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15. IS BARIUM ESOPHAGRAM ENOUGH TO GUIDE OPERATIVE TECHNIQUE? COMPARISON OF ESOPHAGEAL MOTILITY FOUND ON BARIUM ESOPHAGRAM TO HIGH RESOLUTION MANOMETRY?

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Background: There is considerable difference amongst surgeons in their workup for patients with GERD considering anti-reflux surgery. Four diagnostic tests used to establish the diagnosis of GERD and identify anatomic and functional deficits of the esophagus and LES include pH monitoring, EGD, barium esophagram (BE), and esophageal high-resolution manometry (HRM). Many surgeons use BE alone to evaluate esophageal motility as a guide when choosing complete vs. partial fundoplication. The aim of the study is to determine if BE alone is enough to diagnose esophageal dysmotility when compared to the gold standard of HRM.

Methods: This is a retrospective review of patients that underwent a laparoscopic fundoplication, both full or partial, by two surgeons at a single institution from 10/1/2015 - 6/29/2019. Patients without both BE and HRM were excluded from the study. All BE were read by experienced radiologists and HRM reports were blinded and read by an independent surgeon with an inter-rater reliability of 100%.

Results: There were 94 patients total, 46 of which had both BE and HRM studies to make a comparison. Patient population demographics had a mean age of 57 (SD 15.7), BMI of 28.3 (SD of 4.37) and DeMeester score of 38.9 (SD of 32). There was a female predominance of 74.4% vs. 32.6%.

Only 3 of 46 patients had dysmotility on both BE and HRM. 18 of the 46 patients had normal motility on both HRM and BE. 18 of 46 patients were found to have dysmotility on HRM however had a normal BE, and 7 patients were found to be without dysmotility on HRM but had a BE that suggested dysmotility. Setting HRM as the gold standard, BE had a sensitivity of 14.3% (CI 5.0%-34.6%), specificity of 72% (CI 52.4%-85.7%), PPV of 30% (CI 10.8%-60.3%), NPV 50% (CI 34.5%-65.6%). Accuracy was 45.7%. P value of 0.0278.

Conclusion: Selecting the optimal type of fundoplication is imperative to reduce incidence of post-operative dysphagia and gas bloat. The results of this study prove with statistical significance that barium esophagram should not be used to determine esophageal dysmotility and high-resolution manometry must be obtained to guide operative technique for anti-reflux surgery.