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Best Practices in the Management of Non-Variceal Upper GI Bleeding

Joo Ha Hwang, MD, PhD
Director, Gastrointestinal Endoscopic Surgery
Professor of Medicine and Surgery (by courtesy)
Division of Gastroenterology

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Disclosures

- Consultant to:
  - Olympus
  - Boston Scientific
  - Medtronic
  - FujiFilm
  - MicroTech

Guidelines

Annals of Internal Medicine

CLINICAL GUIDELINE

Management of Nonvariceal Upper Gastrointestinal Bleeding: Guideline Recommendations From the International Consensus Group

Alan N. Barkun, MD; Majid Almadi, MD; Ernst J. Kuipers, MD; Loren Laine, MD; Joseph Sung, MD; Frances Tse, MD; Grigorios I. Leontiadis, MD; Neena S. Abraham, MD; Xavier Calvet, MD; Francis K.L. Chan, MD; James Douketis, MD; Robert Enns, MD; Ian M. Gralnek, MD; Vipul Jairath, MD; Dennis Jensen, MD; James Lau, MD; Gregory Y.H. Lip, MD; Romaric Loffroy, MD; Fauze Maluf-Filho, MD; Andrew C. Meltzer, MD; Nageshwar Reddy, MD; John R. Saltzman, MD; John K. Marshall, MD; and Marc Bardou, MD

Ann Intern Med. 2019;171:805-822.doi:10.7326/M19-1795.

Resuscitation, Risk Assessment, Pre-Endoscopy Management

- 2 large bore IVs (18g or larger)
- Fluids – Normal Saline or Ringers
  - No evidence to support restrictive fluid resuscitation
- Transfuse PRBCs for Hgb <8 g/dL
  - Higher threshold for patients with CV disease
- IV PPI
- Consider NG tube placement with lavage
- Glasgow Blatchford score

Glasgow Blatchford Score

- ≤ 1, very low risk, can consider discharge and outpatient EGD

Glasgow-Blatchford Score	
Blood urea nitrogen (mg/dL)	
18.2 to <22.4	2
22.4 to <28.0	3
28.0 to <70.0	4
≥70.0	6
Hemoglobin (g/dL)	
12.0 to <13.0 (men); 10.0 to <12.0 (women)	1
10.0 to <12.0 (men)	3
<10.0	6
Systolic blood pressure (mmHg)	
100–109	1
90–99	2
<90	3
Heart rate (beats per minute)	
≥100	1
Other markers	
Melena	1
Syncope	2
Hepatic disease	2
Cardiac failure	2

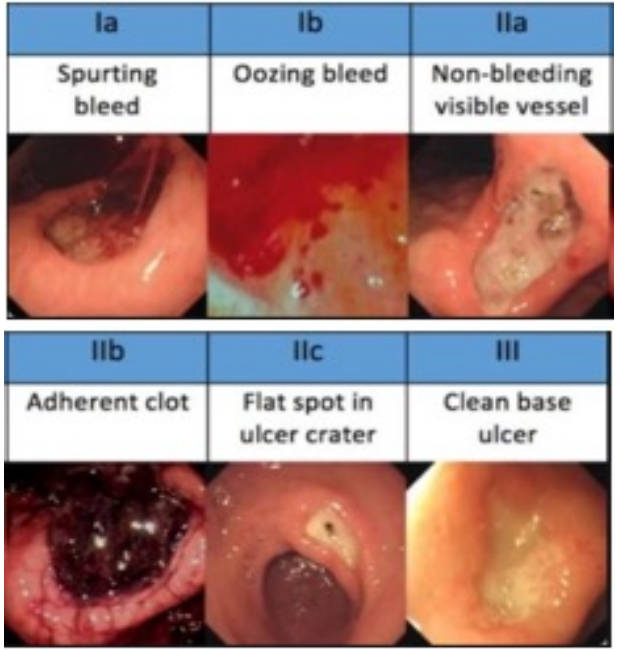
Harrisons 20th Ed.

Endoscopic Management

- Perform EGD within 24 hours of admission
- No evidence to support EGD within 12 hours
- Consider airway intubation
- Scope with therapeutic size channel (3.8 mm)

Assessing Risk of Bleeding
Forrest Classification of GI Bleeding

Endoscopic stigmata	Forrest classification	Risk of rebleeding without treatment
Spurting blood	Ia	100%
Oozing blood	Ib	30%
Visible vessel	IIa	50%
Adherent clot	IIb	30%
Pigmented spots	IIc	<8%
Clean base	III	<3%



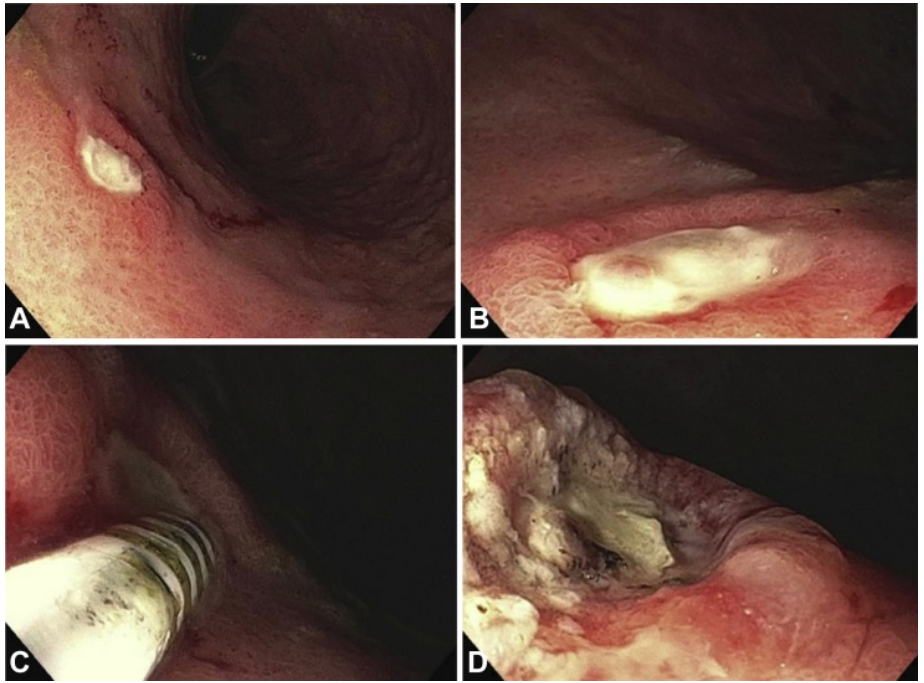
Lancet. 1974; 2:394-7 – *Acta Gastroenterol Belg*. 2011;74:45-66.

Endoscopic Hemostasis

- Bipolar probe
- Injection (sclerosant)
- Coagulation grasper
- Clips

Bipolar Probe

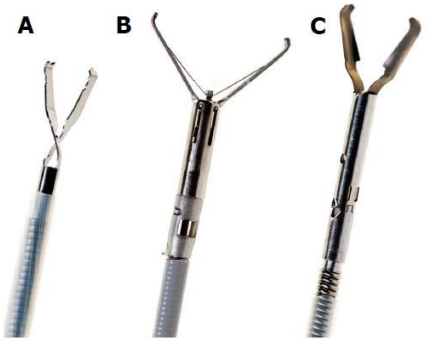
- Compress vessel prior to delivery of energy (coaptive coagulation)
- 20-25 W bipolar coagulation current

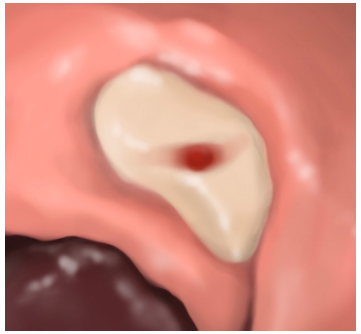


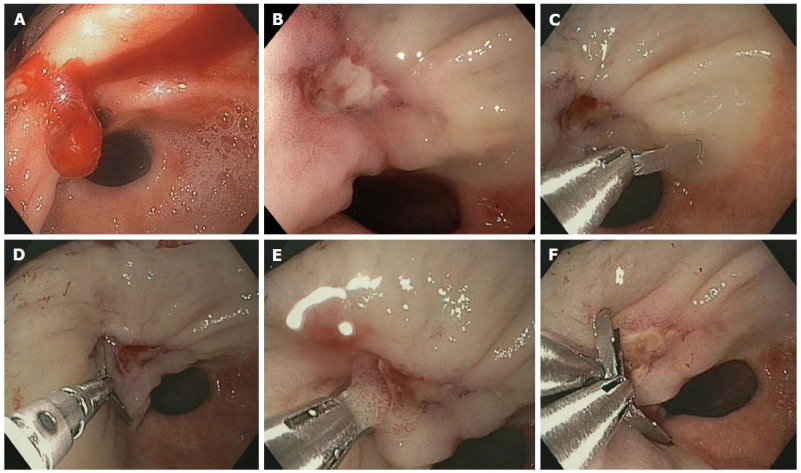
Bostonscientific.com; Gubatan et al. VideoGIE 2020.

Through-the-Scope Clips

- Mechanically coapts/ ligates vessels
- Can be difficult to place on fibrotic ulcer beds
- How to orient the clip?
- Can be combined with epinephrine injection – may distort the ulcer bed







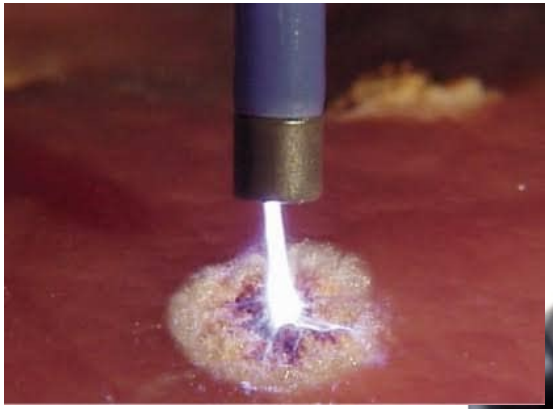
Goelder et al. *WJGE*. 2016.

Injection

- Sclerosant
  - Ethanol
  - Ethanolamine
- Epinephrine
  - 1:10,000
  - 0.5 to 2 cc within 3 mm of the vessel, 4 quadrants
  - **<u>Do not use as monotherapy</u>**

Endoscopic Hemostasis
Other Options

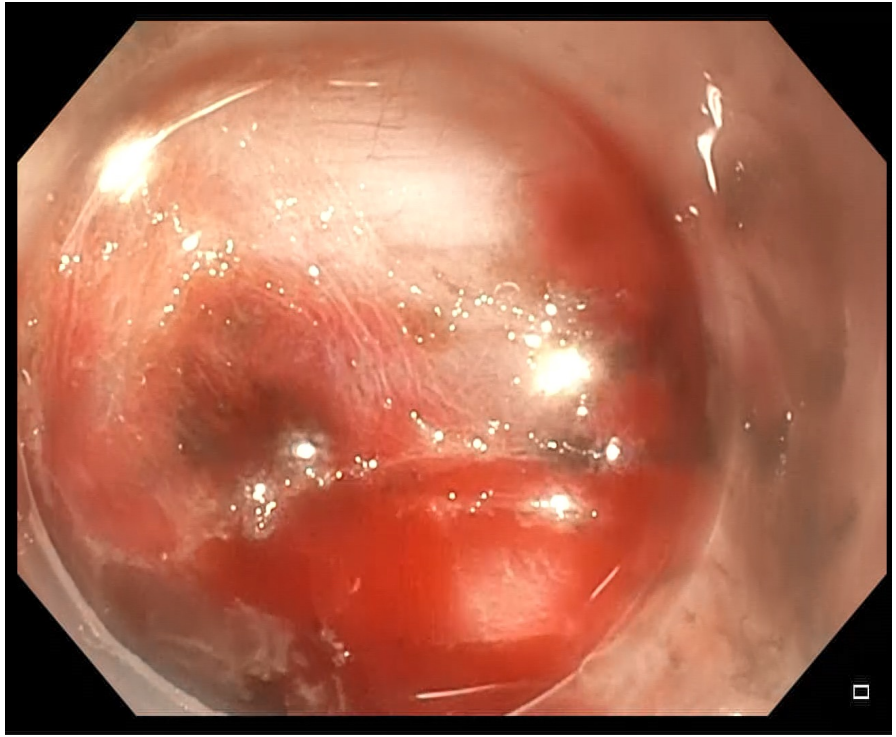
- Argon plasma coagulation
- Over-the-scope clips
- Sprays
  - Nanopowder (Hemospray)
  - Polysaccharide powder (EndoClot)



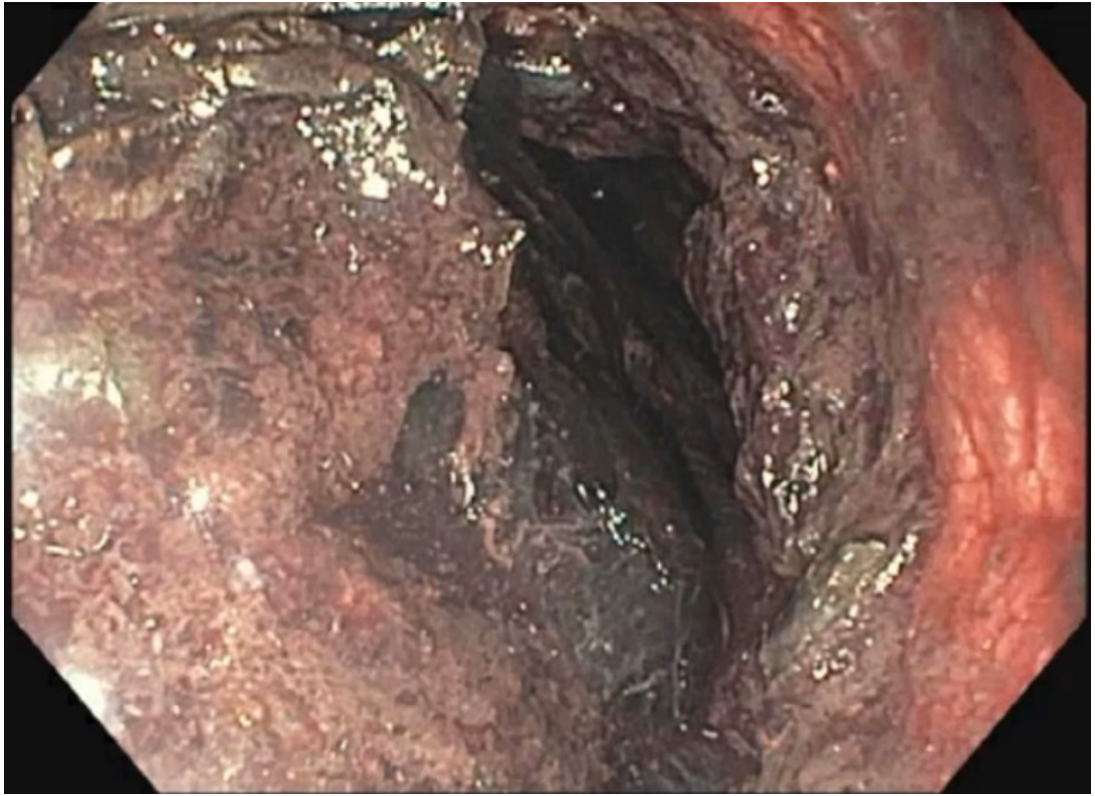
Goelder et al. *WJGE*. 2016.

Coagulation Graspers

- Monopolar device
- Requires return electrode (grounding pad)
- Soft Coag setting (60-80 W)
- Use of a clear plastic clip can be helpful!



What Do I Do Now???

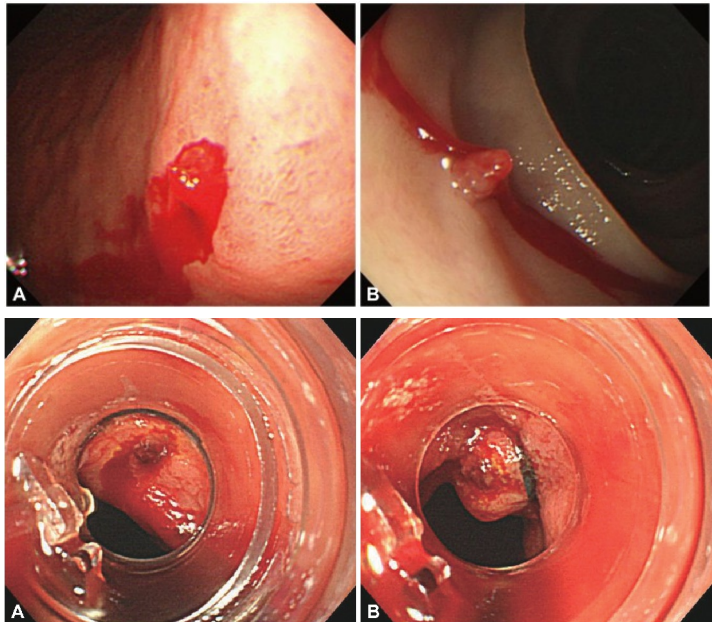


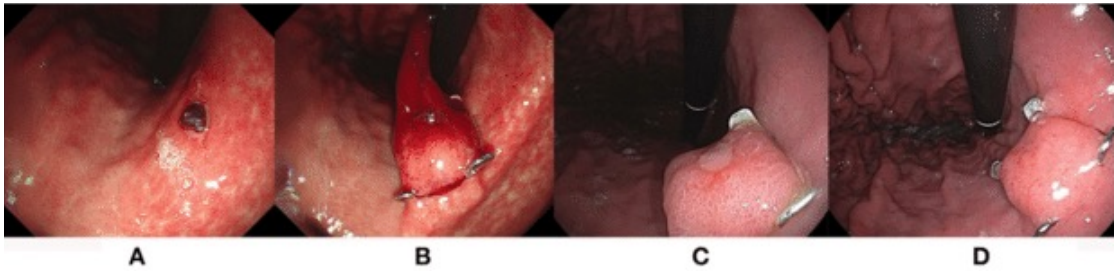
PPI Therapy

- If a high-risk lesion is identified and treated:
  - High-dose IV bolus (pantoprazole 80 mg)
  - IV gtt (pantoprazole 8 mg/hr)
  - 72 hour administration
- If low-risk lesion is identified:
  - Lower dose PPI without gtt

Dieulafoy Lesions

- Band ligation
- OTSC
- TTS Clips

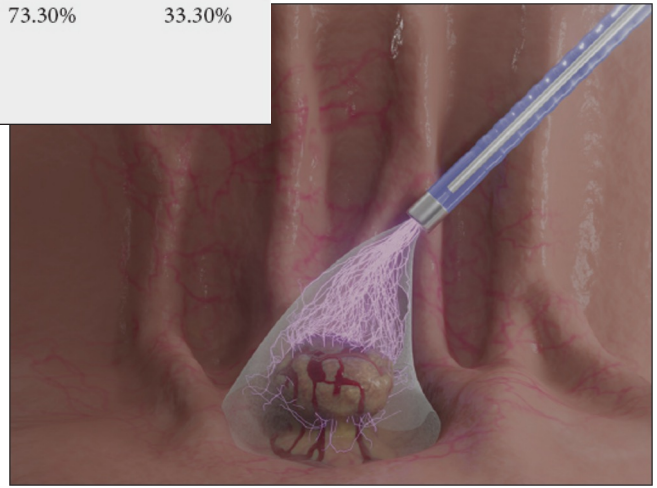




Qui et al. *Frontiers in Medicine*. 2020; Jeon et al. *Clinical Endoscopy*. 2015.

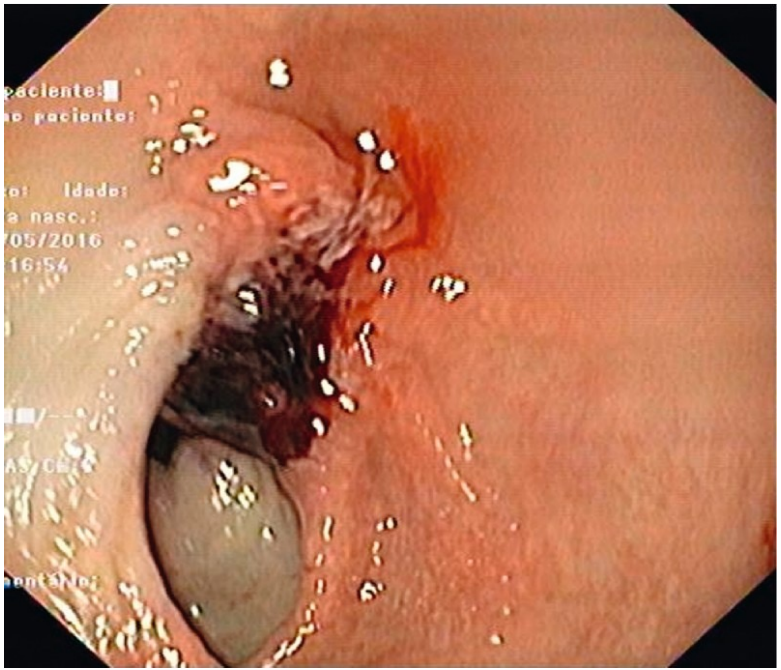
Gastrointestinal Tumor Bleeding
Argon Plasma Coagulation

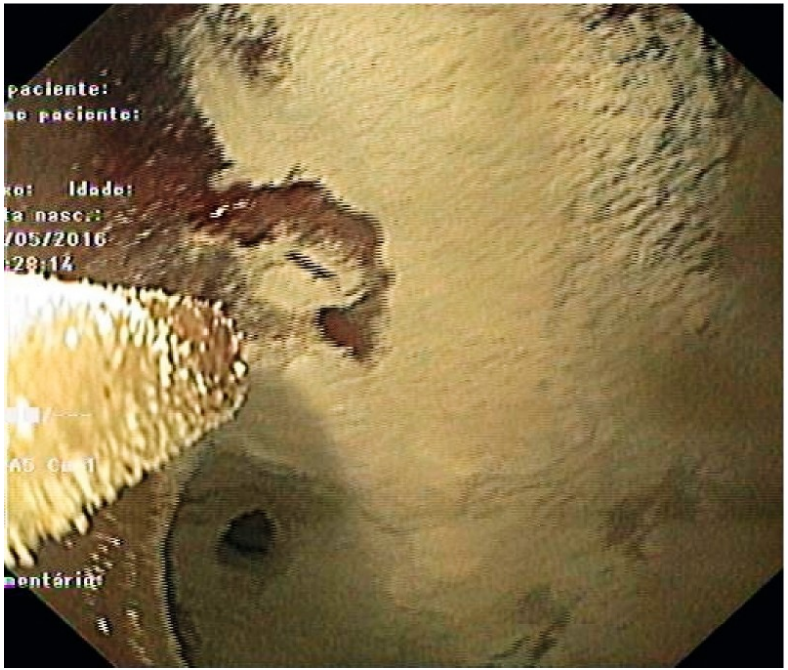
Study	Year	Patients	Site of lesion	Procedure	APC settings	Initial Hemostasis	Rebleeding
Akhtar *et al* [20]	2000	3	Upper (100%)	APC (100%)	70 W, 2.0 L/min (All lesions)	60% Complete 40% Partial	Unknown
Thosani *et al* [21]	2014	10	Upper (80%) Lower (20%)	APC (80%) APC+Epinephrine (20%)	35 W, 1.0 L/min (All lesions)	100%	33%
Martins *et al* [22]	2016	25	Upper (100%)	APC (100%)	60–70W, 1.5–2.0L/min (esophageal/gastric lesions) 40–50W, 1.5L/ min (duodenal lesions)	73.30%	33.30%



Ofosu et al. *Ann Gastroenterol*. 2019; 32 (4): 346-351.

Gastrointestinal Tumor Bleeding
Hemostatic Spray





Xavier et al. *Endosc Int Open*. 2016 Dec; 4(12): E1331–E1332.

Conclusions

- Resuscitate
- IV PPI bolus
- Consider NG tube
- EGD within 24 hours
- Endoscopic treatment of high-risk lesions (Forrest Ia, Ib, IIa, IIb)
  - First line: Thermal coagulation (BiCAP), TTS clips
  - No monotherapy with epinephrine injection
  - Second line: sprays, APC, OTSC
- PPI gtt for 72 hours if high-risk lesion is identified and treated
- Think sprays for active bleeding not responsive to standard therapy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