



New Techniques in Treating GI Bleeding


Jun Haeng Lee
Department of Medicine Sungkyunkwan University
Samsung Medical Center, Seoul, Korea

The 2nd Meeting of the Society of GI Intervention, Asan Medical Center, 2008-10-10

Contents

- with an emphasis on peptic ulcer bleeding

- Incidence and cause of death
- Acid suppression
- Endoscopic hemostasis
- Prediction of rebleeding and death
- Second look endoscopy
- New (emerging) kinds of upper GI bleedings



Incidence of Peptic Ulcer Bleeding and Cause of Death is Changing

Jun Haeng Lee
Department of Medicine Sungkyunkwan University
Samsung Medical Center, Seoul, Korea

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Decline of incidence and mortality of peptic ulcer bleeding


- A Population-Based Study in the Treviso Area (North-East Italy)
- From 1983-85 to 2002-04, the annual incidence **decreased from 66.5 to 47.6 per 100,000 persons**, corresponding to a 41.6% decrease after adjustment for age (95% CI 27.2-56.0%), and this decline refers both to duodenal ulcer (37.3% decrease) and gastric ulcer (43.7% decrease), but **only in patients under 70 years**.
- **The number of in-hospital patients increased** from 9.8% to 14.7% (p=0.06) and the mean age from 59.3 to 68.0 years (p<0.001).

Laperfido, DDW-2008 #435

Cause of death in peptic ulcer bleeding

- Study of a cohort of 10,451 cases
- In the period of 13 years, 18,582 cases of UGIB were admitted to the Prince of Wales Hospital, among them 10,451 confirmed to have PUB and 460 (4.4%) patients with PUB died.
- **There were significant more patients died of non-ulcer bleeding causes (77.6%) than bleeding causes (22.4%).**
- Optimization of therapy in these patients should **aim at reducing the risk of multi-organ failure and cardiopulmonary death** instead of focusing merely on successful hemostasis.

Sung, DDW-2008 #436



Acid suppression

Jun Haeng Lee
Department of Medicine Sungkyunkwan University
Samsung Medical Center, Seoul, Korea

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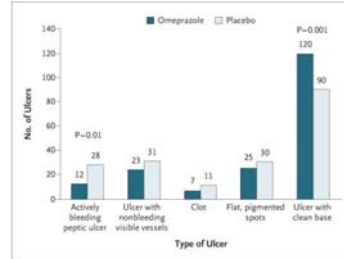
No new drug category after PPI, the standard acid suppressing agent

Table 3. History of treatment for gastroduodenal disease.

Treatment	Date
Surgery	Late nineteenth and twentieth centuries
Drug therapy	
Antacids	1910
Sulfonamides	1960
Carbenoxolone	1962
Bismuth	1940 and 1968
H ₂ receptor antagonists	1972
Proton pump inhibitors	1984
Dual therapy (amoxicillin and omeprazole)	1989
Triple therapy	1993

O'Morain BPSG 2007;21:335-346

High-dose omeprazole before endoscopy accelerates the resolution of signs of bleeding and reduces the need for endoscopic therapy



Lau. NEJM 2007;356:1631-1640

Timetable for bleeding gastric ulcer

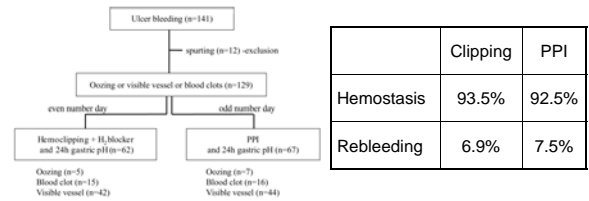


- 1 Initial EGD +/- endoscopic treatment
- 2 Follow-up EGD with biopsies for histology and *H. pylori*
- 3 Follow-up EGD with histology and *H. pylori*
- 4 PPI (starting before endoscopic treatment) → oral
- 5 *H. pylori* eradication treatment (prn)

Dig Dis Sci (2007) 52:3371-3376
DOI 10.1007/s10629-007-9814-4

ORIGINAL PAPER
Oral Proton Pump Inhibitors Are as Effective as Endoscopic Treatment for Bleeding Peptic Ulcer: A Prospective, Randomized, Controlled Trial

Jin Il Kim · Dae Young Cheung · Se Hyun Cho · Soo-Heon Park · Joon-Yeol Han · Jae Kwang Kim · Sok Won Han · Kyu Yong Choi · In Sik Chung



Kim. Dig Dis Sci. 2007;52:3371-3376

Endoscopic Hemostasis

Jun Haeng Lee
Department of Medicine Sungkyunkwan University
Samsung Medical Center, Seoul, Korea

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Methods of endoscopic hemostasis

- Electrocauterization
 - Bipolar catheter
 - Heat probe
 - Hot biopsy forcep
- Epinephrine injection treatment
- **Endoscopic clipping**
- APC
- Thrombin
- ALTO spray, Ulcermin spray
- Surgery

Pre-loaded clip

- Quickclip® & Quickclip-2®(Olympus)



1. EXPOSING THE CLIP



Removing the red stopper and pulling the yellow cylinder back exposes the clip.

2. OPENING THE CLIP WIDE



Pulling slowly the slider back to the thumb ring opens the clip to maximum width.

3. DEPLOYING THE CLIP

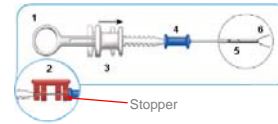


Pressing the clip against the lesion, applying suction, and quickly pulling the slider back closes the clip and deploys it.

Raju GS. GE 2004;59:267-279

Reopenable Clip

- Resolution™ (Boston Scientific)



11 mm-wide jaw clip

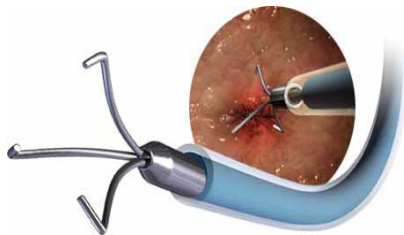


Reopening capability
(up to 5 times)

www.bostonscientific.com

Three-prongs clip preloaded on catheter with a disposable handle

- TriClip (Cook Endoscopy Inc)



➤ Despite the advancement in the clip design, it is still uncertain whether patients are treated better with these new and expansive clips.

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Endoscopic Hemoclip versus Triclip Placement in Patients With High-Risk Peptic Ulcer Bleeding

Hwai-Jeng Lin, M.D., F.A.C.G.,¹ Wen-Ching Lo, M.D.,² Yang-Chih Cheng, M.D.,¹ and Chin-Lin Perng, M.D., F.A.C.G.³

¹Division of Gastroenterology, Department of Medicine, VGH-TAIPEI, Taiwan, R.O.C. and School of Medicine, National Yang-Ming University, Taiwan, R.O.C.; ²Taipei City Hospital, Zhongxiao Branch, Taiwan, R.O.C.; and ³I-Lan Hospital, Department of Health, and School of Medicine, National Yang-Ming University, Taiwan, R.O.C.



Table 2. Clinical Outcomes for the Triclip and the Hemoclip Groups

	Triclip (N = 50)	Hemoclip (N = 50)	P Value
Initial hemostasis	38	47	0.011
Recurrent bleeding	11	7	0.1625
Volume of blood transfusion (mean, mL)	1821	1576	0.137
Emergency surgery	2	1	0.5
Hospital stay (mean, days)	8.2	8.4	0.1
Mortality	2	0	0.247

Prediction of Various Scores for Upper GI bleeding

Jun Haeng Lee
Department of Medicine Sungkyunkwan University
Samsung Medical Center, Seoul, Korea

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Samsung Medical Center experience

- Study period: June 2003 – August 2004
- Patients (n=239): nonvariceal upper GI bleeding, endoscopically confirmed
- Comparison of 5 bleeding scores
 - Forrest classification
 - Rockall score (1996)
 - Cedars-Sinai Medical Center score (1996)
 - Blatchford score (2000)
 - Baylor score (1993)

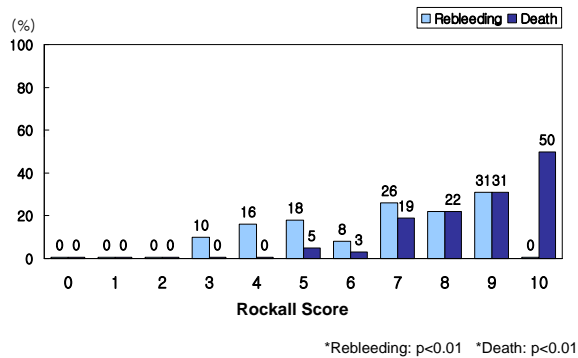
Clinical characteristics

Number of patients	239
Initial bleeding in the hospital	22 (9.2%)
Cause of bleeding	
Gastric ulcer	107 (44.8%)
Duodenal ulcer	47 (19.7%)
Upper GI malignancy	41 (17.2%)
Mallory-Weiss	10 (4.2%)
Vascular malformation	7 (2.9%)
Esophagitis	7 (2.9%)
Others	20 (8.4%)
Active bleeding during endoscopy	85 (35.6%)
Exposed vessel	41 (17.6%)
Endoscopic treatment	135 (56.5%)
Rebleeding	35 (14.6%)
Death	20 (8.4%)

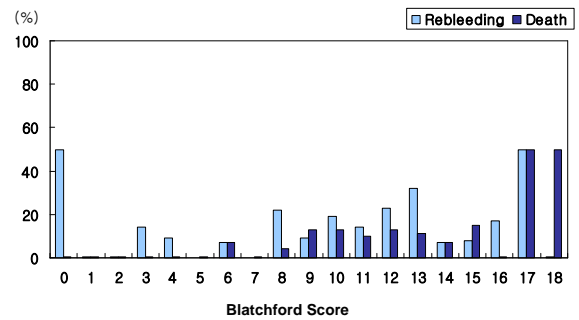
Comparison between patients who died and patients who survived

	Died (n=20)	Survived (n=219)	p value
Old (age>65) : young	8 (40) : 12 (60)	77 (35) : 142 (65)	NS
M:F ratio	14 (70) : 6 (30)	177 (81) : 42 (19)	NS
NSAIDs use	1 (5)	12 (5)	NS
Coexistent disease	18 (90)	101 (46)	< 0.01
Initial Hb <10 g/dL	14 (70)	139 (64)	NS
Systolic BP <100 mmHg	10 (50)	48 (22)	< 0.01
Endoscopic procedure	14 (10)	121 (90)	NS
In-hospital bleeding	6 (30)	16 (7)	< 0.01
Rebleeding	7 (35)	28 (13)	< 0.01

Rockall score was useful for the prediction of rebleeding and death



Blatchford score was useful to predict the mortality but not satisfactory for rebleeding

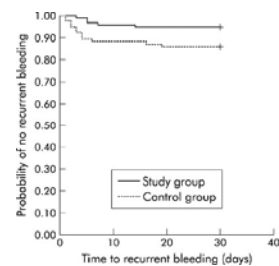


Is Second-look Endoscopy Necessary for All Patients?

Jun Haeng Lee
Department of Medicine Sungkyunkwan University
Samsung Medical Center, Seoul, Korea

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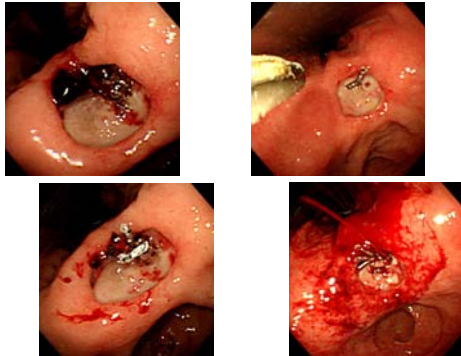
Second-look endoscopy after initial endoscopic hemostasis



194 patients with active bleeding, visible vessel, or adherent clot were randomized after epinephrine injection and heat probe coagulation.

Chiu PWY. Gut 2003;52:1403-1407

Surgery due to uncontrolled bleeding during the second look endoscopy



The Effect of Second Look Endoscopy in Patients with Peptic Ulcer Bleeding

Seung Yup Lee, M.D.*, Ji Hyun Park, M.D., Jong Hyup Lee, M.D., Se Hwan Kim, M.D.*, Chang Keun Park, M.D.*, Chang Min Cho, M.D., Won Young Tak, M.D., Young Oh Kweon, M.D., Sung Kook Kim, M.D. and Yong Hwan Choi, M.D.

Department of Internal Medicine, Kyungpook National University College of Medicine, *Fatima Hospital, Daegu, Korea

Table 2. Comparison of the Outcome between the Study and Control Group

Outcome	Study group (n=70)	Control group (n=71)	Relative risk (95% CI)	p value
Recurrent bleeding	7 (10.0%)	10 (14.1%)	0.61 (0.25-1.46)	NS
Successful retreatment after recurrent bleeding	6 (85.7%)	8 (80.0%)	1.03 (0.69-1.53)	NS
Hospital stay (days)				0.015
Median	5	7		
Range	3-8	5-11		
Units of blood transfused*	3.6±2.1	3.4±1.6		NS
Death during hospitalization	1 (1.4%)	1 (1.4%)	1.04 (0.07-16.35)	NS

CI, confidence interval; NS, not significant.
*Mean±SD.

♣ Scheduled second look endoscopy with retreatment did not reduce the risk of recurrent bleeding for patients with peptic ulcer bleeding.


Lee SY. Korean J Gastrointest Endosc 2007;34:304-311

Management of acute peptic ulcer bleeding

- A nationwide Canadian survey

- Many gastroenterologists (57%) do not perform routine relook endoscopy on high risk ulcers, but 12.5% do routinely, and 24% do only if there are high risk comorbidities.

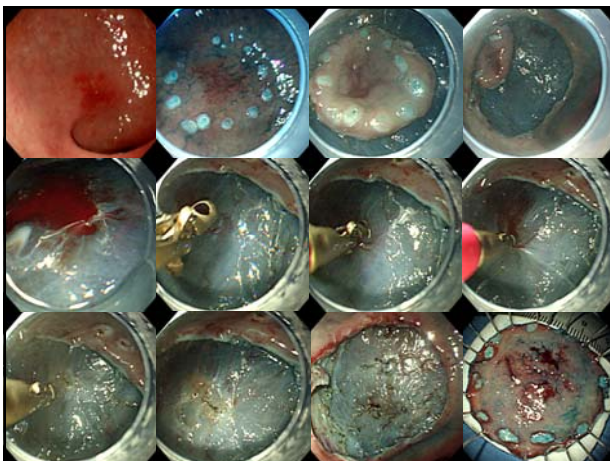
Cheung, DDW-2008 #1464



New (Emerging) Kinds of Upper GI Bleeding

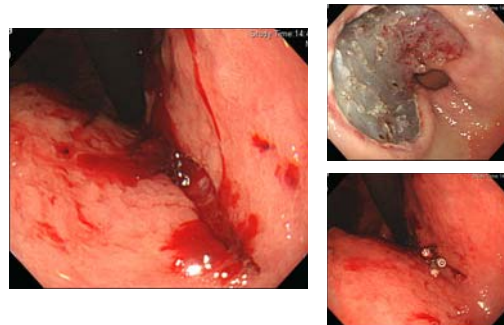
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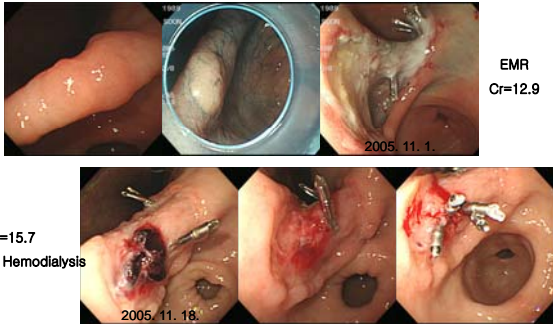


Long laceration during ESD

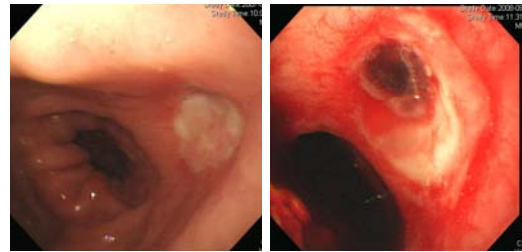
- severe belching during the procedure



Bleeding during the first hemodialysis using heparin after EMR for adenoma



Bleeding from intrathoracic stomach after Ivor Lewis operation for esophageal cancer



Take-home messages

- The incidence of peptic ulcer bleeding is decreasing, but the new kinds of treatment-related bleeding are emerging.
- Despite of the new devices, the basic techniques of endoscopic hemostasis are not changing.
- There have been a significant developments in the methods of medical acid suppression.
- Second-look endoscopy after initial successful hemostasis may not be necessary.

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Thank you for your attention.

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