Interactive Digital Anatomy to Improve Caregiver Understanding in Aerodigestive Clinic

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Background

• It is known that parent understanding can be impaired in the emergency room because it is a fast-paced, stressful, and information-heavy clinical environment.
• Studies have shown that parent understanding in the ER can be improved through the use of simple digital resources.1
• Caregiver understanding has not been studied in the aerodigestive clinic, a clinical setting with similar characteristics to the ER.
• Recent work has focused on the need for improved caregiver understanding to provide informed consent and enhance understanding in the ER can be improved.

Aim 1: Determine if real-time anatomy resource can increase caregiver understanding of ‘triple scopes.’

Aim 2: Understand the relationship between caregiver understanding and anxiety about child’s aerodigestive medical procedures.

Project Approach

• Digital Anatomy Resource: Basic structural anatomy of the respiratory and digestive systems
• Intervention: Aero providers will each utilize the same anatomy resource while discussing ‘triple scopes’ and aerodigestive disease
• Population: Caregivers of children undergoing aerodigestive procedures through Children’s Hospital Colorado Aerodigestive Program
• Approval: ORRIRP

Methods

Pre/Post Intervention Comparison Study

Pre-Questionnaires issued: 20
Pre-Questionnaires completed: 20

Caregiver Knowledge

• Median Score: 70%
• Most commonly missed questions:
  5. Which letter points to the lowest position viewed by the upper gastrointestinal endoscopy scope?
  6. I understand the trachea and the esophagus are anatomically similar. I didn’t know the importance of understanding that for my child’s upcoming procedure.

Perceived Caregiver Understanding

• Primary outcomes:
  - Perceived caregiver understanding
  - Caregiver knowledge
• Secondary Outcome:
  - Self-reported caregiver anxiety
• Analysis: Mann-Whitney U Test

Feedback

The 3D Aero model better supports a multitude of learning styles. It is visually appealing, non-complicated, color-filled to highlight the different body structures. The online accessibility is a primary benefit.

Caregiver Knowledge Results:

- Over 50% of caregivers chose the incorrect answer for the lower positioned view.
- 28% of caregivers correctly identified the trachea, which is the breathing tube.
- 10% of caregivers answered the question without understanding the question.

Conclusions

• The current standard of care educates families enough for them to feel comfortable providing consent for their child’s upcoming procedures.
• Caregiver knowledge results reveal that there is still room to improve caregiver understanding.
• Improving caregiver understanding of aerodigestive procedures has the capacity to improve informed consent, shared decision-making and overall understanding of aerodigestive disease and therapies.
• Currently, we are assessing effectiveness of the resource after use in clinic and will perform a Mann-Whitney U test to compare median scores of families with and without the resource.

Future Work

• Track results after use of resource in clinic
• Improve utilization of resource in aerodigestive clinic
• YouTube video published for patient education

Acknowledgements

In addition to the wonderful Aerodigestive team at Children’s Colorado, I would like to thank Dr. Ernesto Salcedo, Jennifer Thurston, Dr. Carey Ott, Noah Leppek, Emily Maas, Milica Reuter, Brainza Bizanski and Avery Williams.

References