Endoscopic Hill grade as predictor for hiatal hernia repair during bariatric surgery

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INTRODUCTION

- Pre-operative esophagogastroduodenoscopy (EGD) is often routinely performed to identify possible medical and surgical pathology prior to bariatric surgery.
- One such potential finding is hiatal hernia.
- However, previous studies have noted that hiatal hernias are often over diagnosed on preoperative endoscopy and do not necessarily correlate with intraoperative findings. [1] [2]
- The purpose of this study is to evaluate endoscopic Hill grade as a predictor of need for hiatal hernia repair at the time of bariatric surgery.

METHODS

- A retrospective chart review of all preoperative endoscopy for planned bariatric surgery performed from June 2020 – May 2022.
  - Patients with previous bariatric surgery or hiatal hernia repair were excluded.
  - Preoperative endoscopy performed by a single surgeon.
  - Bariatric surgery performed by three different surgeons from a single bariatric institute.
- Data collected included preoperative endoscopic evaluation for presence of hiatal hernia, assessment of Hill grade, and intraoperative identification and repair of a hiatal hernia *if felt to be clinically indicate*d.

RESULTS

- A total of 593 esophagogastroduodenoscopies for planned bariatric surgeries were analyzed.
- 175 patients who underwent the planned bariatric surgery had hiatal hernias identified on preoperative endoscopy.
- Of the patients who underwent bariatric surgery, 77 (44%) necessitated hiatal hernia repair at time of bariatric surgery.

	Hiatal hernia on preoperative endoscopy	Hiatal hernia repair at time of bariatric surgery	Concordance
Hill grade I	6	0	**0%**
Hill grade II	62	22	**35.5%**
Hill grade III	87	38	**43.7%**
Hill grade IV	20	17	**85%**

Hill classification for gastroesophageal flap valve:

- *Grade I: prominent fold of tissue along lesser curve, enclosing endoscope*
- *Grade II: fold present, but periods of opening along endoscope*
- *Grade III: loose fold along endoscope*
- *Grade IV: fold is missing with opening around endoscope*

DISCUSSION

- Higher Hill grade gastroesophageal flap on pre-operative endoscopy predicted the need for intra-operative hiatal hernia repair at time of bariatric surgery.
- No hiatal hernias identified on pre-operative endoscopy with Hill grade I gastroesophageal flap required intra-operative repair
- Limitations of our study include use of a single endoscopist, variation among three surgeons regarding operable hiatal hernias

CONCLUSION

The presence of abnormal gastroesophageal flap valve (especially Hill IV) can be utilized to predict the identification of operable hiatal hernias during bariatric surgery. This allows more accurate pre-operative planning and intra-operative management.

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