Nutritional Status: Management of the Emaciated

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Disclosures

- Up to date in Program Book
- None related to this talk
Nutritional Status:
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Our Low-BMI Poster Child
Our Low-BMI Poster Child

Meet Logan

• Presented as 1 y/o IIS @ 71°
• 4 yrs of bracing and casting
• Now 5 y/o
Meet Logan

- Presented as 1 y/o LLS @ 71°
- 4 yrs of bracing and casting
- Now 5 y/o

Recurrent respiratory infections in cast
Trouble feeding, with wt. loss
Family, medical team asks for brace
Meet Logan

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Brace: easier to feed and deal with pulm infections
Maintains curve in 60s/70s
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BMI Crashing!
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• Returned last week
  – Had Pulm eval ("hurry and fix!")
  – Nutrition eval: G-tube placed
• Ready for surgical discussion
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I’d love me some MAGIC!
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Doc, wouldn’t it be safer if you let him gain some weight?
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The Conundrum
The Conundrum

The TIS Cycle of Doom

- Delay implant/correction to gain weight
The Conundrum

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- Delay implant/correction to gain weight
- Spine deformity worsens
The Conundrum

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• Spine deformity worsens
• Thoracic insufficiency worsens
The Conundrum

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- Delay implant/correction to gain weight
- Spine deformity worsens
- Thoracic insufficiency worsens
- Work of breathing rises
The Conundrum

The TIS Cycle of Doom

• Delay implant/correction to gain weight
• Spine deformity worsens
• Thoracic insufficiency worsens
• Work of breathing rises
• Can’t gain weight
Nutritional Status:
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What do we know:
Surgery & The Emaciated
Not much evidence for us

- Bowen, et al: *JPO* 2008: Decreased pulmonary function compromise strongly correlates to low BMI in patients with congenital thoracic scoliosis
Surgery & The Emaciated

Not much evidence for us

• Bowen, et al: *JPO* 2008: Decreased pulmonary function compromise strongly correlates to low BMI in patients with congenital thoracic scoliosis
• *J Heart Lung Transplant* 2007: Decreased graft survival in low BMI heart transplant kids
• *Circulation* 2017: Both obese and underweight kids at higher risk in congenital heart surgery
• *J Heart Lung Transplant* 2015: Low body mass index is associated with increased waitlist mortality among children listed for heart transplant
Challenging data: need hts for BMI
742 procedures kids with BMI <18.5 = 73%
Most very low; no clear trend up with treatment
Surgery & The Emaciated

CHOP CTIS db (Carina Lott, et al)

• 35 kids (10 with BMI < 5%) initial VEPTR insertion

• Same complications rates low v. normal BMI
  – Skin
  – SSI
  – Anchor failure
Is HGT the cure?


• Wash U: Bogunovic Spine Deform. 2013: Preoperative Halo-Gravity Traction for Severe Pediatric Spinal Deformity: Complications, Radiographic Correction and Changes in Pulmonary Function—33pts, 19/22 with PFTs had improvement

• ~ 20 HGT papers yesterday
  – Clearly value in certain deformities
  – Some pulm. value
  – Can you wait for the weight?
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Recommendations For The Emaciated
Recommendations

Delay! (the lesson of 20 yrs as EOS Surgeon)

• “Don’t rod the baby unless they’re dying”
Recommendations

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• You get ~5 years to drive growth
  – Start @ 3y/o: ribs break, spine is autofused by 8 y/o
Recommendations

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  – Start @ 7-8 y/o: you might survive PHV
Recommendations

Delay! (the lesson of 20 yrs as EOS Surgeon)

- Exhaust casting and bracing before instrumentation
- Delay tactics may impact pulmonary and feeding
- May contribute to Cycle of Doom
- HGT may help
  - Decrease implant complications
  - Improve pulmonary function
Recommendations

Logan

• Delayed from 1 y/o → 5 y/o
• Cast and brace impacted feeding and pulm
Recommendations

Logan

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- Can’t wait any longer
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- He’ll get some MAGEC in Feb. ‘19
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Good luck, Bud!
Obrigado!