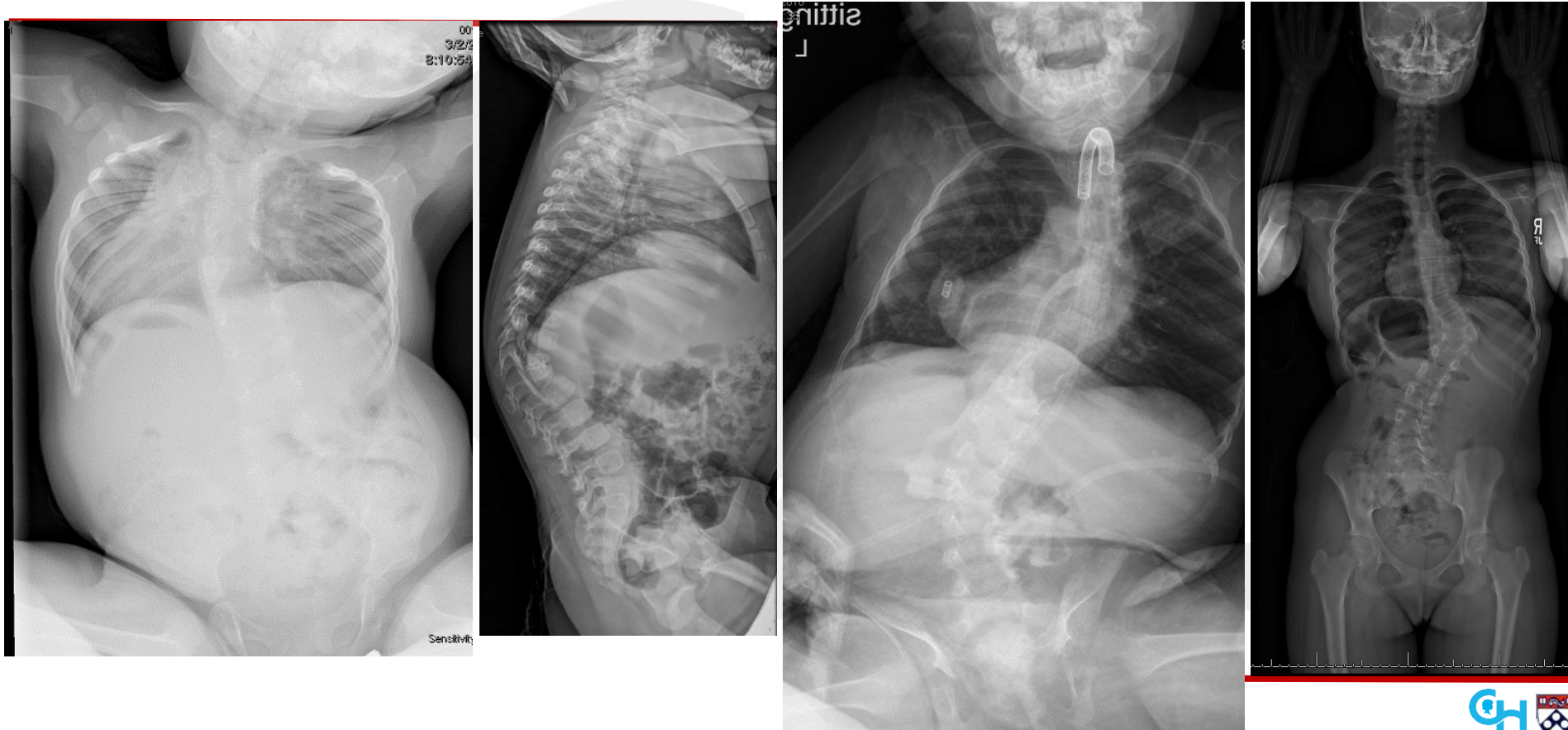

Expert Consensus for Early Onset Scoliosis Surgery 2018

Jason B. Anari MD, Patrick J. Cahill MD,
Divya Talwar MPH; John M. Flynn MD



The Children's Hospital of Philadelphia
Perelman School of Medicine at University of Pennsylvania

Various Deformities of Early Onset Scoliosis



Question ?

- Has technology outpaced surgeon ability to define indications in early onset scoliosis?

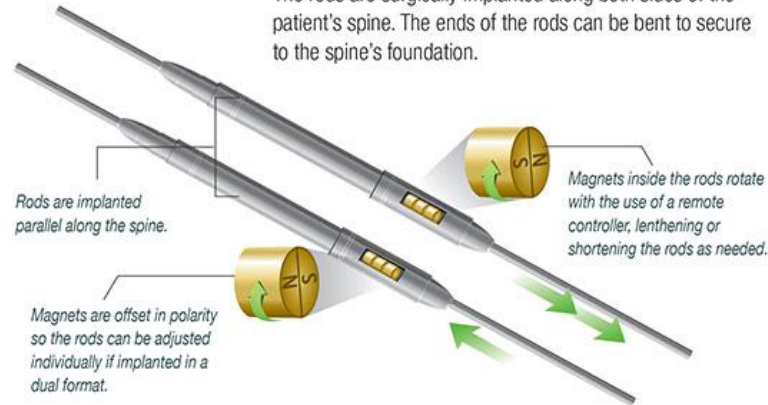
Classification of Early Onset Scoliosis (C-EOS)



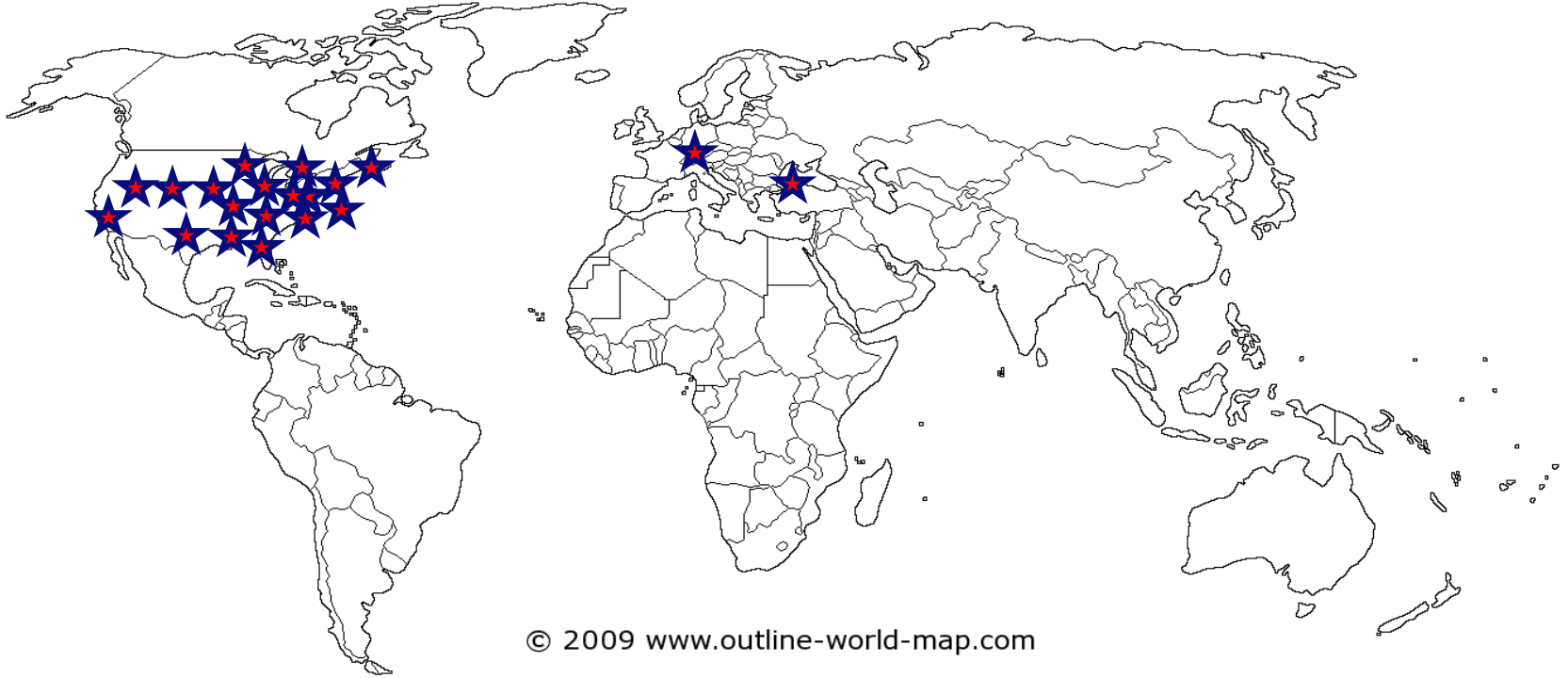
SPINRAZA™
(nusinersen) injection
12 mg/5 mL

► The Magnetic Growing Rods

The rods are surgically implanted along both sides of the patient's spine. The ends of the rods can be bent to secure to the spine's foundation.



EOS Thought Leaders



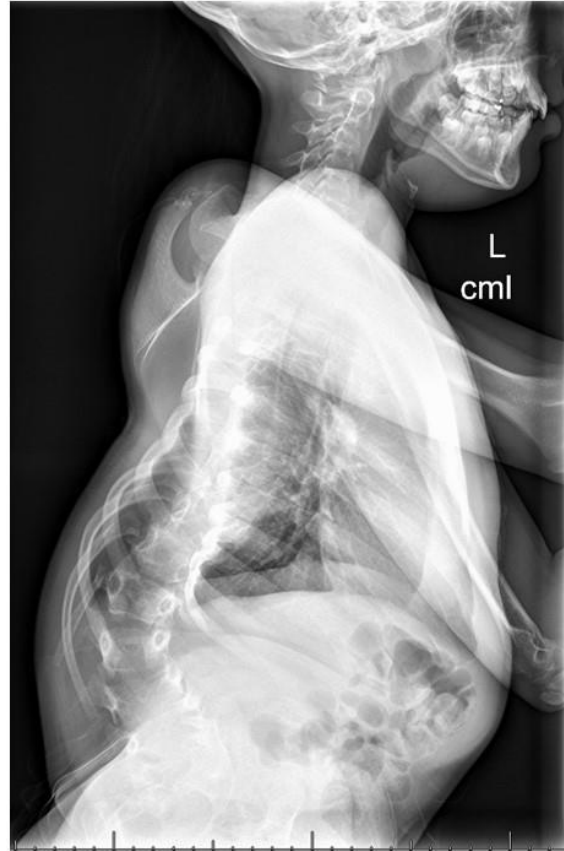
© 2009 www.outline-world-map.com

Methods

- Define consensus $> 80\%$
- Red cap 2 weeks prior to ICEOS deadline
 - **100%** response by 10 days
- **478 years of experience**



Methods



Case 1

- 9 y/o F
- Spina Bifida
- Wheelchair
- C-EOS:M4+
- TL curve has progressed 30° over past 2 years (now 92°)

Methods

Case 1

Treatment you would offer now:

- a. Observe
- b. Brace
- c. Mehta cast
- d. TGR
- e. VEPTR
- f. MCGR
- g. Shilla
- h. PSF
- i. Other_____

If growth-friendly surgery:

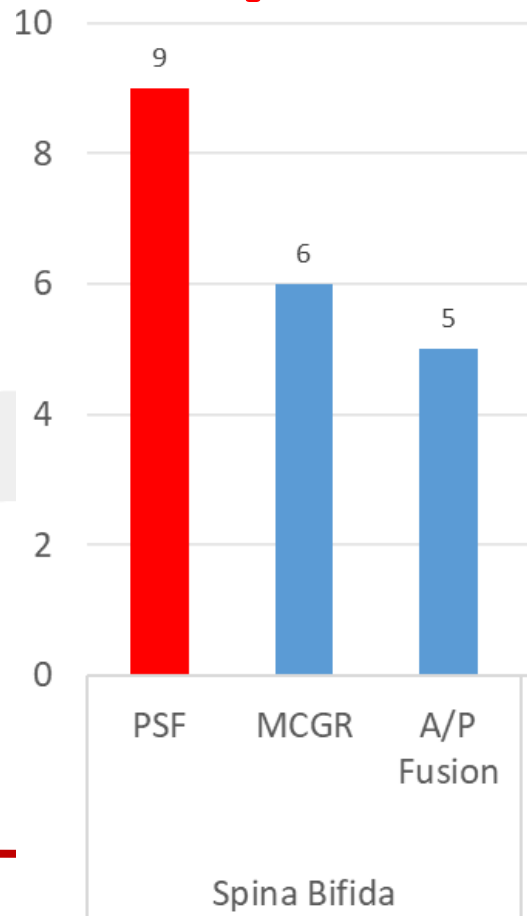
1. Proximal anchor fixation choice
 - a. Ribs
 - b. Spine
 - c. Combination
2. Distal Anchors
 - a. Spine
 - b. Pelvis--S/U hook on iliac wings
 - c. Pelvis—iliac/sacral screws

Results

Case 1: 9/20 - PSF



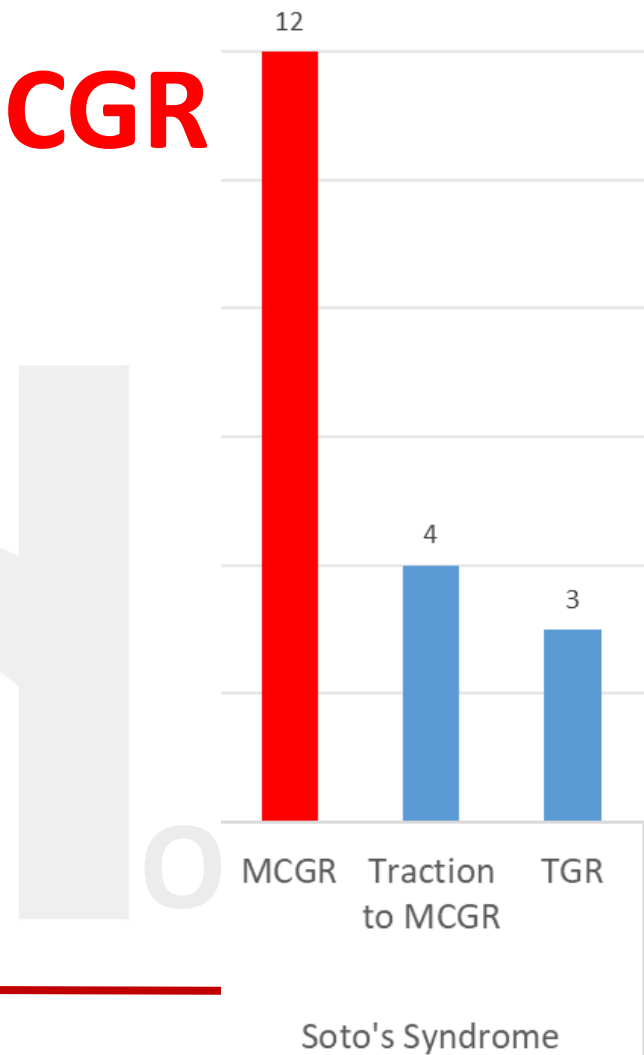
4 different treatment options



Results Case 2: 12/20 - MCGR

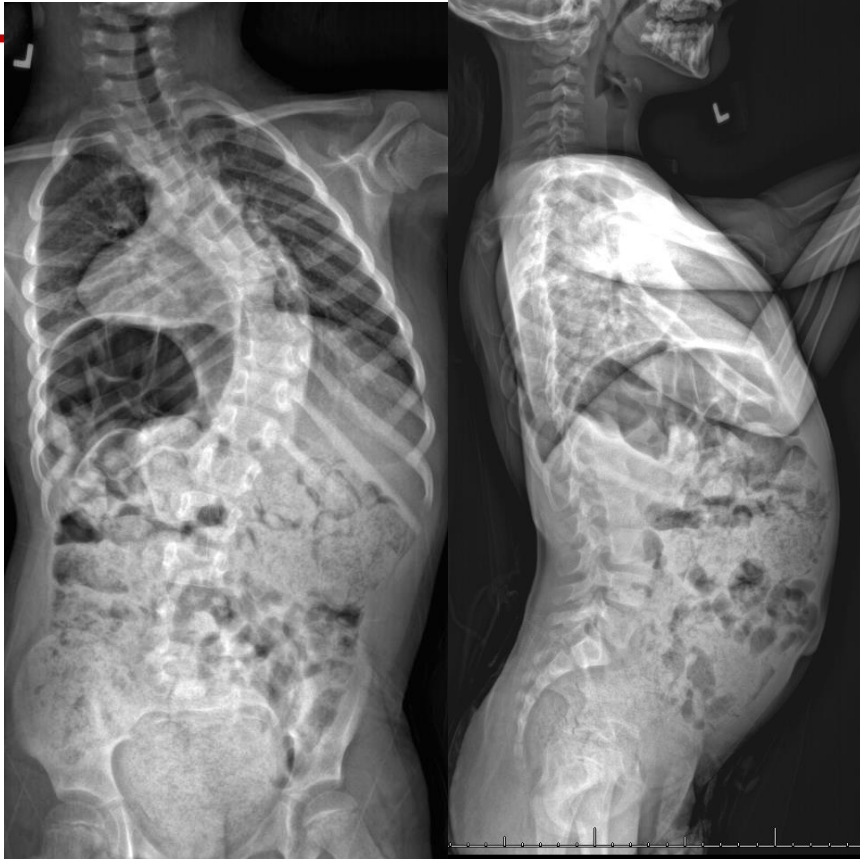


4 different treatment options

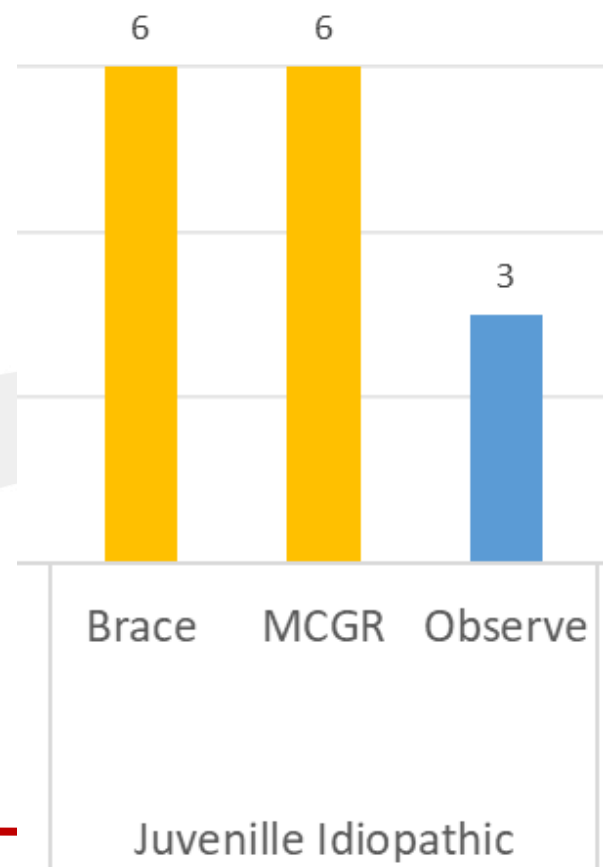


Results

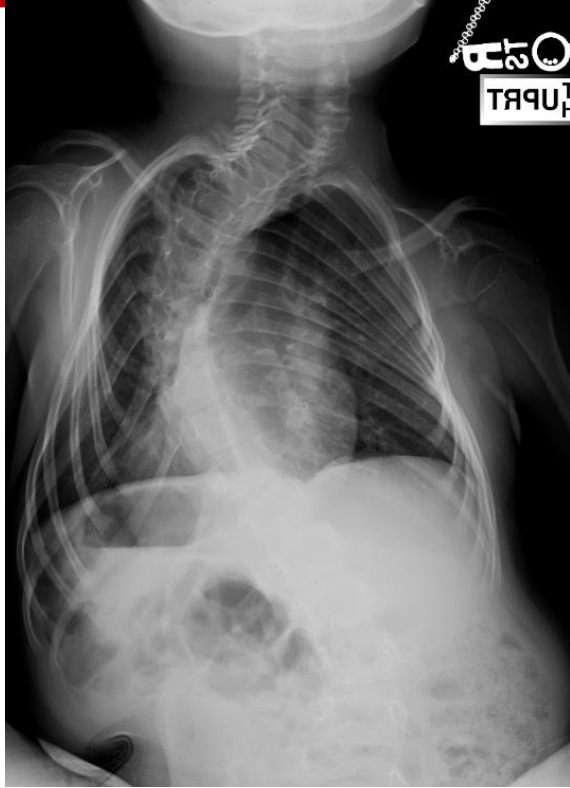
Case 3: 6/20–Brace 6/20–MCGR



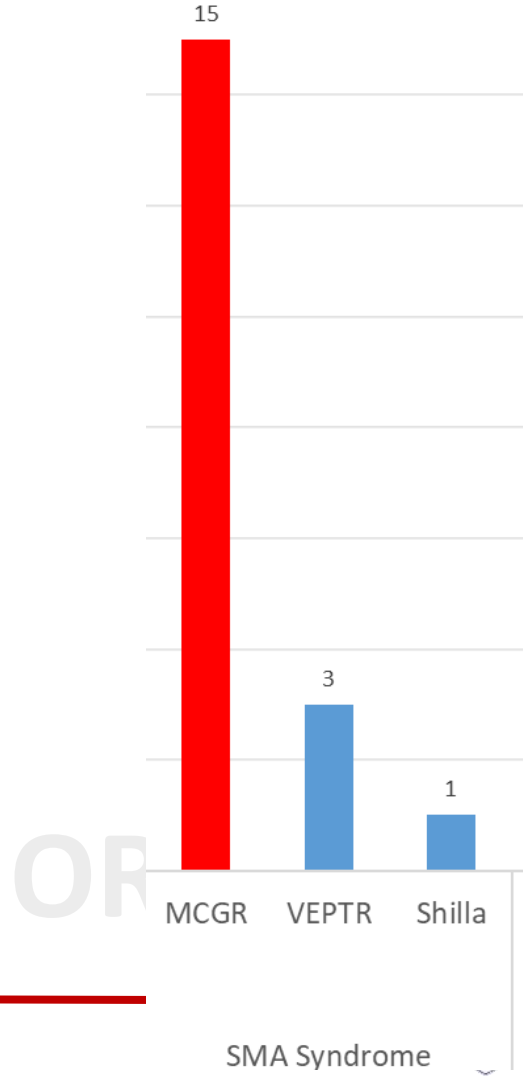
6 different treatment options



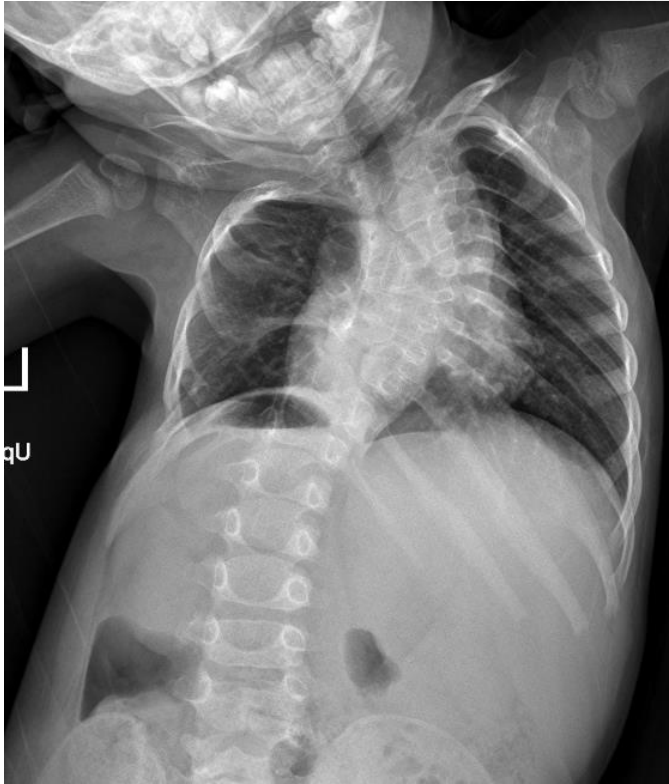
Results Case 4: 15/20 - MCGR



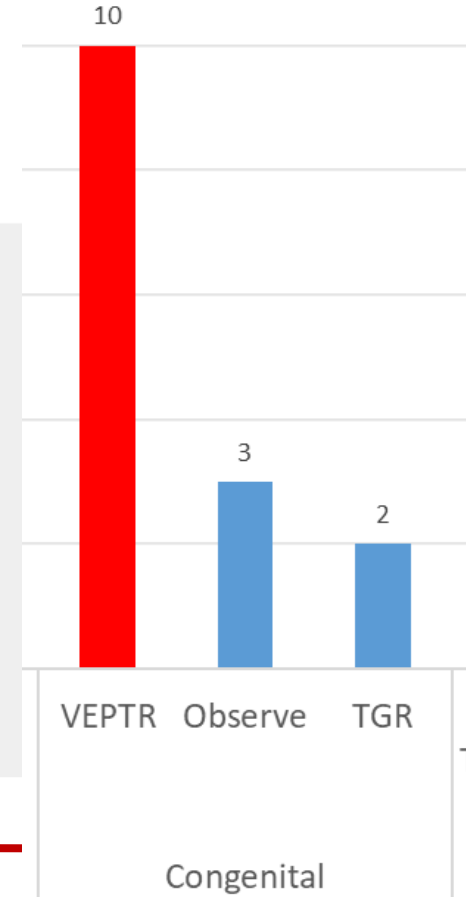
4 different treatment options



Results Case 5: 10/20 - VEPTR

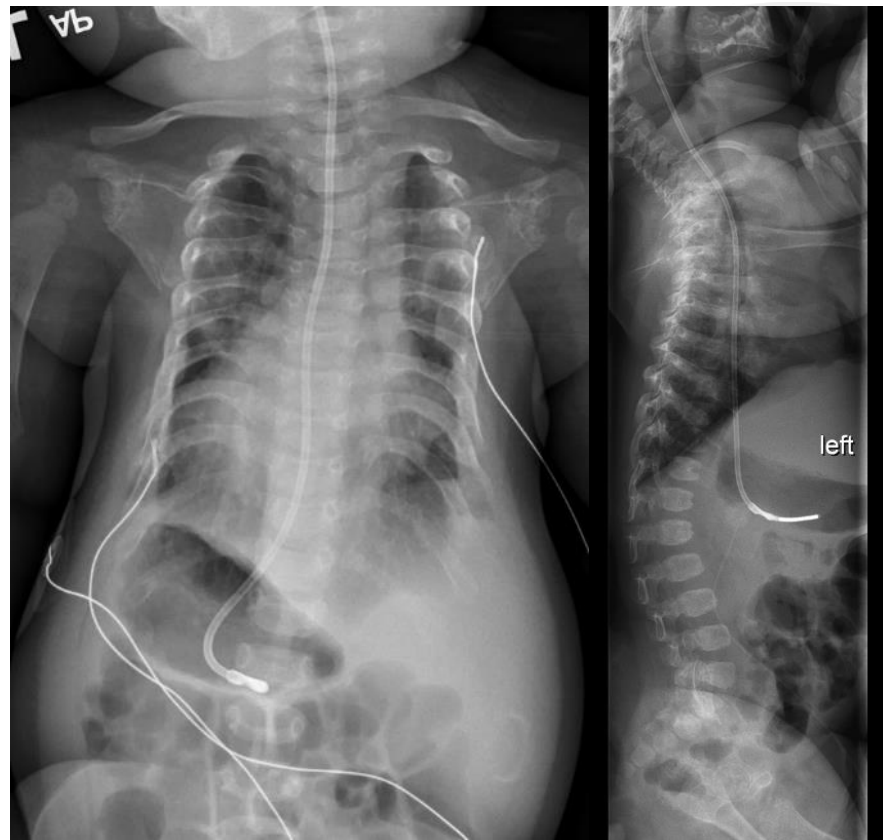


7 different treatment options

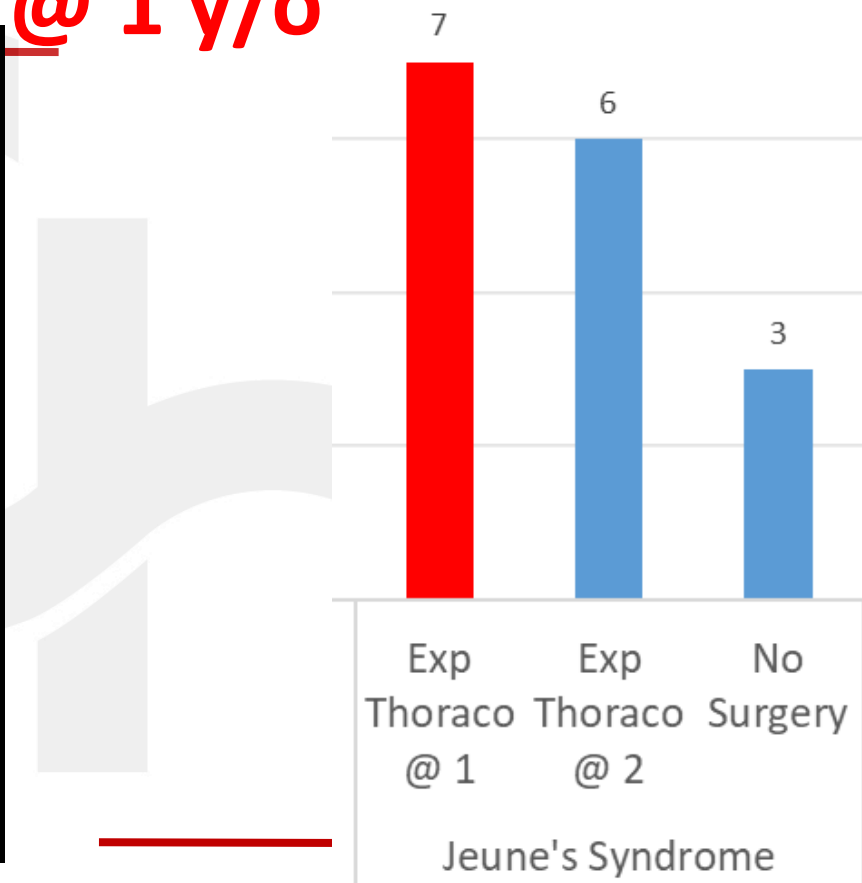


Results Case 6: 7/20 – VEPTR thoracoplasty

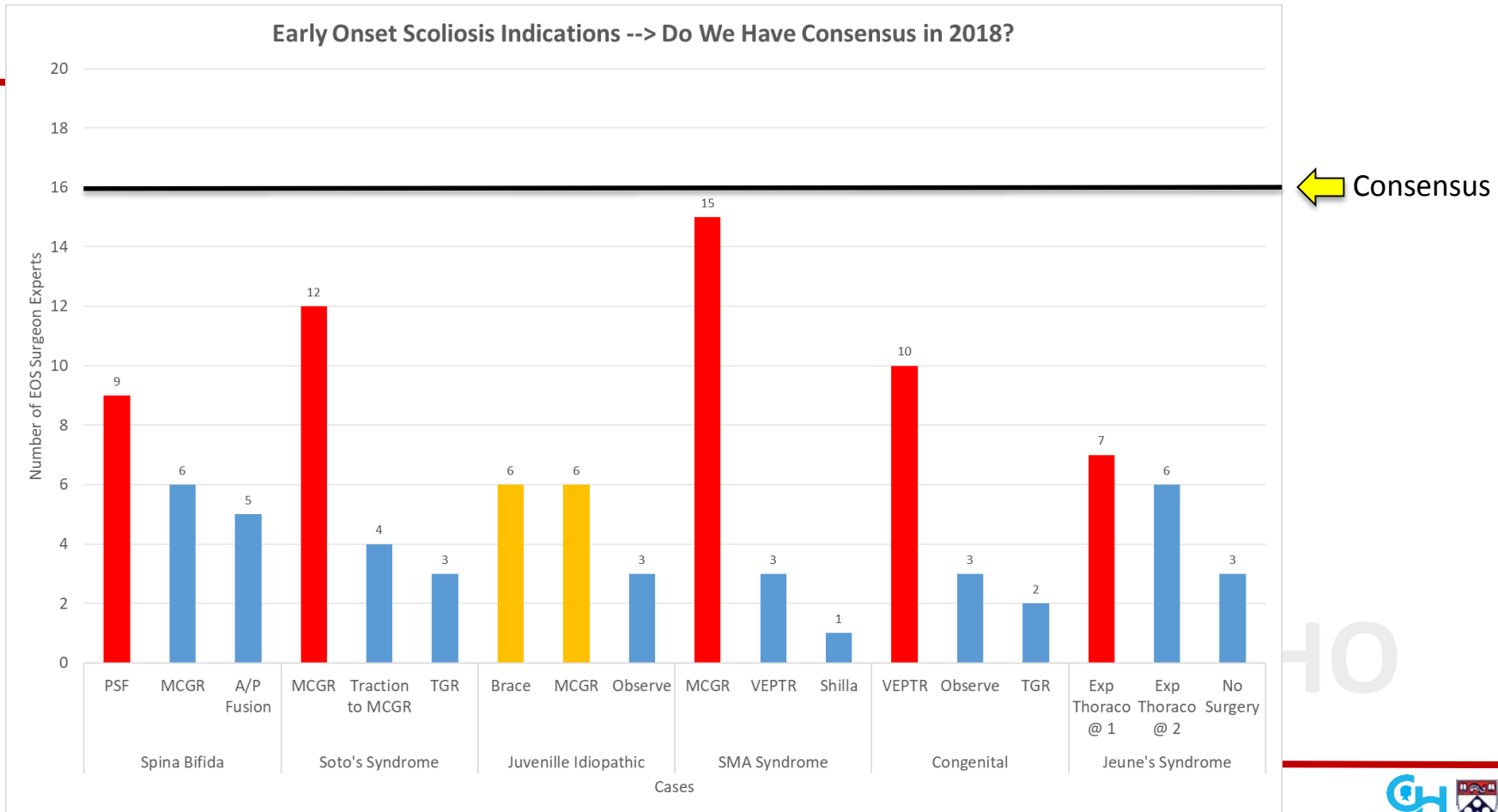
@ 1 y/o



5 different treatment options



In 2018 EOS consensus is no where to be found

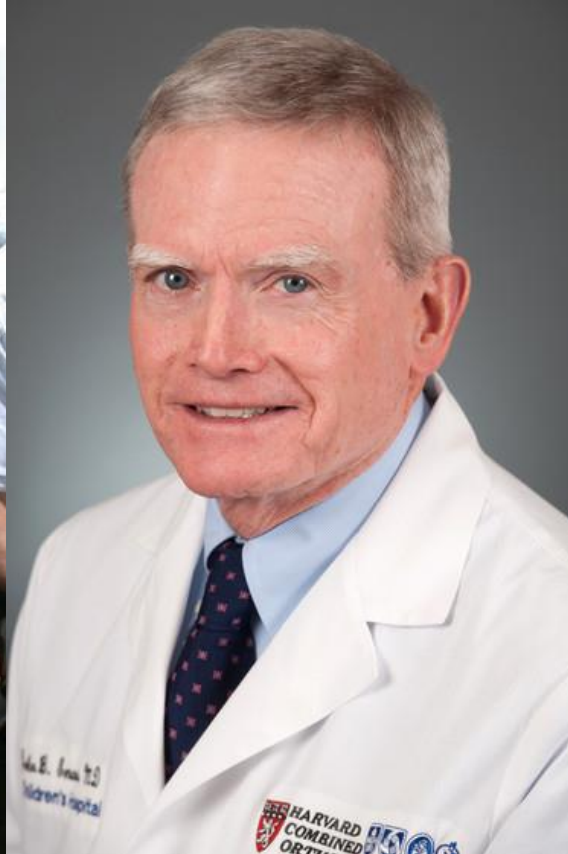


Last Question

Name the single surgeon/thought-leader, current or past, who has had the greatest impact on your decision-making for EOS:

ORTHO

Impact on Thought Leaders

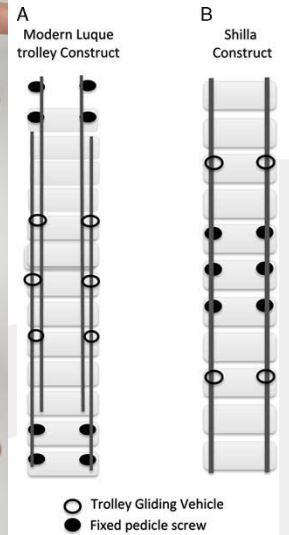
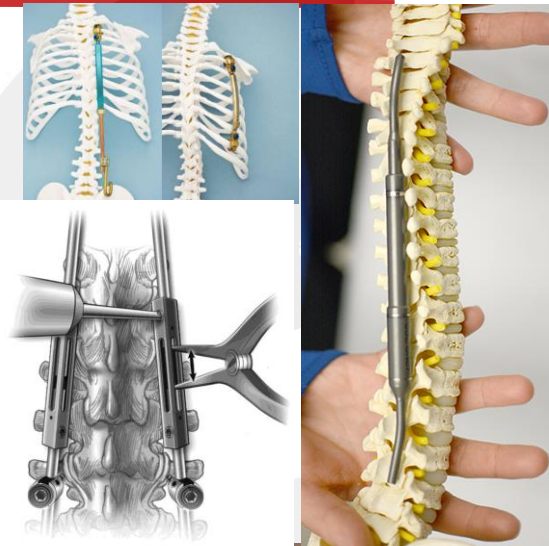


- Robert M. Campbell
- John B. Emans
- Combined: **11/20**

ORTHO

Where do we go from here

2020



S4+ → TGR

I3- → MCGR

C4N → VEPTR

S2N → Growth Guidance

I2+ → Brace

I2- → Tether??

Age	Etiology	Major Curve Angle	Kyphosis	APR Modifier
Continuous Prefix	Congenital/Structural	1: <20°	↳ <20°	P: <10°/yr
	neuroMuscular	2: 20-50°	N: 20-50°	P: 10-20°/yr
	Syndromic	3: 51-90°	(±) >50°	P: >20°/yr
	Idiopathic	4: >90°		



2015 Letter to Editor

Spine
Deformity

www.spine-deformity.org



Spine Deformity 3 (2015) 105–106

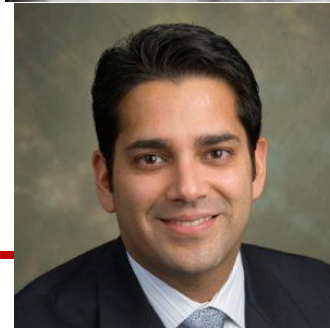
Letter to the Editor

Early Onset Scoliosis - Time for Consensus



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Thank You

