Advanced Endoscopy in Pediatric Populations

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Objectives

• Recall the indications for advanced endoscopic procedures in Pediatric populations.
• Understand the applications and limitations of advanced endoscopic treatments applied to pediatric disease states.
• Understand the role, the outcomes, and the complications associated with the use of ERCP for pediatric presentations.
• Recall the new advances in the management of Barrett’s esophagus.
• Understand the novel therapies for achalasia.
GERD SYMPTOMS IN CHILDREN

- Heartburn & regurgitation
- Apnea and/or bradycardia
- Poor appetite / weight loss / failure to thrive
- Wheezing, stridor
- Abdominal pain / chest pain
- Sore throat, hoarseness and/or laryngitis
- Water brash, cough, asthma, pneumonia


Co-Morbidities in Childhood Barrett's Esophagus
16-year-old female referred with biopsy showing Barrett esophagus.

She has a history of diaphragmatic hernia, repaired in infancy.

Persistent reflux symptoms since birth, mostly controlled on a proton pump inhibitor.

Repair of her hiatal hernia with fundoplication 2010. Subsequently no symptoms on 30mg Prevacid once daily.

Questions for Patients

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<tr>
<th>Question</th>
<th>Quoted rates</th>
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<tbody>
<tr>
<td>With GERD, what are my chances of having BE?</td>
<td>14%</td>
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<tr>
<td>NDBE, chance of progressing to adenocarcinoma?</td>
<td>0.5% per year</td>
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<tr>
<td>How often to surveil in NDBE?</td>
<td>Q3 years</td>
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<td>With HGD, what are my chances of progressing?</td>
<td>36% (8% per year)</td>
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<tr>
<td>Risk of stricture with RFA?</td>
<td>7%</td>
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<tr>
<td>Risk of mortality with esophagectomy?</td>
<td>Up to 10%</td>
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Radiofrequency ablation
POEM
Per Oral Endoscopic Myotomy
Background

• Comparatively little data regarding endoscopic retrograde cholangiopancreatography (ERCP) in the pediatric population.

• Previous studies uncontrolled data & mixed diagnostic and therapeutic indications. In current practice, ERCP is primarily a therapeutic procedure.

• Purpose - to compare procedural variables, outcomes, and complications following therapeutic ERCP in pediatric patients versus an indication-matched adult control group.
Therapeutic ERCP in Children as Compared to Indication-Matched Adult Controls - A Four-year Experience

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Methods

Case-controlled, retrospective review of therapeutic ERCP performed with adult tertiary care center. All cases were compared with an adult control group matched 1:2 on indication and ASGE grade.

Main Indications for Therapeutic ERCP

- Choledocholithiasis 26%
- Biliary Stricture 23%
- Pancreatic Indications 23%
- Post Liver Transplant Strictures 18%

Procedural Details

- Mean Procedure Duration (min) 34.1 vs. 43 (p = 0.3)
- Mean Fluoroscopy Time (min) 8.6 vs. 9.1 (p = 0.9)
- Fluoroscopy Duration (% Total Duration) 23.5 vs. 25.5 (p = 0.4)
- Cannulation Device
  - Main: TJF Q 180V, Q 160
  - Other: TJF Q 180V, Q 160
- Number of Procedures per Patient 1.85 vs. 2.3 (p = 0.2)
- Complications** 3 (8%) vs. 6 (8%) (p = 0.7)

Outcomes

- There was no significant difference in the rate or types of complications between pediatric and adult cohorts.
- Most common complication was post-ERCP pancreatitis or worsening of pre-existing pancreatitis which occurred in 2/34 (5%) children and 3/68 (4%) adults (0.07).
- Therapeutic ERCP is safe and effective in pediatric populations. Technical and clinical success were equivalent in cohorts of pediatric and indication-matched adult controls.

References


p<0.001
11 yo M presented for evaluation of a biliary stricture. H/o intermittent pruritis for two years.

H/o major traumatic ATV injury secondary to a motor cross accident, complicated by atlantooccipital dislocation and cervical spine fusion, renal injury resulting in left nephrectomy, acute pancreatitis.
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