

Closing the Gap: First Report of Endoscopic Suture Closure of Malignant Gastric Hemorrhage

Michael Andreone, MD, Bryant Megna MD, Nicholas McDonald, MD, Dharma Sunjaya MD, Mohammad Bilal MD

¹Department of Medicine, University of Minnesota, Minneapolis, MN, ²Department of Gastroenterology and Hepatology, Minneapolis VA Medical Center, University of Minnesota, Minneapolis, MN,

INTRODUCTION

- Gastrointestinal bleeding secondary to luminal malignancy is difficult to manage with conventional endoscopic therapies
- Endoscopic suturing devices are increasing in popularity
 - Closure of resection defects
 - Inadvertent perforations
 - Bariatric endoscopy
- There is limited data in use for refractory bleeding in peptic ulcer disease
- Herein is described a case of successful endoscopic closure of a bleeding malignant gastric ulcer using endoscopic suturing

CASE

- 60-year-old male with past medical history of primary thrombocytopenia with recent diagnosis of signet ring gastric adenocarcinoma/linitis plastica with initial presentation for hematemesis
 - T2,N2, M0
 - On FLOT therapy
- Exam
 - Tachycardia
 - Hypotension
- Labs were notable for hemoglobin of 7.8 g/dL (15.0 g/dL four days prior)
- Patient underwent endoscopy while intubated in ICU setting
 - Active oozing and bleeding from cratered gastric ulcer that was previously biopsy proven gastric adenocarcinoma on the proximal lesser curvature, approximately 20mm in size (A)
 - Diffuse thickening of gastric folds consistent with linitis plastica



Figure A: Endoscopic image of gastric adenocarcinoma and associated cratered ulcer with oozing hemorrhage

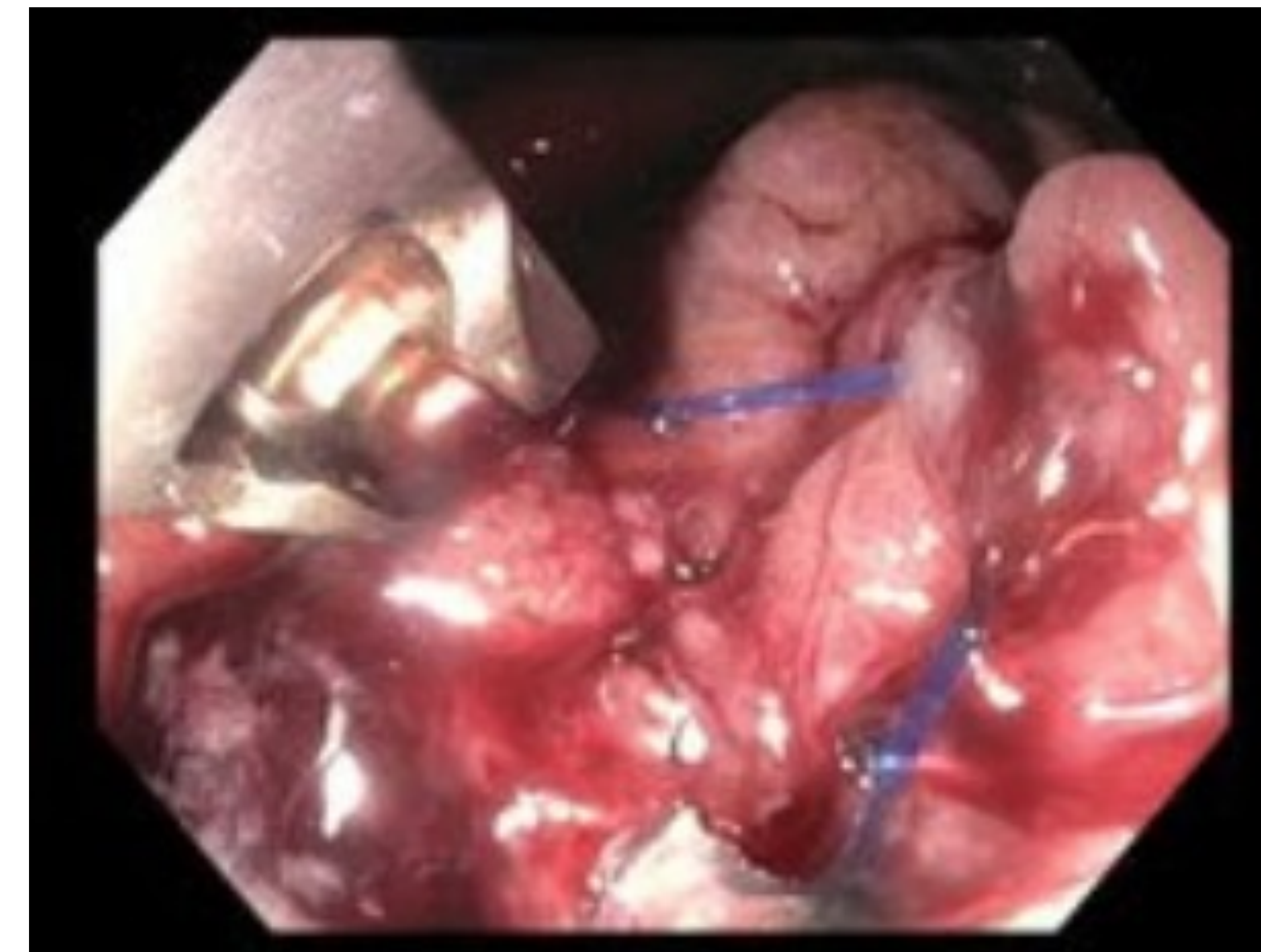


Figure B: Endoscopic suturing assisted closure

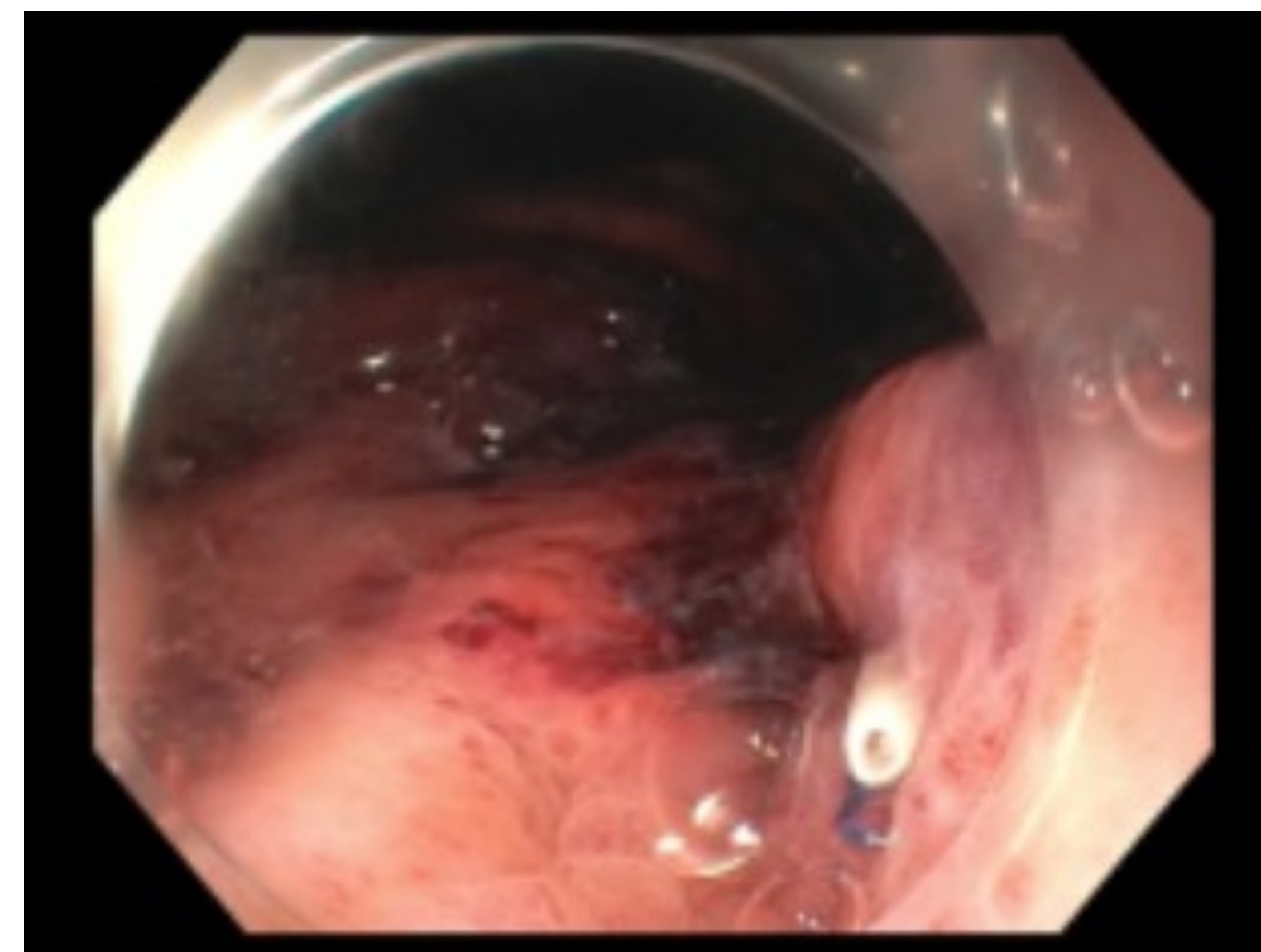


Figure C: Endoscopic image of successfully approximating edges of ulcer after endoscopic suturing without evidence of bleeding

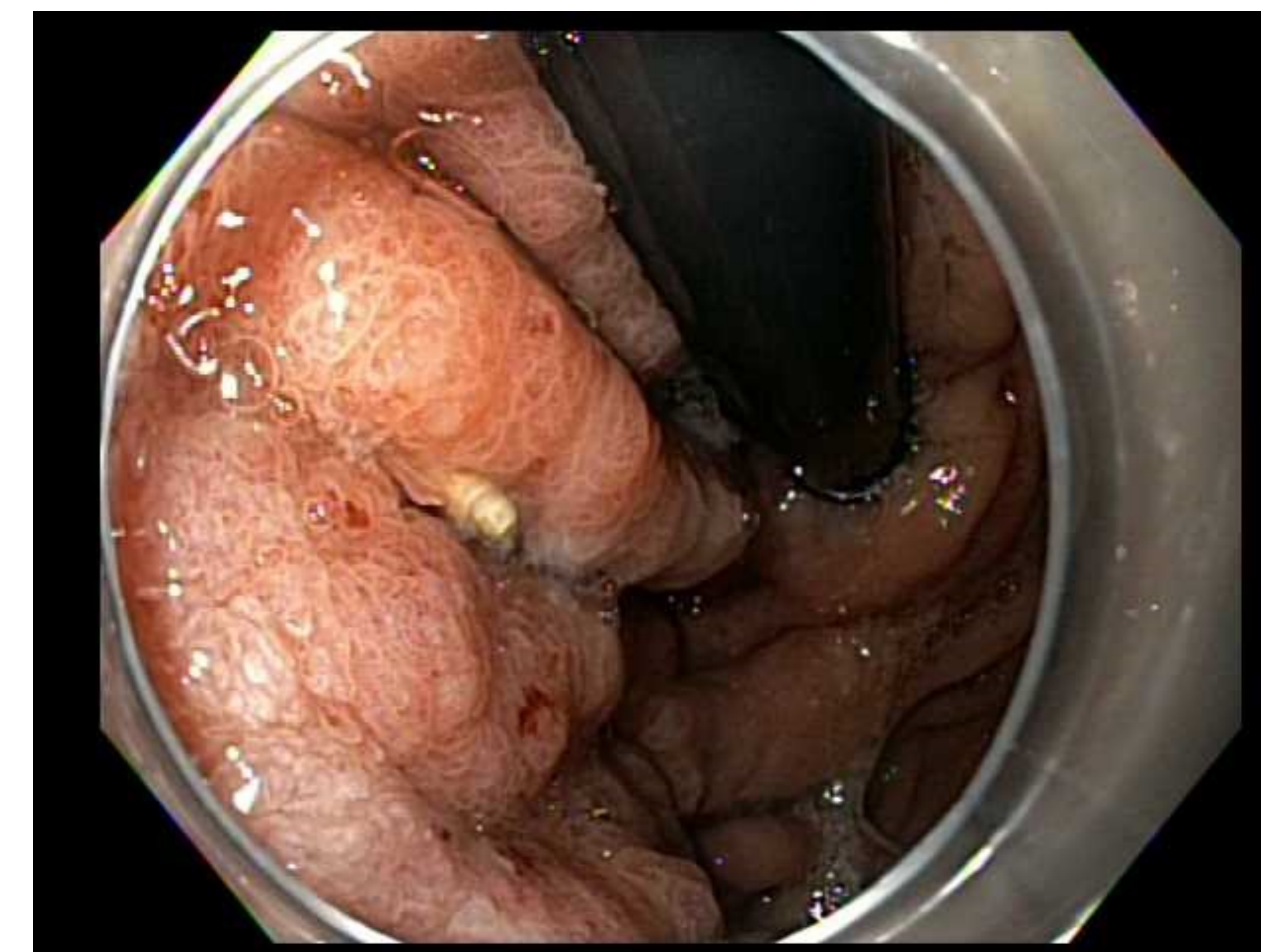


Figure D: Endoscopic image of suture cinch in place with no evidence of ulcer on 2 month follow-up

CLINICAL COURSE

- Initial attempts with bipolar cautery and epinephrine injection were unable to achieve adequate hemostasis
- Endoscopic suturing system was employed to place a suture in a figure of eight fashion and cinched at end with closure of the ulcer bed. (B)
- Hemostasis was achieved after suturing was complete and ulcer bed was no longer visible. (C)
- Repeat upper endoscopy after two months for nasojejunal feeding tube placement did not show any evidence of ulcer (D)

DISCUSSION

- To our knowledge, this is the first successful use of endoscopic suturing for closure of bleeding malignant gastric ulcer
- We hypothesize the thickened gastric folds secondary to histologic nature of linitis plastica allowed for adequate tissue purchase at margins of ulcer, hence, allowing for endoscopic suture assisted closure

REFERENCES

- Ge, P.S. and C.C. Thompson, *The Use of the Overstitch to Close Perforations and Fistulas*. *Gastrointest Endosc Clin N Am*, 2020. **30**(1): p. 147-161.
- Agarwal, A., et al., *Endoscopic suturing for management of peptic ulcer-related upper gastrointestinal bleeding: a preliminary experience*. *Endosc Int Open*, 2018. **6**(12): p. E1439-E1444.
- El-Nakeep, S. and A. Kasi, *Linitis Plastica*, in *StatPearls*. 2022: Treasure Island (FL).