A Case Series of Minor Esophageal Motility Disorders – Do They Matter?

Joshua R. Smith MD, Giuseppe Zambito MD, Ryan Conway MD FACS, David Scheeres MD FACS, Amy Banks-Venegoni MD FACS

Spectrum Health, Grand Rapids, MI

Spectrum Health | College of Human Medicine MICHIGAN STATE UNIVERSITY

Introduction/Significance

- Minor motility disorders of the esophagus are often missed on barium esophagram (BE) and many surgeons use BE to guide operative choice of fundoplication for anti-reflux surgery. This case series evaluates the outcomes of laparoscopic fundoplication in patients who were diagnosed with a minor esophageal motility disorder on high-resolution manometry (HRM) but had normal motility on barium esophagram (BE).

Objectives

- To evaluate the outcomes of patients undergoing fundoplication where there was discordant results between preoperative BE and HRM.

Design

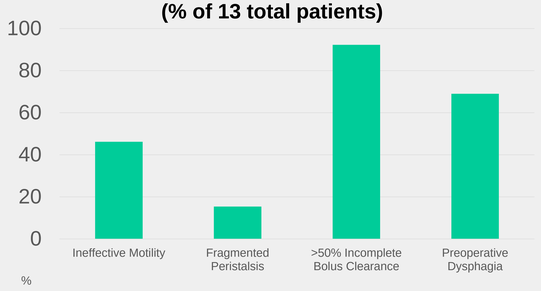
- Case Series

Methods

- This is a retrospective review of patients that underwent laparoscopic fundoplication by two surgeons at a single institution from 10/1/2015-6/29/2019.
- Patients that were found to have normal motility on pre-operative BE, but actually had a minor motility disorder on HRM were included in the study.
- A total of 13 patients met inclusion criteria out of 94 patients who underwent fundoplication during the above time period.
- Mean follow-up time was 28.4 months and median follow-up time was 27 months (Range: 2 weeks – 45 months).
- Data collected:
  - –Patient demographics
  - –BE and HRM findings

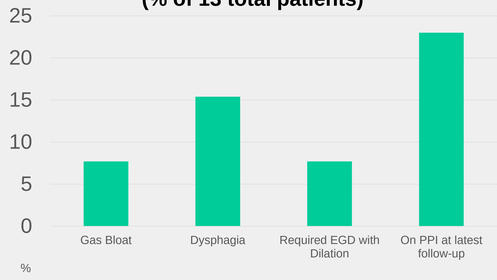
Preoperative HRM findings for patients with normal BE

(% of 13 total patients)



Postoperative results following Toupet fundoplication

(% of 13 total patients)



Results

- 13 patients met the inclusion criteria.
- 13/13 (100%) patients underwent partial fundoplication due to HRM findings.
- Minor esophageal dysmotility disorders missed by BE include: Ineffective motility in 6/13 patients (46.2%) and 2/13 (15.4%) had fragmented peristalsis.
- 12/13 patients (92.3%) had > 50% incomplete bolus clearance and 9/13 (69%) patients had pre-operative dysphagia.
- Post-operatively: 1/13 (7.7%) patients complained of post-operative gas bloat, 2/13 (15.4%) patients had post-operative dysphagia and 1/13 (7.7%) patients required post-operative therapeutic EGD with dilation.
- 2/13 (15.4%) patients required re-operation for recurrent hiatal hernias and reflux disease, not for dysphagia.
- 3/13 (23%) patients were requiring acid suppression medications at their latest follow-up.

Discussion

- All 13 patients had normal motility on BE but were found to have esophageal dysmotility by HRM. All patients underwent partial fundoplications due to the dysmotility found. Despite this, there were still post-operative symptoms related to underlying dysmotility only found on HRM. Depending on surgeon preference, all these patients might have undergone a full Nissen fundoplication based on a normal BE. Although the majority of the patients had successful acid reduction and no worsening of their dysphagia symptoms this further emphasizes the need for preoperative HRM rather than reliance on the accuracy of BE to identify minor motility disorders in patients who are to undergo an anti-reflux operation.

Conclusion

- BE alone is not adequate for diagnosis of minor esophageal motility disorders. HRM should be included in the work-up for every patient prior to performing a fundoplication.