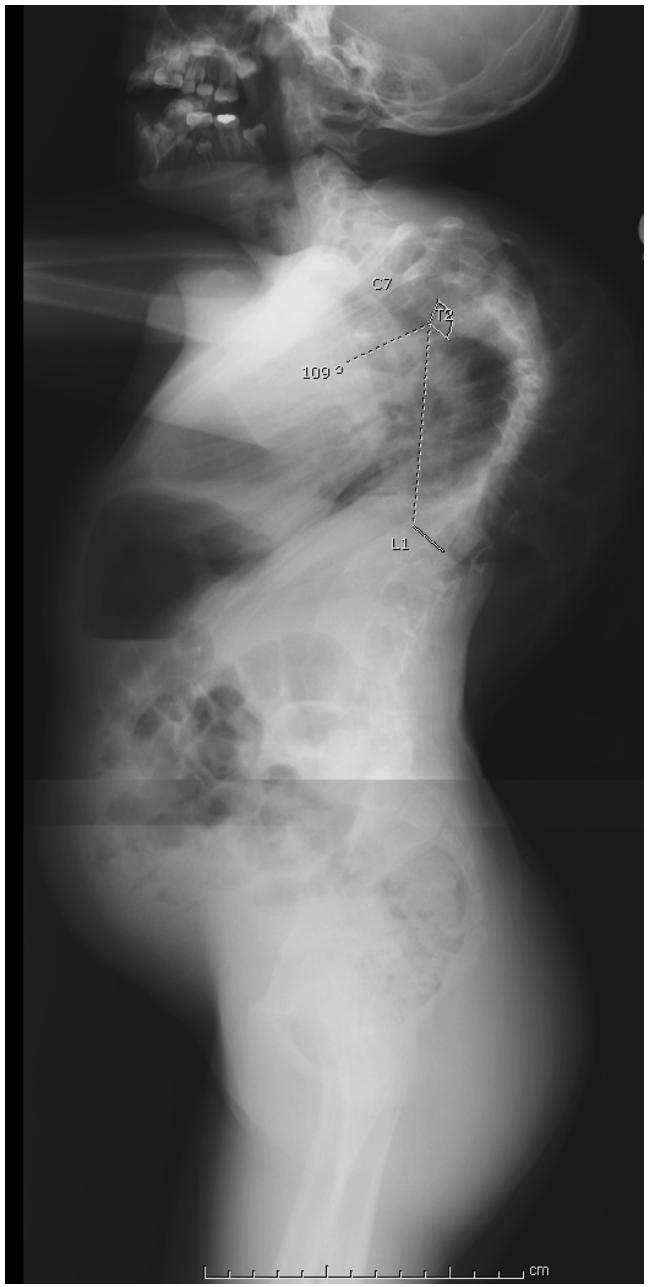
Time passes……

N. D.

9+6 F

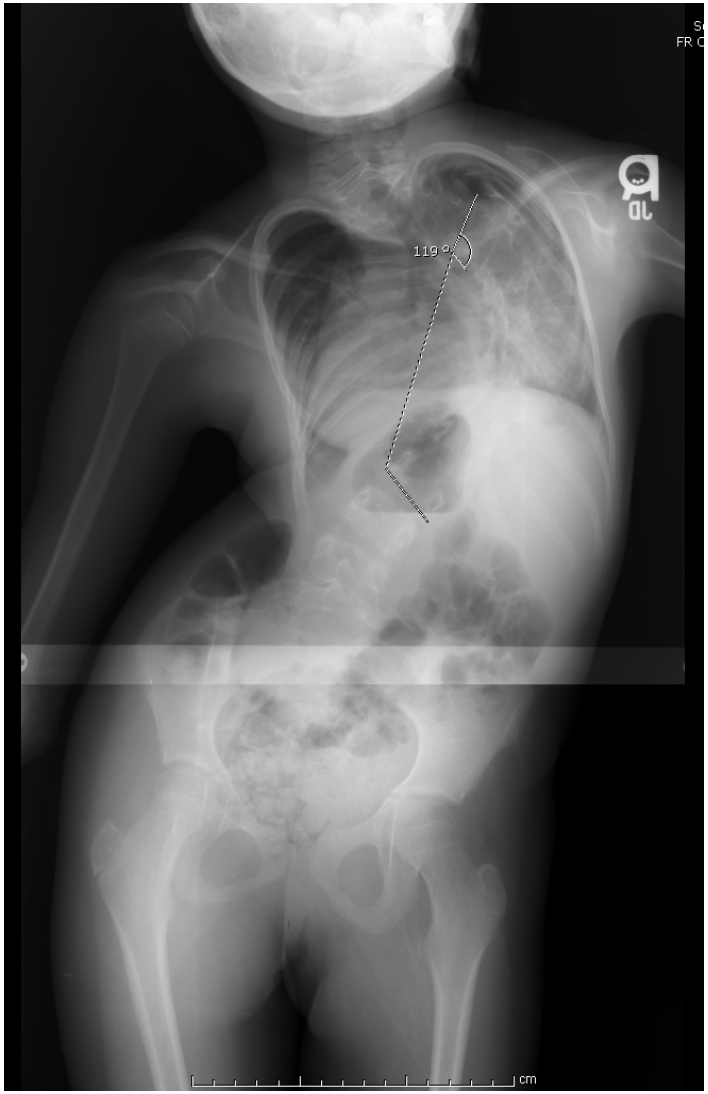
Films at arrival to TSRH



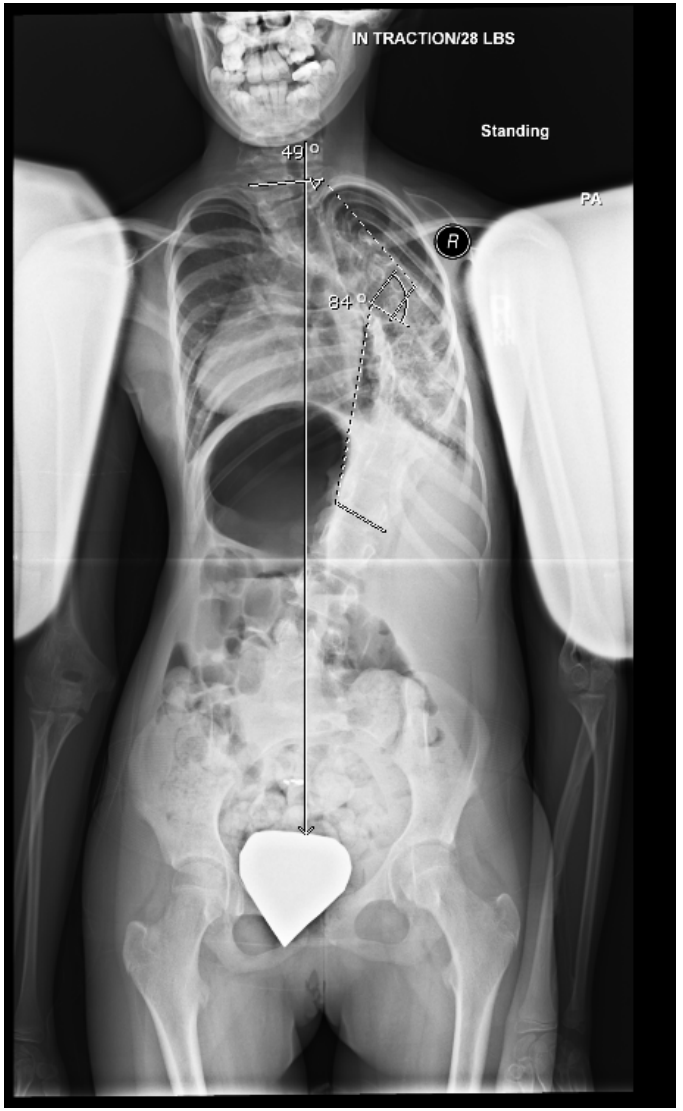


Head tilt to R ?

Admission

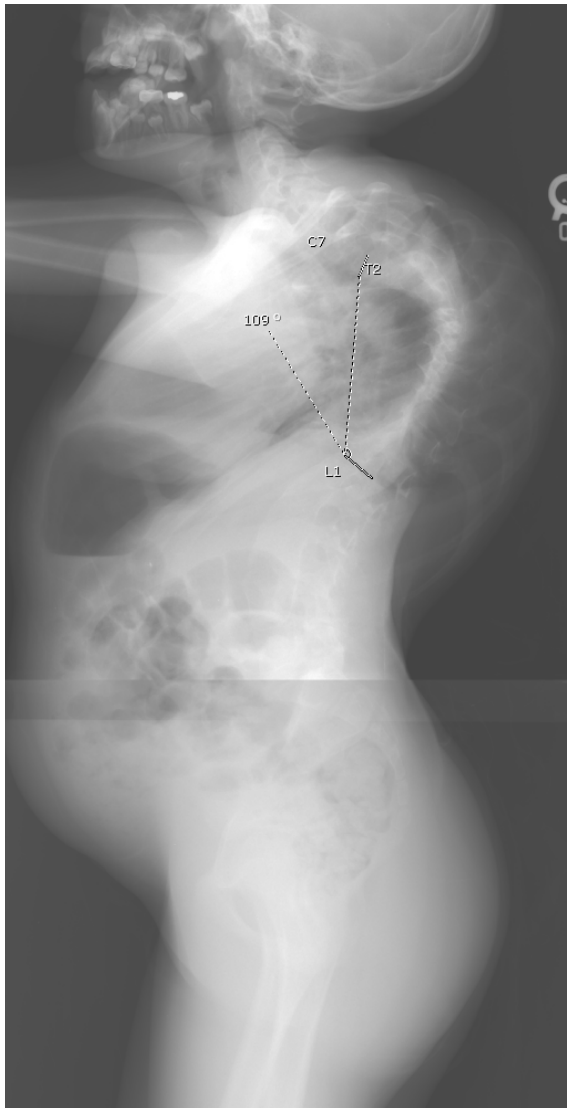


Traction s/p Ant Release T6-T11

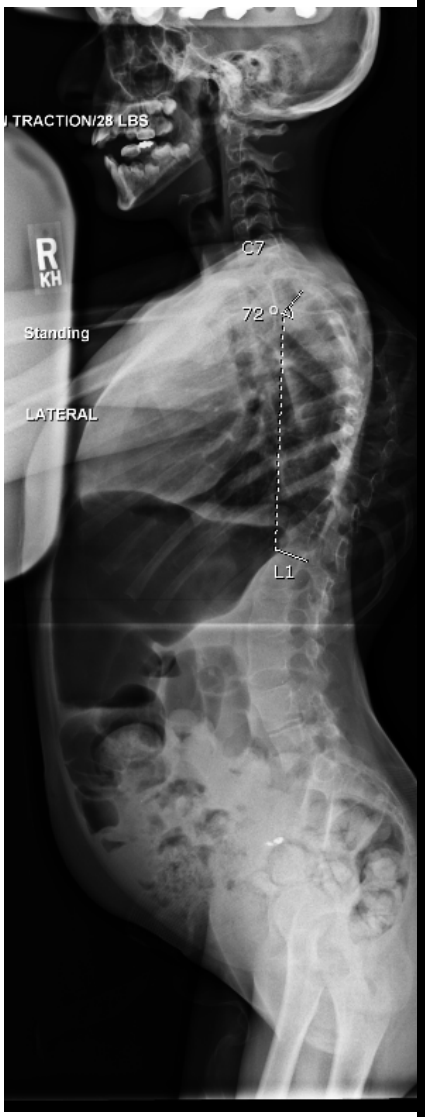


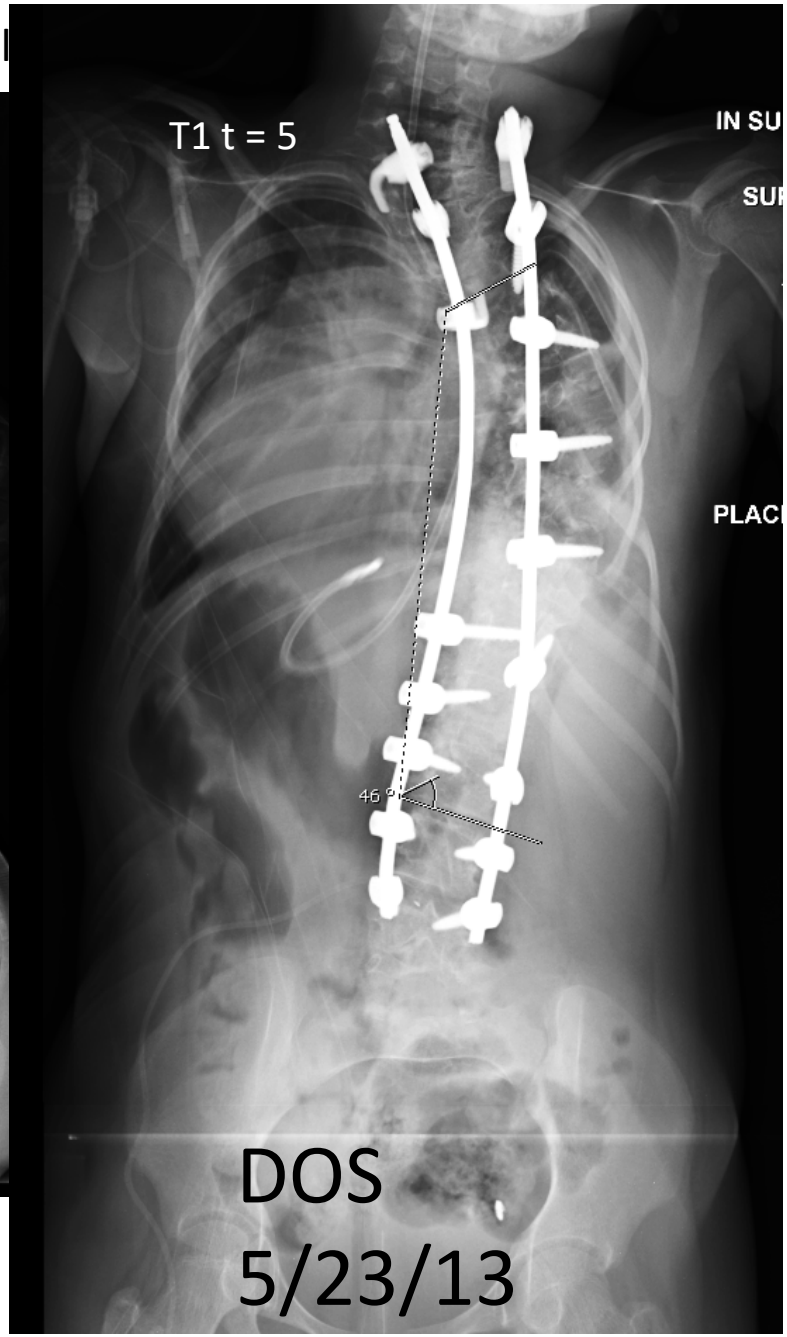
T1 horizontal

Admission

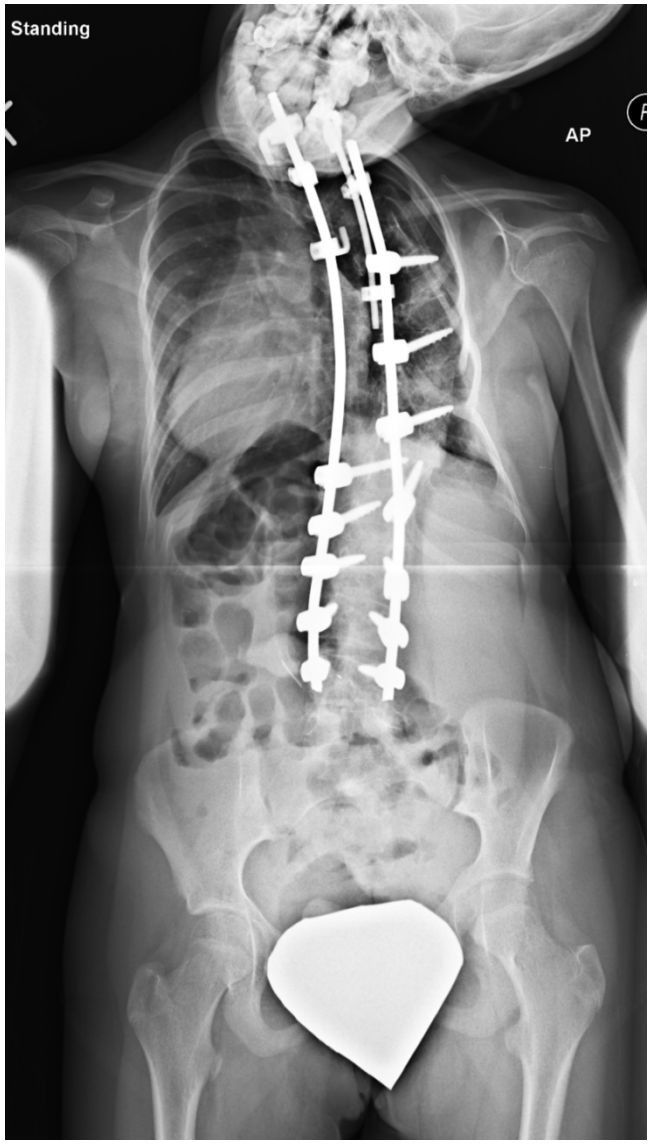


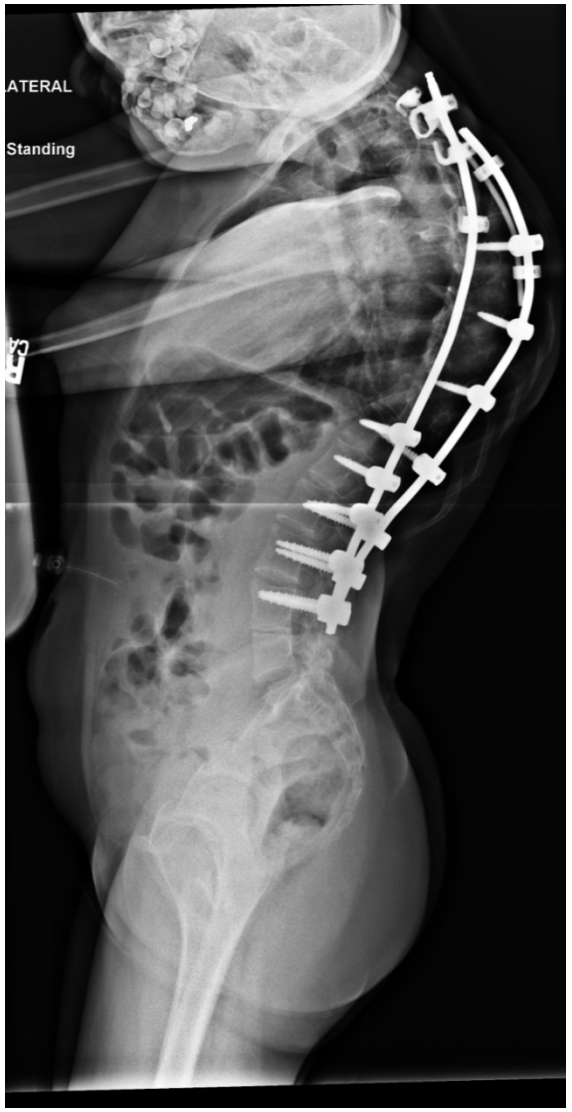
Traction s/p ant rel





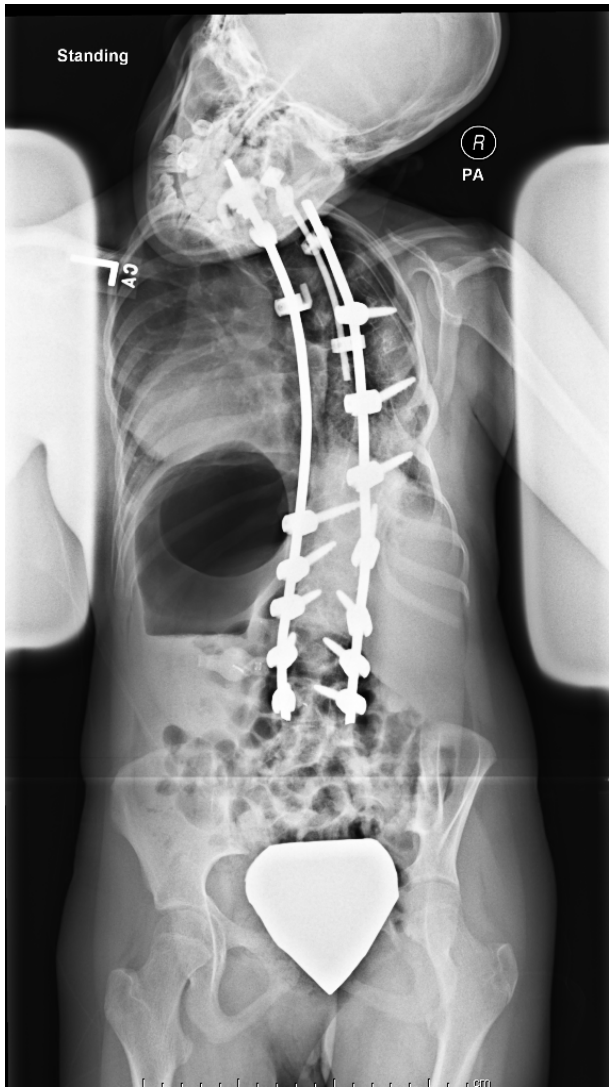
- halo vest postop
- at 4 weeks postop, coughed and pulled out proximal fixation (broken TP, PS backed out on right)
- Revised proximal fixation with hook construct to C7 bigger screw



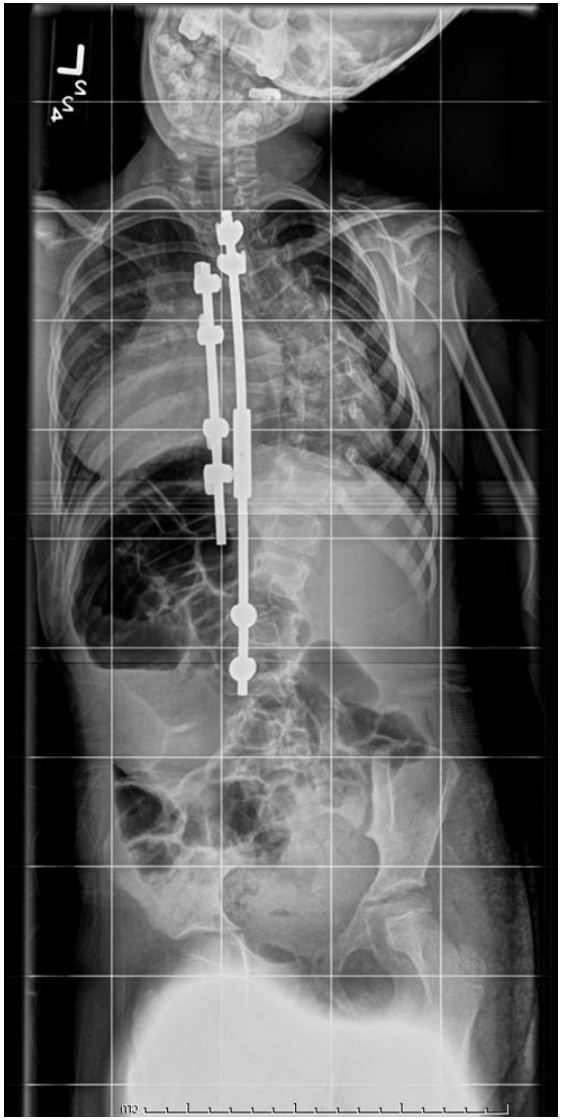


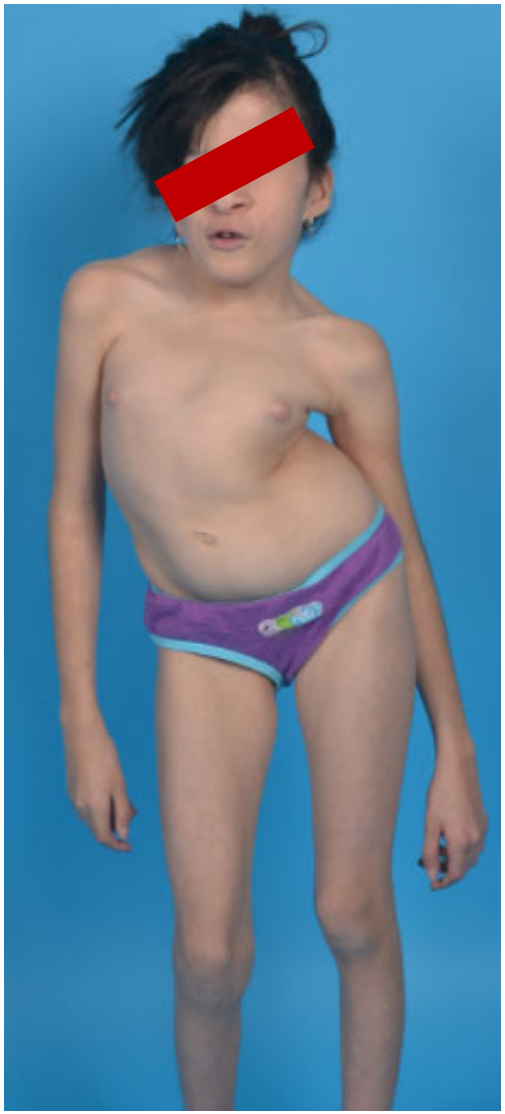
6 mo p.o.

- Notice the head tilt but it was also there after original procedure at OSH – prior to traction, prior to extension to C7



6 mo
postop
T1 tilt 10





- Rt head tilt now obvious with shoulders level, trunk corrected


Pre rx


Post op



R head tilt obvious now that trunk shift corrected

EMG of cranial nerve XI

Patient: [redacted] **Test Date:** 9/10/2014 **Page 2**

Summary of Findings:

1. The left and right trapezius compound muscle action potentials were obtainable and similar in amplitude and onset.
2. EMG of bilateral trapezius muscles demonstrated no spontaneous muscle activity. The right sternocleidomastoid muscle also did not demonstrate any abnormal spontaneous activity. This muscle did seem rather dense on needle placement.

Impression:

There is no evidence for a spinal accessory mononeuropathy as an explanation for her right torticollis. As mentioned, her right SCM muscle did appear to be rather dense, which is consistent with contracture appreciated on her neck movement exam under anesthesia.

Ophtho consult

Austin Pediatric Ophthalmology and Strabismus

[redacted]

Quarry Lake Medical Park
4700 Seton Center Parkway, Suite 150
Austin, Texas 78759
(512) 345-3595 -- fax (512) 345-7618

Consult

FEB 04 2014

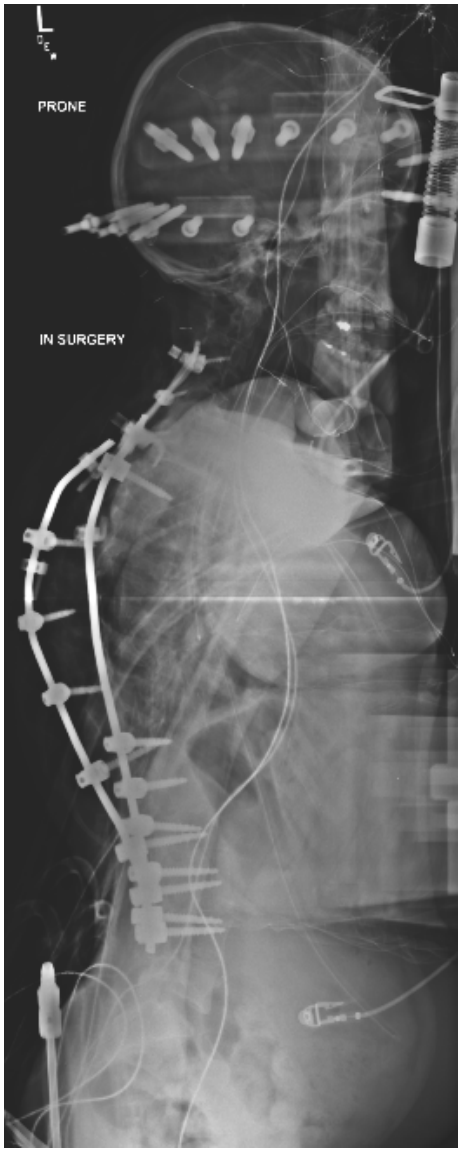
1/30/14

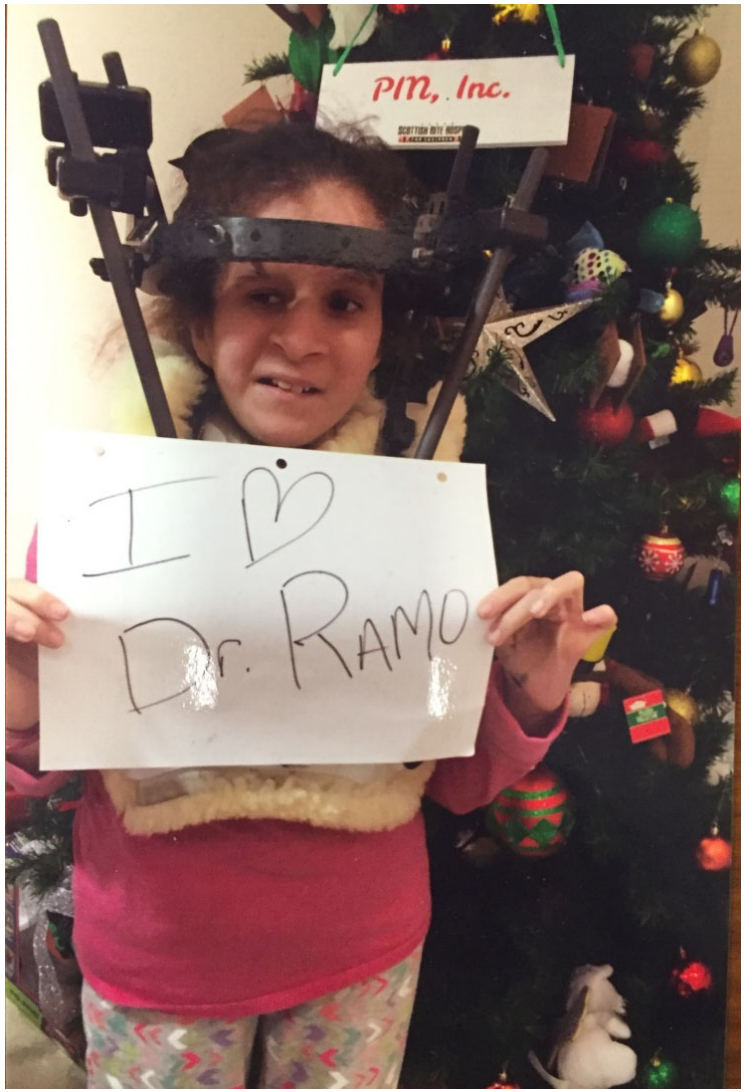
TSAH# 227049

PEDIATRIC OPHTHALMOLOGY EXAM REPORT

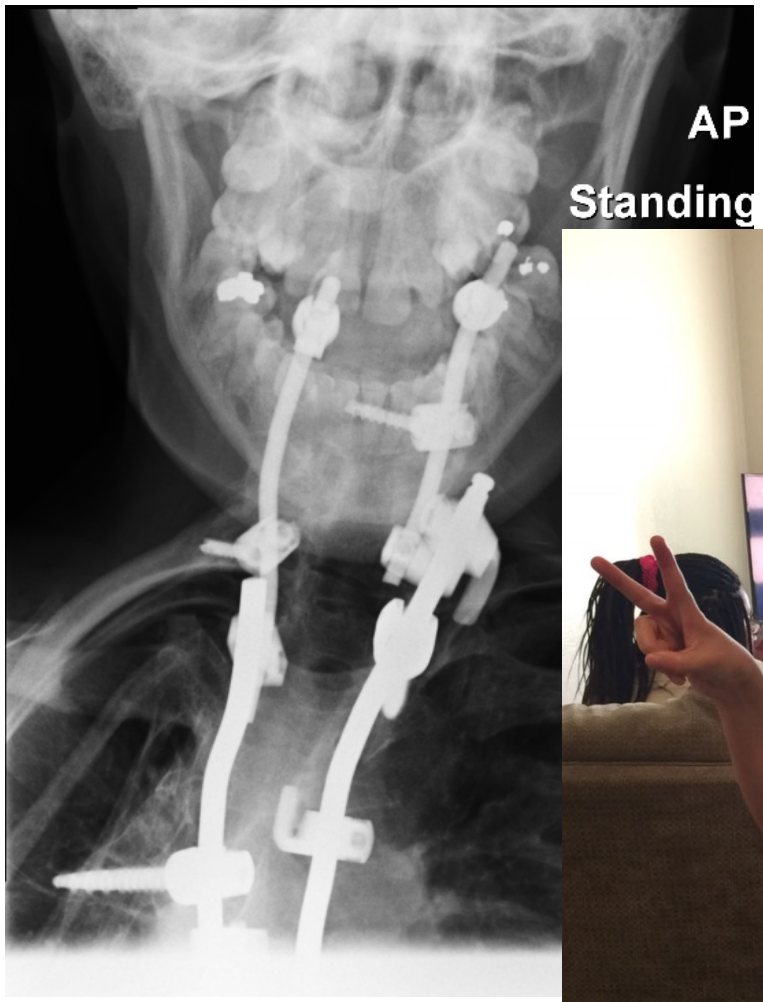
Treatment Plan: The risks, benefits, and alternatives of all therapeutic options were discussed. I explained to the patient's mother that if this patient's head position is related to a superior oblique palsy then placing the head in the left head tilt position would cause the patient's left eye to shoot upward and I do not see that abnormal movement. Additionally, there is no nystagmus to suggest a null zone. Both optic nerve heads appeared healthy. There was no papilledema, atrophy, or pallor to suggest any increased intracranial pressure. It is my hope that Dr. Brandon Ramo could present this patient's complex problem to a major medical conference and perhaps get a consensus opinion as to how this patient's scoliosis issue can be managed going forward. Perhaps also his medical specialty has an Internet chat group where the surgeons can give input.

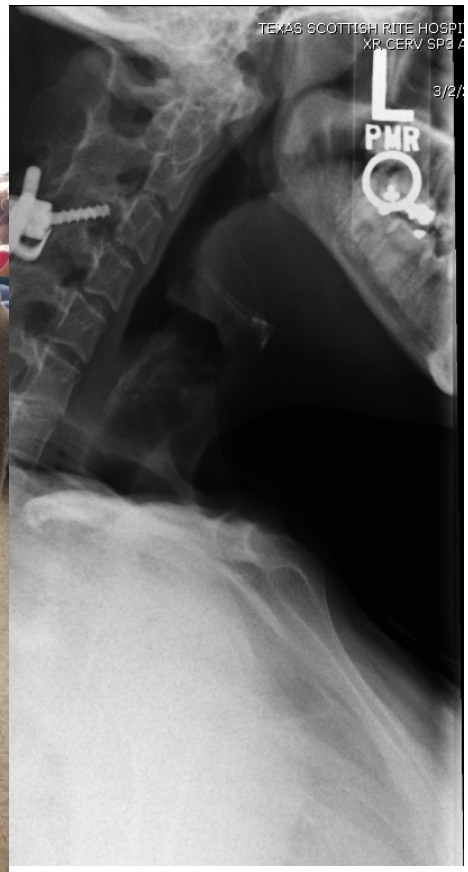
The rest of the story……





5 month postop – C4 extension





New type of torticollis ?

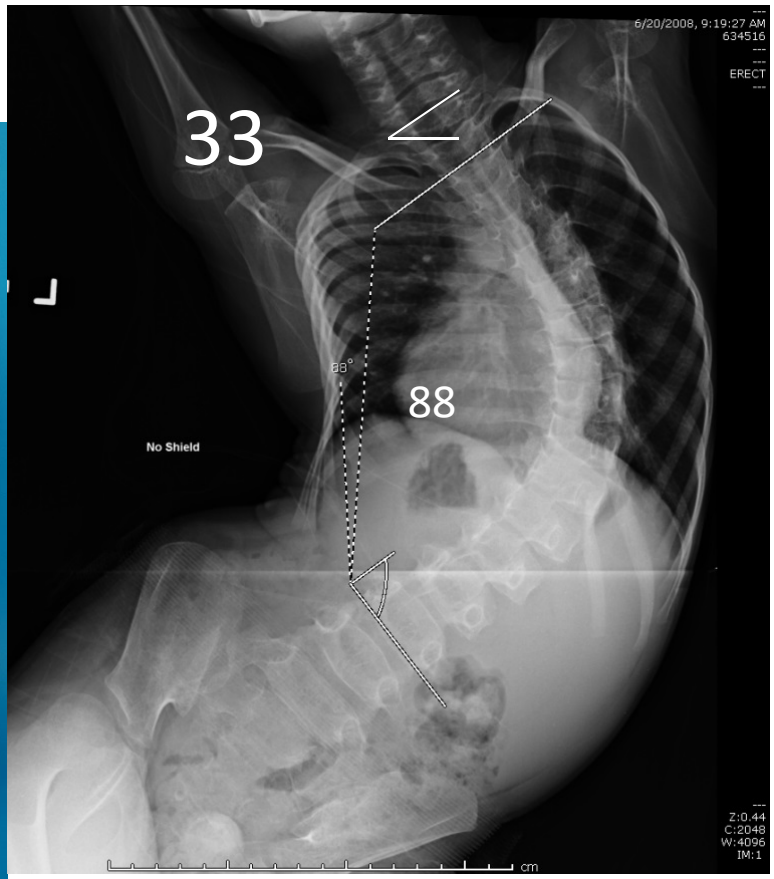
- Absence of congenital bony anomaly
- All unmasked w distraction-correction (HGT ± GRI)
- Role of SCM (?proxy for neck m.) = “paralytic”
  1 case – proven, 1 case - suspicion (mass excision),
  1 – normal EMG
- OR, structural transformation of compensatory curve (all 3)
- Horizontal T1 not necessarily helpful (but certainly should be addressed)

Don’t assume all unilateral shoulder elevation is scoliosis deformity

#4 DT cong myopathy (? Limb-girdle)

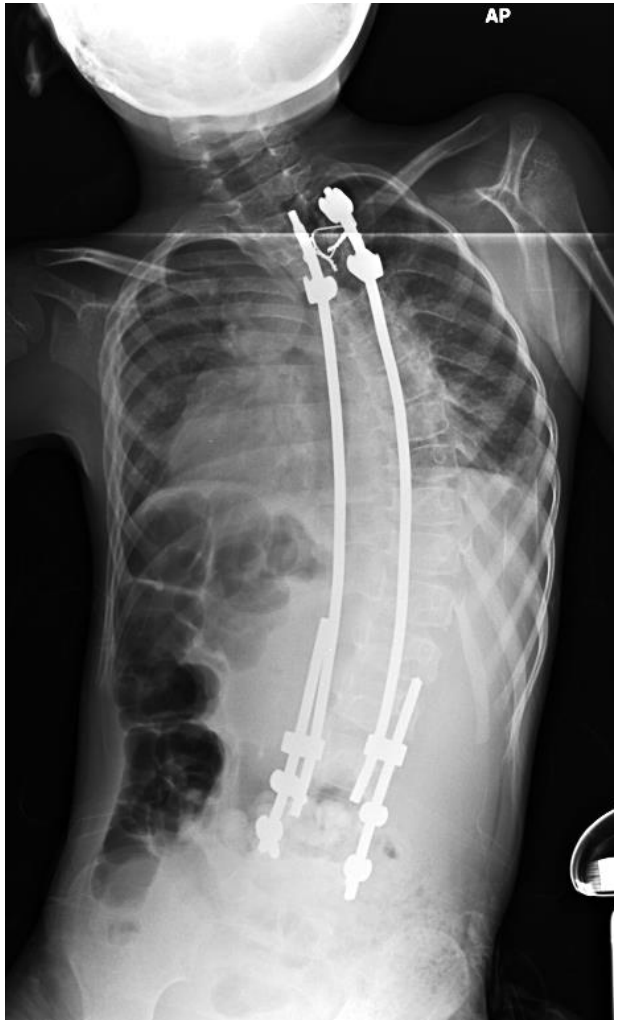
- 7+7 still ambulatory, walks holding on
- FVC 38% pred, ↓'ing
- Sibling also involved

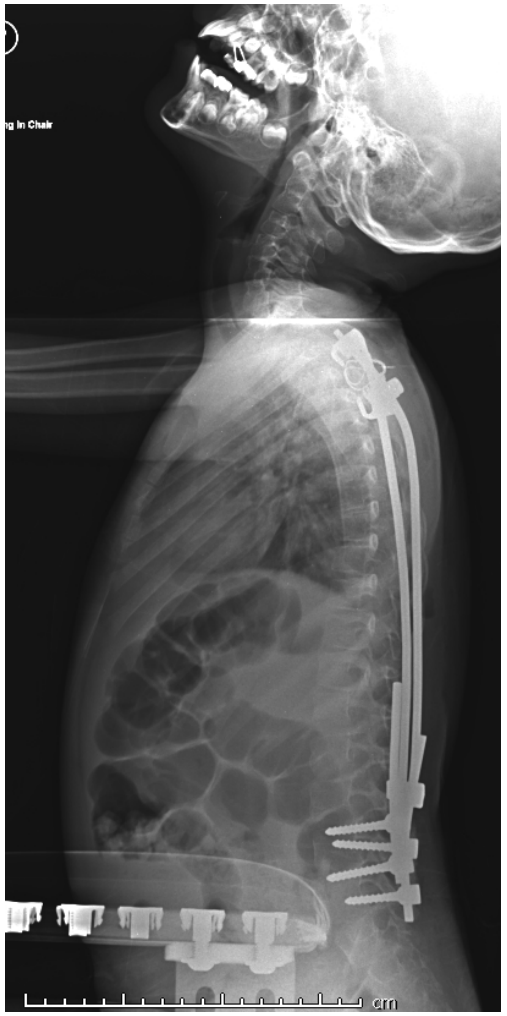
No upright picture



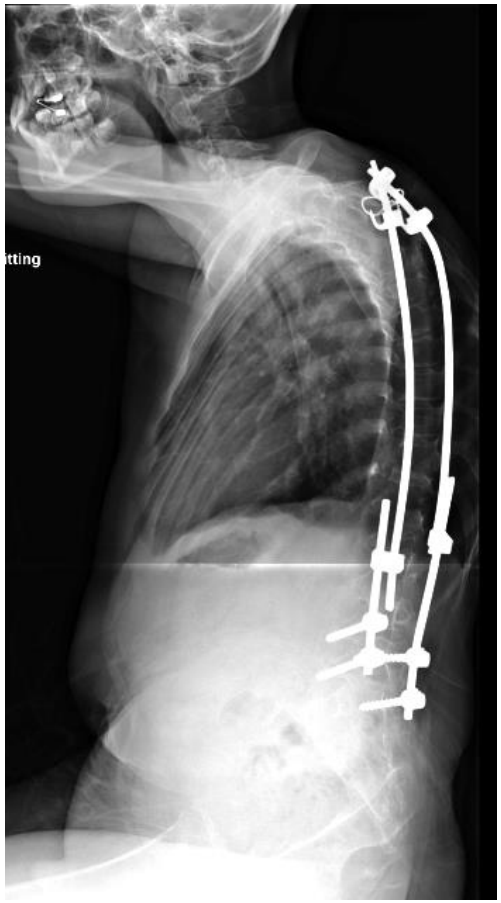
GR's 6/08

stretch





4 yr later / length X3 / 1 yr since last OR



Head tilt toward <u>low</u> shoulder – paralytic?

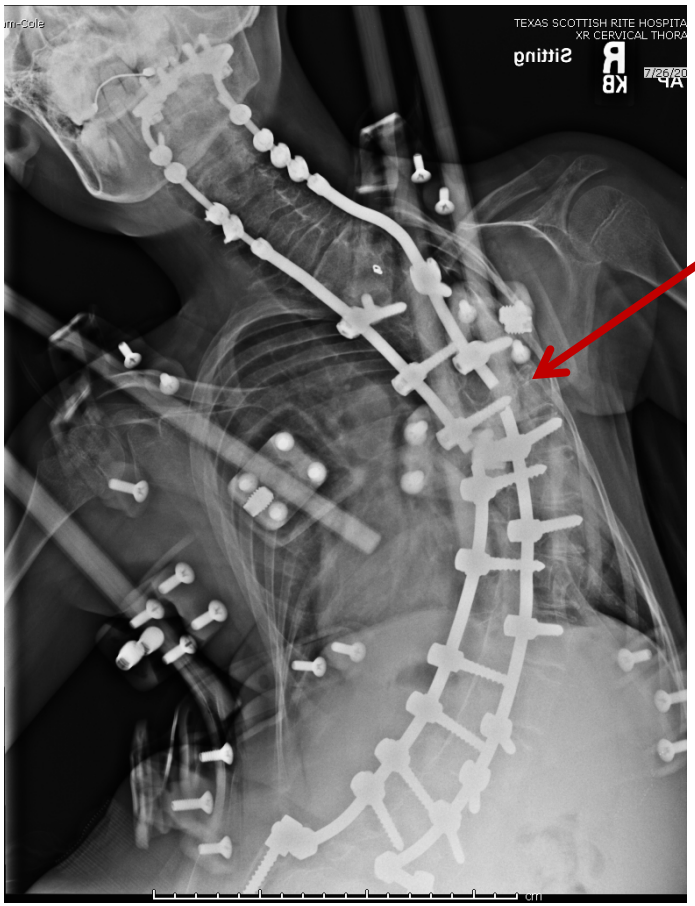
\+ Worsening of T1 tilt

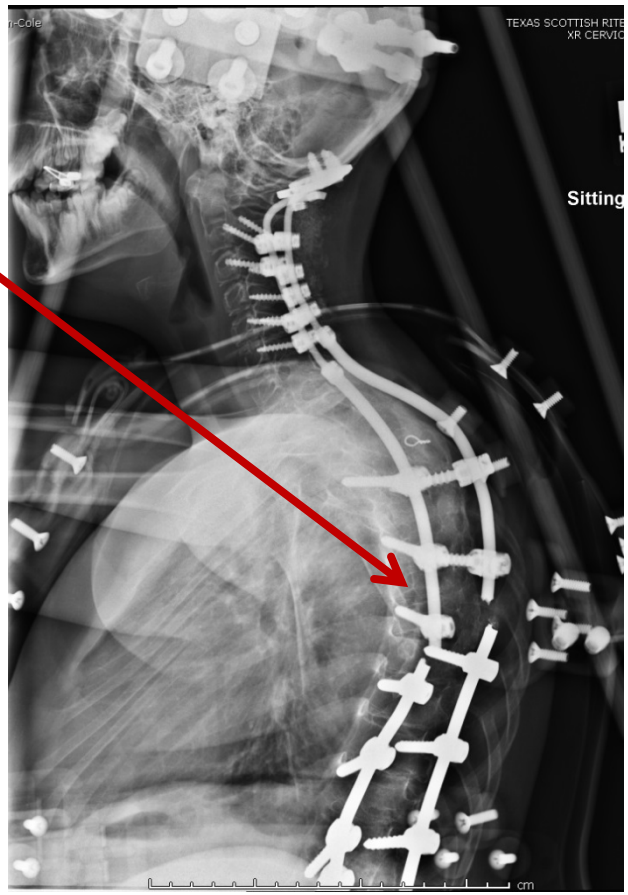
PSF T2-pelvis (8/11)

Assumed to be progressive myopathy
Neck - stiff, painful to manipulate
Fusion/instr extended to occiput 6/12

Extend to Occiput 6/12

- Brief traction to establish correctability
- Oc-T6 implants Ti, not connected to previous SS (fusion mass solid)





Last f/u 12/15 (3½ yr)

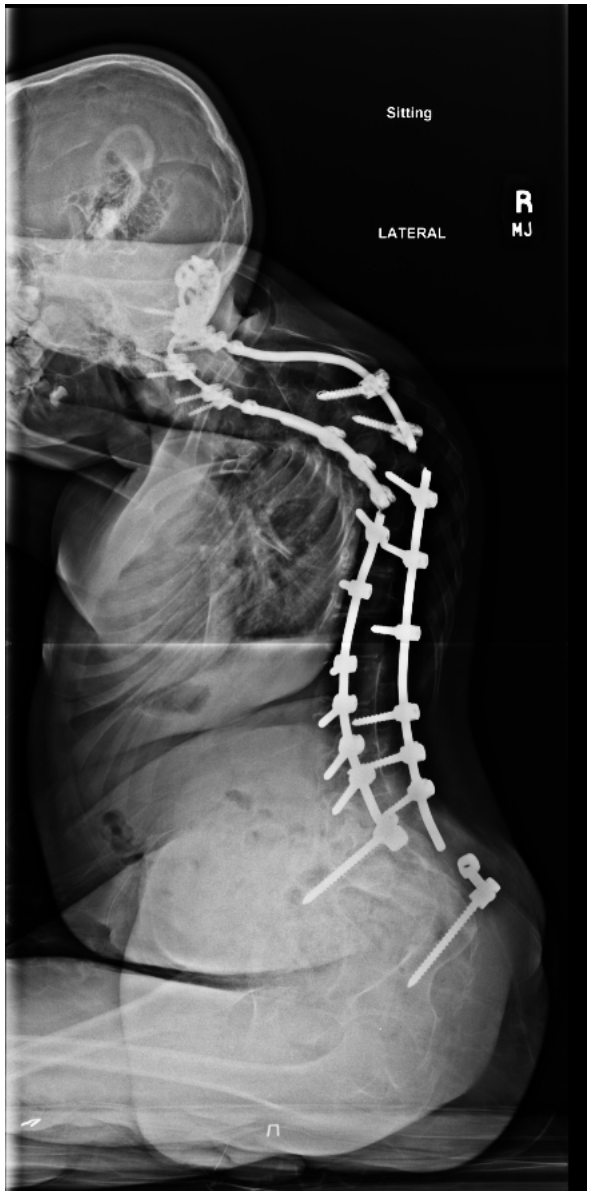
Probable crankshaft + fusion bending

Bipap nights, some daytime

Dyspneic

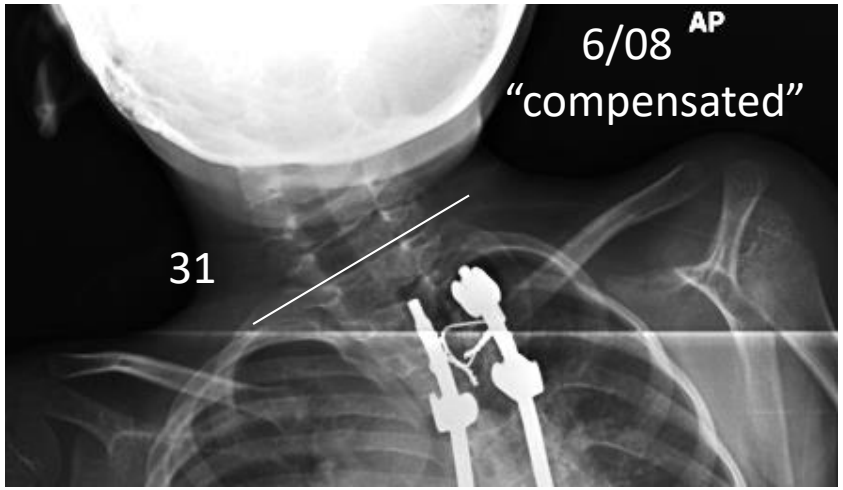
No pain sitting, custom insert

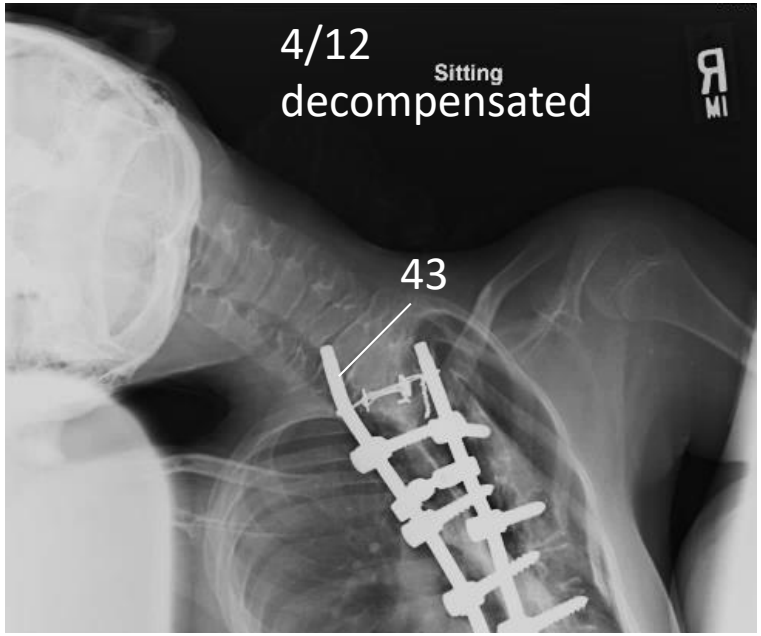
Neck asympt



Case 4 - OCTO

- Head position loss as T1 tilt/shoulder asymmetry progressed –>
- Unable to maintain upright position as C-T tilt worsened (crankshaft)





How common is this?

- Relation to distraction rx (HGT/GRI)??
- 3 / 4 neuromuscular dx's
- T1 OCTO should be addressed, but doesn't necessarily solve problem (case 1&3)
- Traction obscures structural + "paralytic" aspects of deformity
- Add shoulder shrug motor to traction neuro checks

TEXAS
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