Does the Presence of a Gastrostomy Tube Improve Surgical Outcomes in Early Onset Scoliosis?

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Introduction

- Children with Early Onset Scoliosis (EOS) usually start off in poor states of health

- Vertical Expandable Prosthetic Titanium Rib (VEPTR) implants are associated with a high rate of complications
Hypothesis

• Prophylactic gastrostomy tube (G-tube) placement improves the general health of the patient and thus reduces the number of complications after VEPTR placement
Methods

- Retrospective review of all EOS patients who received a VEPTR implant
- Demographic information: Age, diagnosis, severity of deformity, height, weight, and BMI
- Determined the presence and duration of G-tube
- Tabulated major and minor complications.
- Evaluated correlation between nutritional status, presence/absence of G-tube and complication rate
Results

- 75 patients with mean of 5.9 years of follow-up
- Average age at VEPTR implant 6.6 years (range 1.3-19.3 years)
- 30 received G-tube, 45 did not.
No Association

• Having and complication and G-tube presence
  ▫ Chi$^2$ =0.843, p=0.772

• Number of complications and G-tube presence
  ▫ T-test p=0.17

• BMI change* and development of a complication
  ▫ Spearman r=0.18, p=0.122

• Cobb angle change* and development of complication

*BMI change and Cobb angle change were calculated using the measurement at time of implant and our most recent measurement for each patient.
Associations

• Fewer complications with increasing age
  ▫ Pearson Correlation $r = -0.234$
  ▫ $p = 0.0435$

• Multivariate Logistic Regression Analysis:
  ▫ Larger BMI change ($p = 0.028$) and increased age ($p = 0.024$) correlated with fewer complications
Conclusion

• We were unable to demonstrate a significant effect of G tube presence on complication presence or rate
• Patients who received G tubes may have started out more nutritionally depleted
• The study does suggest improved nutritional health (as shown by improved BMI) and increased age correlate with a reduced complication rate
Thank You!!

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