The Functional Lumen Imaging Probe in Pediatric Esophageal Disorders

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FLIP in Pediatric Achalasia Management

- A 16 year-old was referred to CCHMC for chronic dysphagia and marked dysmotility on contrast study.
  - High resolution esophageal manometry (HREM) was performed showing aperistalsis with normal median LES integrated relaxation pressure (IRP) (Fig. 1).
  - Symptoms did not improve on bethanechol and with lifestyle modifications.
  - Contrast study repeated at her home institution suggested progression to achalasia and underwent serial pneumatic balloon dilations (PD) done locally with brief improvement. (Fig. 2).

- 2 years after her initial visit at CCHMC, she returned for evaluation of persistent dysphagia.
  - Repeat HREM was not tolerated.
  - Endoscopy with FLIP (Fig. 3) showed normal measurements at the EGJ and candida esophagitis
  - As both initial HREM and FLIP were not suggestive of achalasia, repeat PD was not performed.
  - Her symptoms resolved on antifungals and with dietary and behavioral modifications.

FLIP Challenges in Children

- A 15 year-old was referred for chronic progressive dysphagia and was diagnosed with type 1 achalasia on HREM (Fig. 4).
- Endoscopy with FLIP demonstrated normal EGJ-DI and diameter (Fig. 5).
- Pneumatic balloon dilation (PD) was still performed with subsequent EGJ-DI and diameter increase and improvement in clinical symptoms.

Background

- The functional lumen imaging probe (FLIP) uses impedance planimetry to provide data about gastrointestinal (GI) luminal wall properties, which gives additional insight into GI disease processes and potential therapeutic interventions
- Its use in the evaluation of adult GI disorders and in few pediatric GI conditions has been described in literature
- In this case series, we share our experience with FLIP in the assessment and management of various pediatric esophageal disorders at Cincinnati Children’s Hospital Medical Center (CCHMC).

Discussion

- Our experience demonstrates that FLIP can be used as a complementary tool in the assessment and management of various esophageal disorders in children despite a lack of normative pediatric values.
- In addition, we highlight important considerations when performing FLIP, such as the impact of intraoperative medications and clinical interpretation.
- There is still a need to establish normal FLIP values across the pediatric age range as well as a standardized protocol for performing FLIP in children.

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