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# Top 6 Reasons Three Column Osteotomies Are Needed

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# Disclosure Information

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- **I have the following financial relationships to disclose:**
  - **Consultant for: Biogen, Inc.; Nuvasive, Inc.**
  - **Speaker for: Biogen, Inc.**

# Need Patient Specific Plan

- Can't be rigid in decision making
- Deformity Surgery is not a "one-size-fits-all"



# Three Column Osteotomies

## Reason #6: Focal Deformity



Deformed T4 and T5  
MRI contraindicated  
due to cochlear  
implants

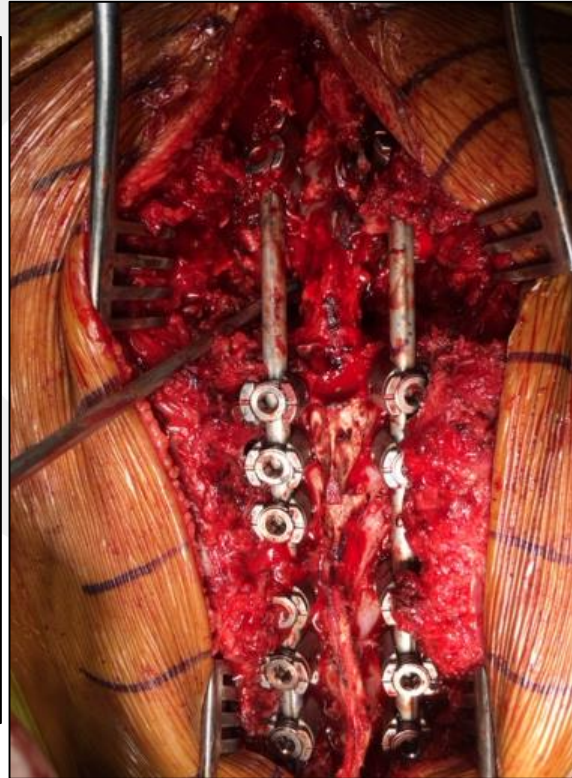
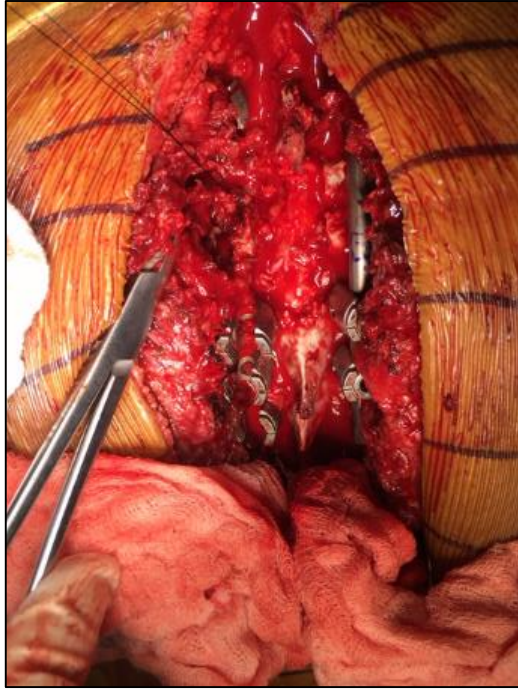
## Reason #6: The DAR concept

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- The Deformity Angulation Ratio is a measure of focal deformity
- $DAR = \text{Max. Cobb} / \# \text{ levels}$
- “Patients with a total  $DAR \geq 25$  or sagittal  $DAR \geq 15$  are at much higher risk for intraoperative SCM events and new neurologic deficits”
  - Wang, Lenke et al. *Spine* 2016

Three Column Osteotomies

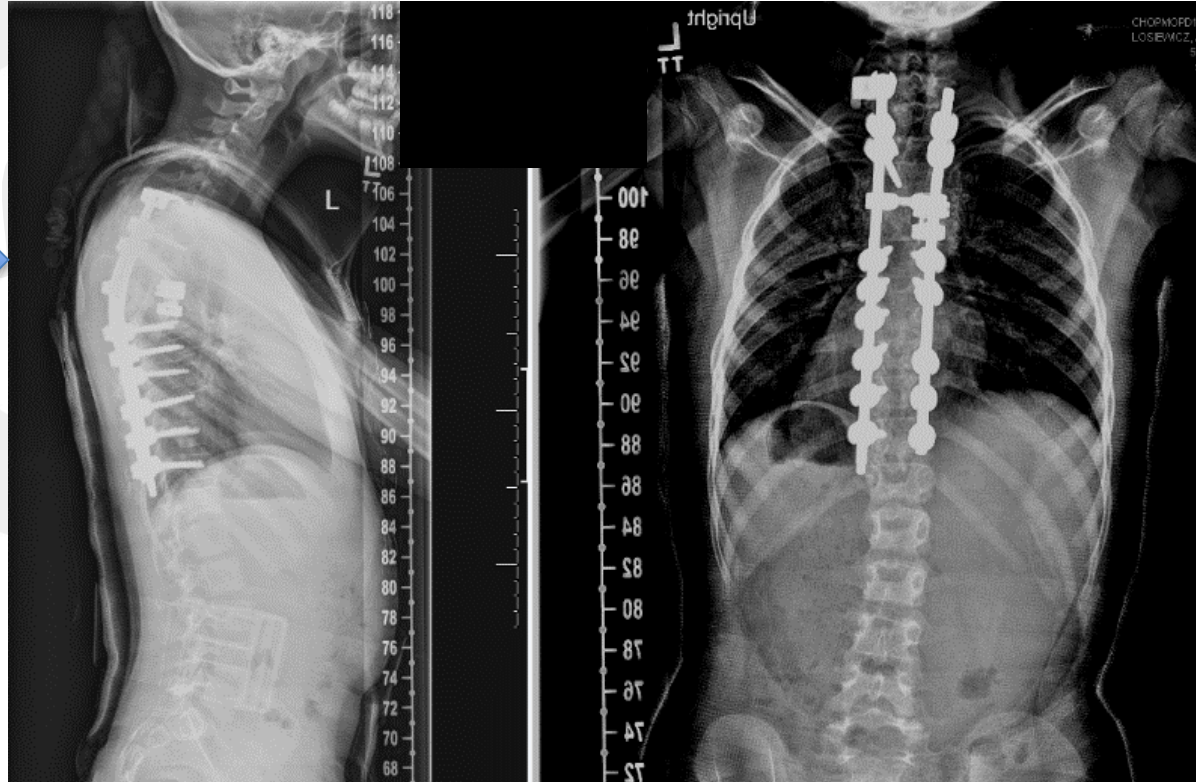
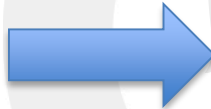
# Correction of Focal Deformity



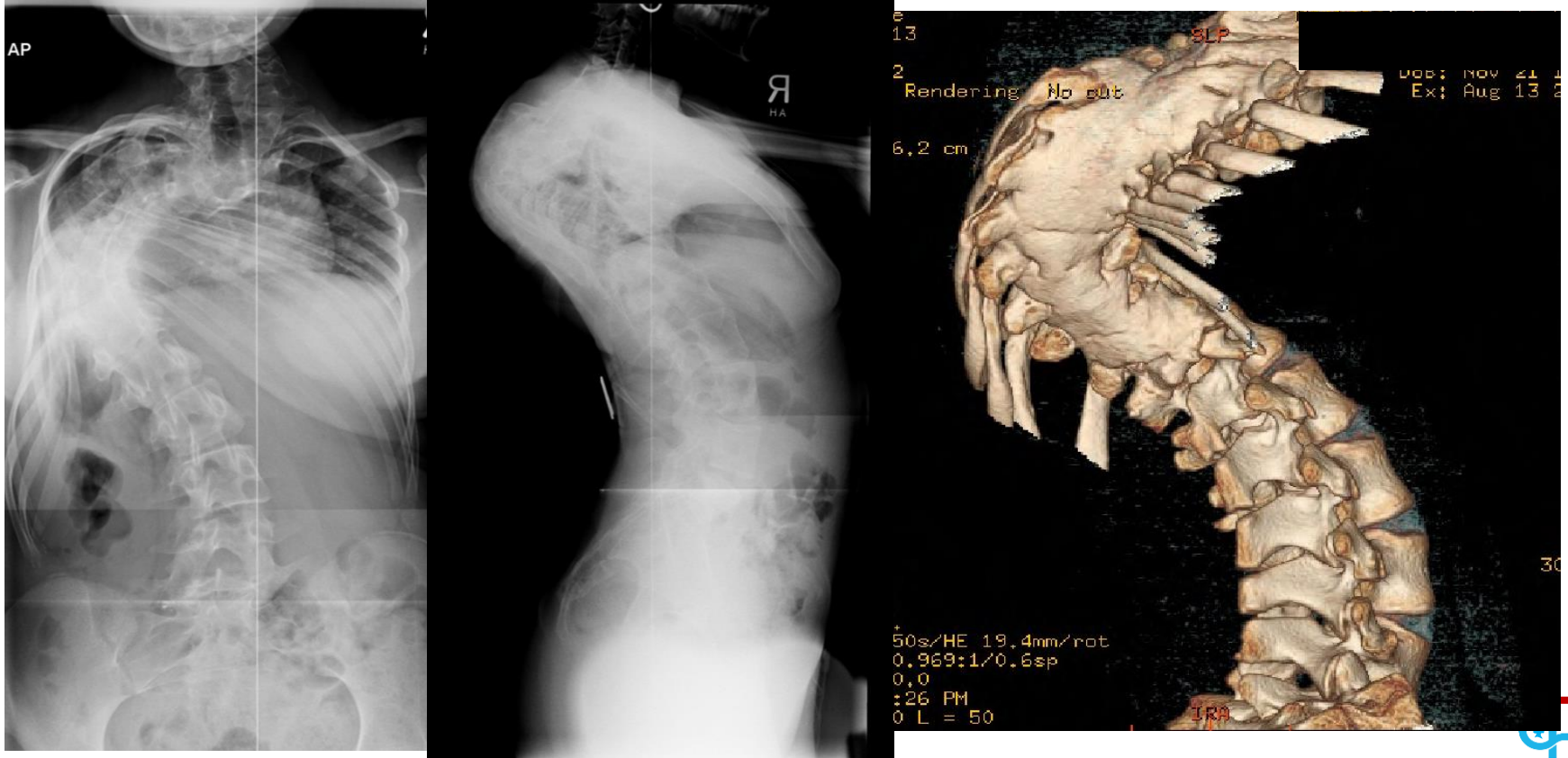


# Three Column Osteotomy

## Can't Do This with Ponte's



# Reason #5: Fusion Mass Dissection





## Reason #5: Fusion Mass

- PSF for  $\sim 120^\circ$  scoliosis following halo gravity traction
  - Complicated by temporary loss of all LE motor function, bowel & bladder control, and most sensation
- Instrumentation removal 1yr. Later for infection



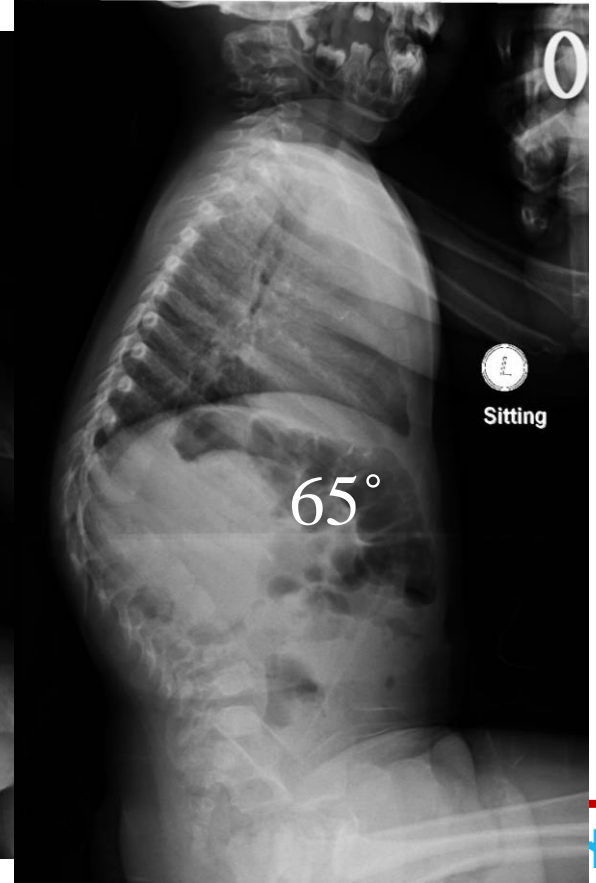
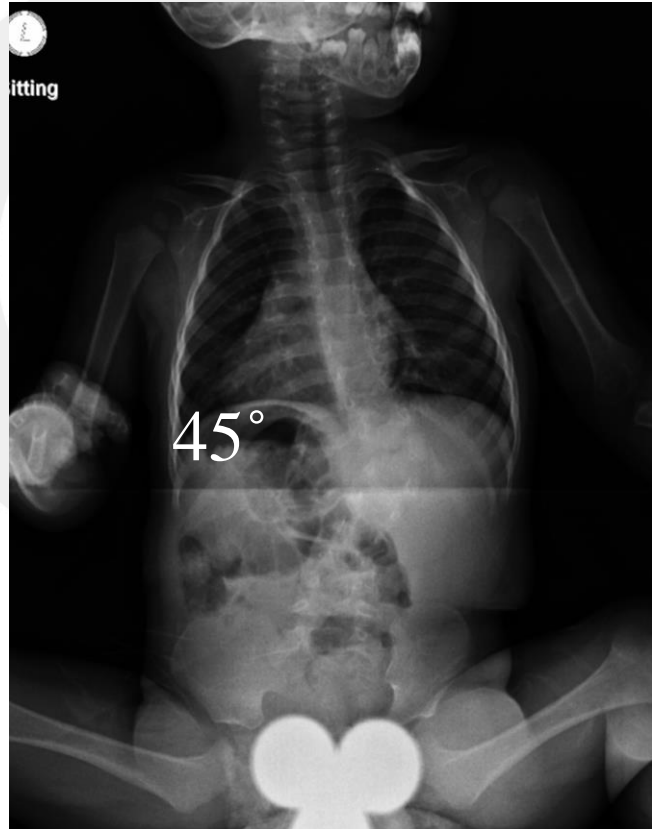




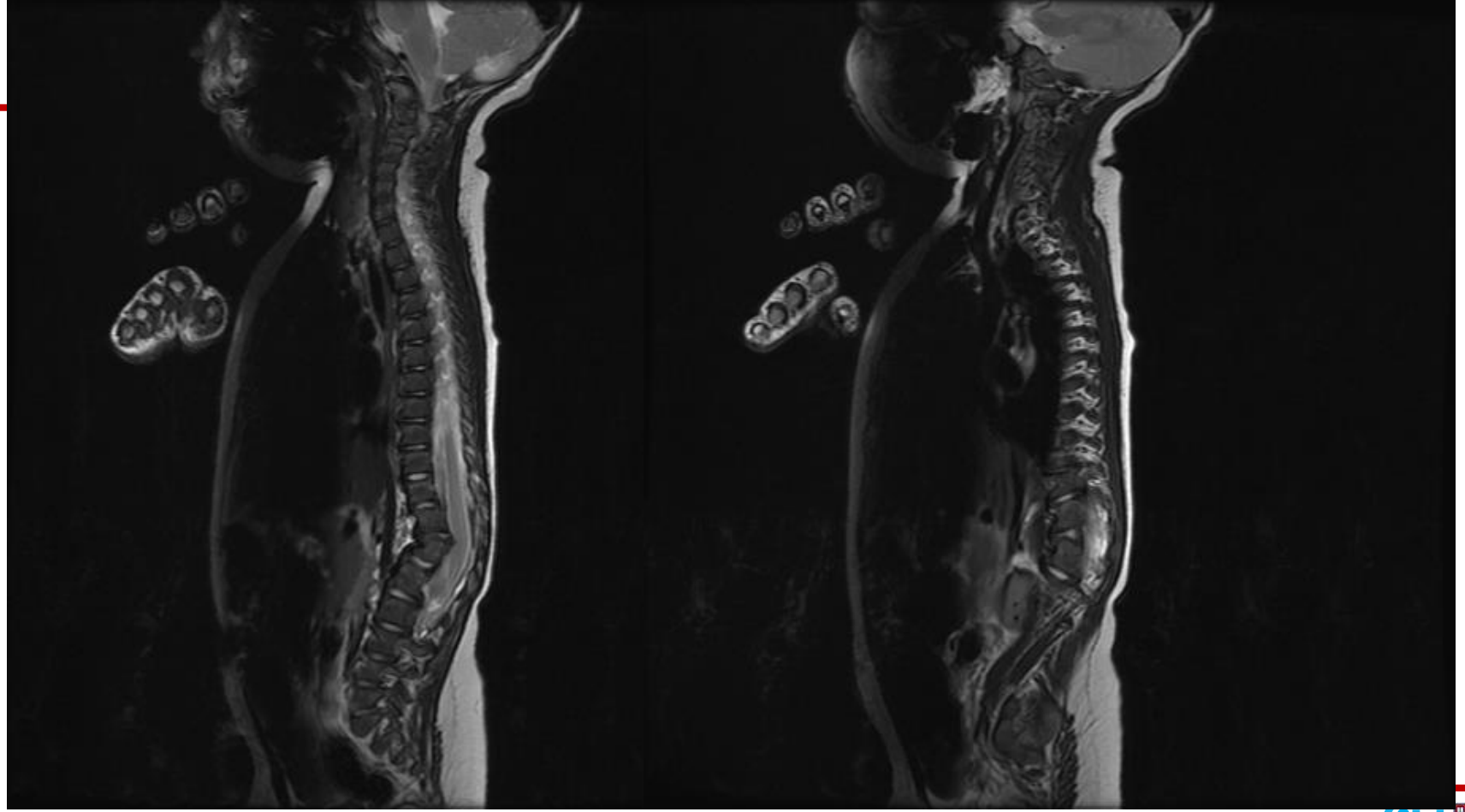
THO

# Reason #4: Saving Levels in EOS

- 2 y/o male with progressive congenital kyphoscoliosis









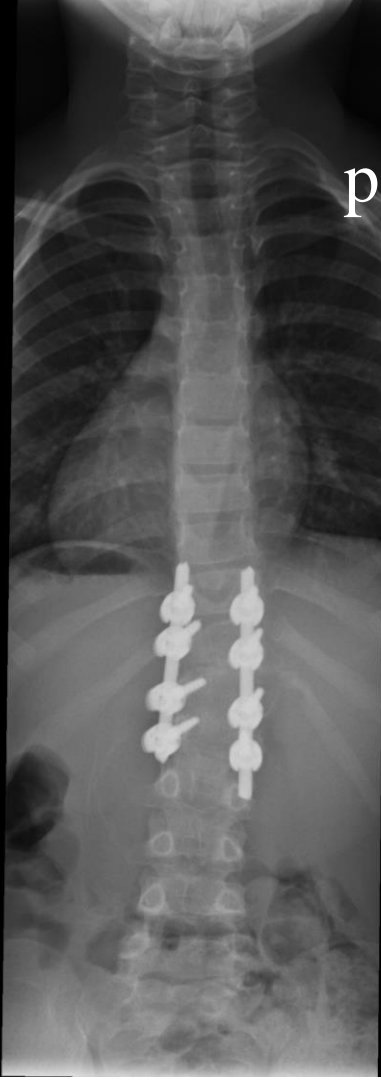


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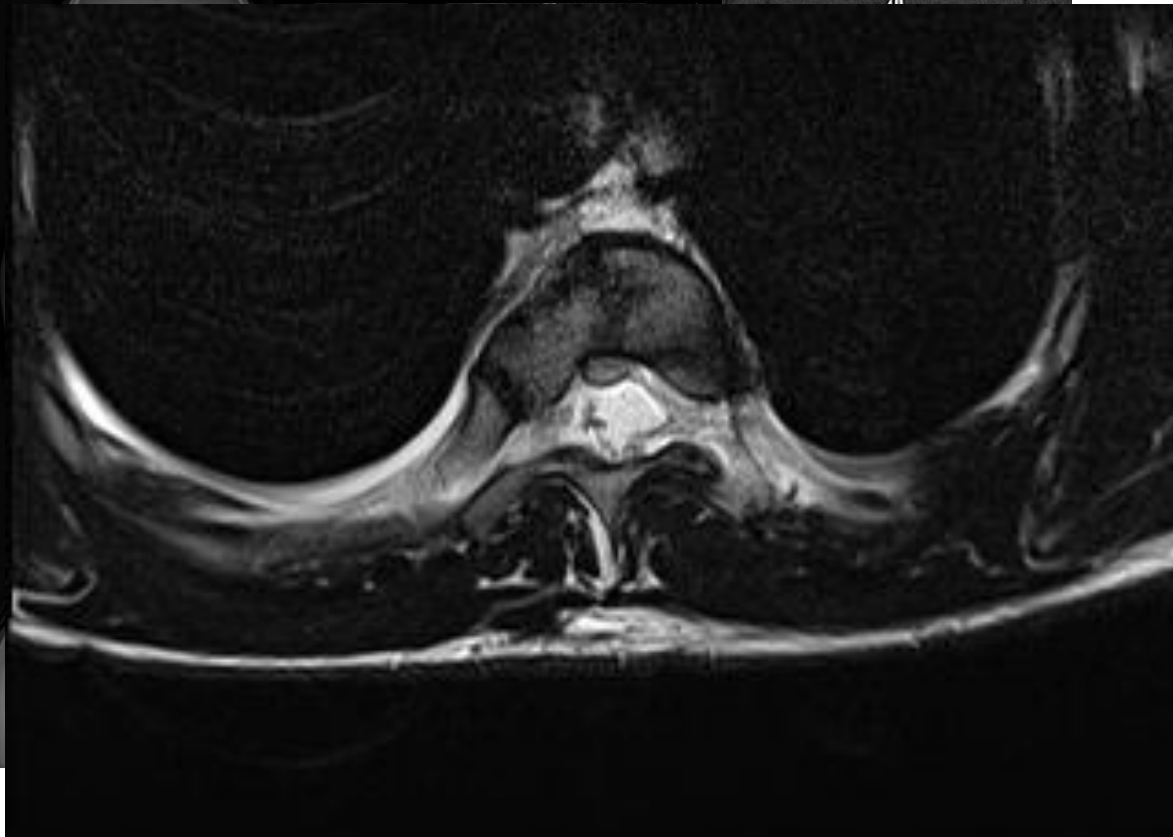
4y  
post-op



ORTHO

# Three Column Osteotomies

## Reason #3: Decompression

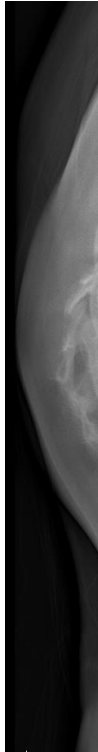


with

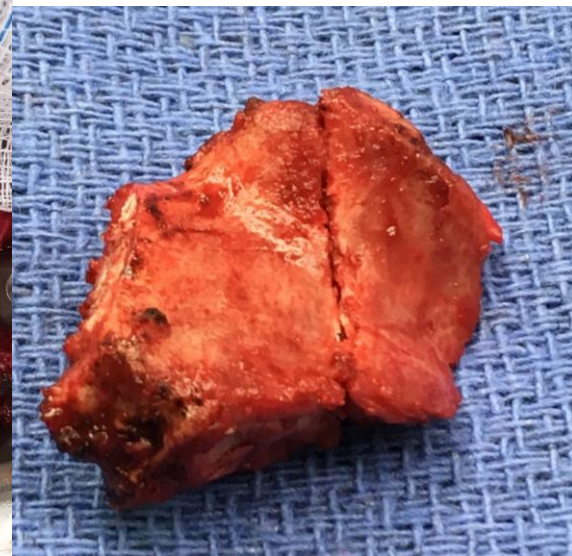
## Three Column Osteotomies

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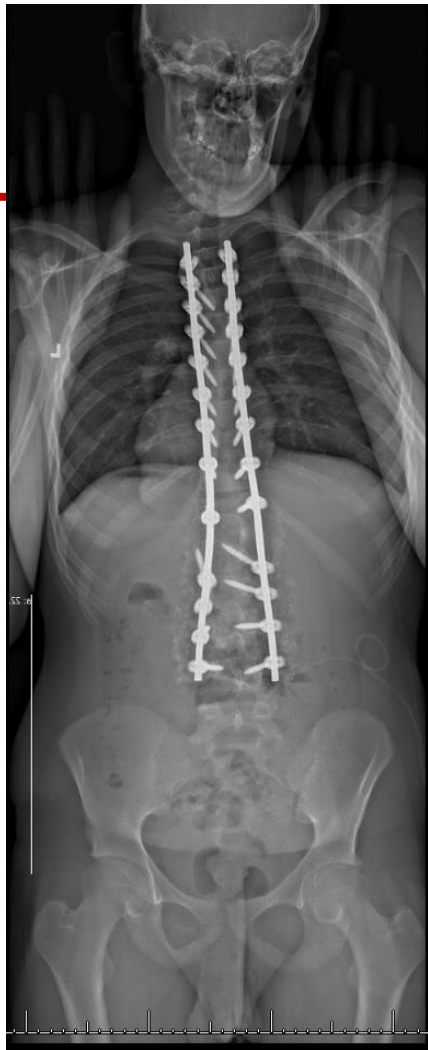




ORTHO



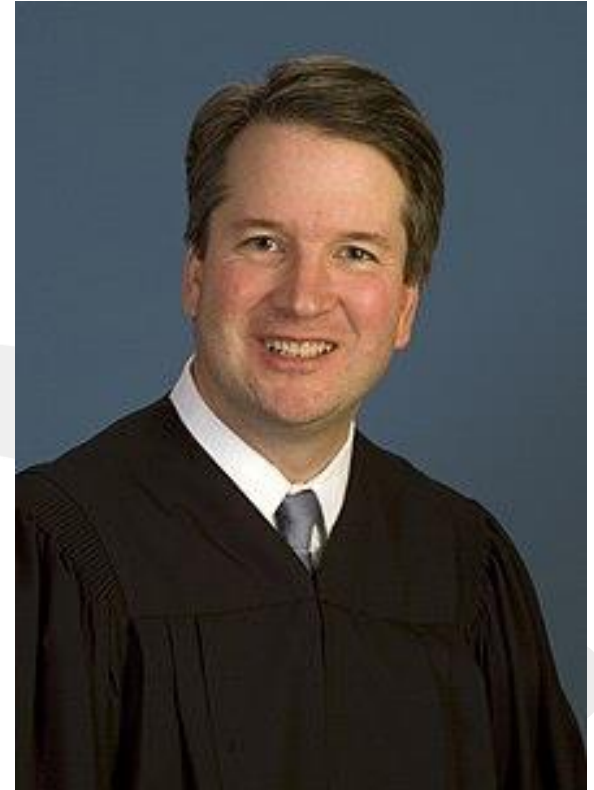




# Reason #1: Need For Many Options

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- Surgeons should have facility with multiple options for deformity correction
- Deformity surgery requires flexible thinking and problem solving



June 1982

S	M	T	W	T	F	S
		1	2	3	4	5
		MATH 3:30 OUT 6:30 SCHOOL	Dr. DeLatorre 2:00 English Paper Due	KEMPER	Go to Kemper w/ Dad	Achievement Tests 8:30am BEACH WEEK Sean Feeley drives
		E	X	A	M	S
TRINITY SUNDAY 6	7	8	9	10	11	12
BEACH	WEEK					END
Suzanne		Suzanne	Suzanne Wikki DAD'S BIRTHDAY			SPEND NIGHT AT CONC'S IN BEACHCOTT
13	14	15	16	17	18	19
Go to Rocky III w/ Squi, P. & Lee COME HOME FROM BEACH	FLAG DAY GAME 1:40 11-14-39 WEIGHTS 7-13 MOM MOM MOM		GAME 5:30 LOST 0-1 2 PTS GO TO GREASE II w/ Suzanne	Pick Up Pictures	FIVE- STAR BASKETBALL CAMP STARTS	
FATHER'S DAY 20	21	22	23	24	25	26
					Go to party at beach w/ Squi, P. & Lee B-BALL CAMP ENDS	Go to Michael's w/ Squi + M. K. see folk artist
COME HOME FROM ST. MICHAEL'S Play B-Ball at the beach	28	29	30			
	START WORK GAME 5:30 vs. Blair lost 14-15 1st place	Tabin's Houser Workout 6-8 Play B-Ball at Mapplewood WARR	Dr. DeLatorre 2:00 Game 5:30 vs. Whitman lost 21-28 7-8 LIFT at Prep			



# SEPTEMBER 2018

SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
26	27	28	29	30	31	1
2	3 LABOR DAY	4 Pontes	5	6 Pontes	7	8 Dungeons + Dragons club & Dan + Amy
9 ROSH HASHANAH (BEGINS AT SUNDOWN) CANDLE MAKING!	10	11 Pontes	12	13 Pontes	14 Pontes	15
16 SHELL COLLECTING - S. PADREIS.	17	18 YOM KIPPUR (BEGINS AT SUNDOWN) Pontes	19	20 Pontes	21	22 FIRST DAY OF AUTUMN D + D club & Dan + Amy
23	24	25 Pontes	26	27 Pontes	28 Pontes	29
30						

JULY 2018  
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29 30 31

AUGUST 2018  
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SEPTEMBER 2018  
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OCTOBER 2018  
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JUNE 2019  
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