ACUTE GASTRO-INTESTINAL HAEMORRHAGE

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Learning Objectives

- Identify most common causes of GI haemorrhage
- Describe Medical, endoscopic and surgical treatment of acute non-variceal haemorrhage
- Manage variceal haemorrhage
- Discuss common causes and management of severe lower GI hge (haematochezia)

UPPER GI HAEMORRHAGE

NON-VARICEAL

ACUTE NVGI HAEMORRHAGE

- Mortality rate varies between 3.5 and 14 %

- persistent despite advances in surgery in last 20 yrs

Bleeding from Peptic Ulceration

- Early 30s – mortality 25%
- 40s- introduction of active transfusion – mortality 14%
- 60s- aggressive surgery – mortality 8.6%
- 90s – bleeding unit – mortality 4.1%

Studies from Aberdeen

Why no change in mortality?

- Steady increase in age
  - 40s 29% over 60
  - 60s 49% over 60
  - 90s 55% over 60 37% over 70 19% over 80
- Increase in NSAID use
  - 60s 28%
  - 90s 46%

Risk factors

- Age over 65
- NSAIDs
- History of peptic ulcer disease
- Steroids
- Cardiovascular disease
- Warfarin
- H. pylori is not an independent risk factor

Potential problems

- Further haemorrhage
  - Continuing blood loss in a 1/3 of pts
  - Re-bleed
- Early endoscopy and surgical input identifies the high risk groups

  gives better prognosis

Potential problems

- Certain causes of bleeding have inherently poor prognosis
  - Variceal bleeding— 40 % mortality
  - Tumours
  - Bleeding after admissions for other problems 8x greater mortality

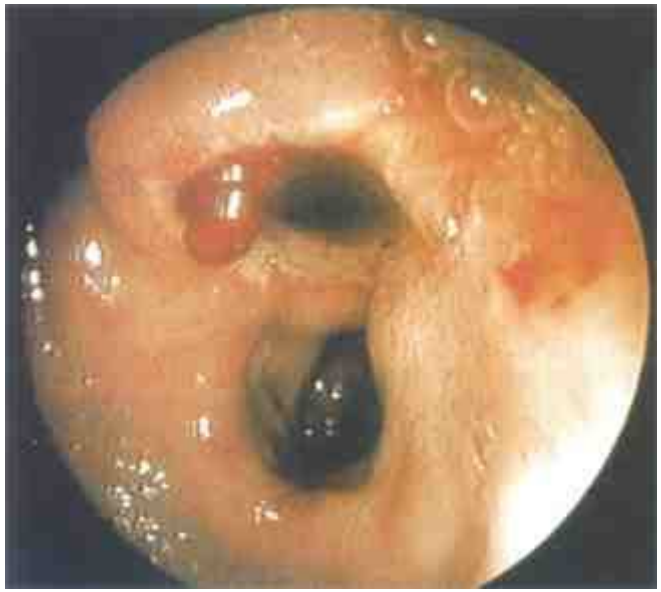
Aetiology of NVH

- Peptic ulcer disease 50%
  - H Pylori or NSAID
  - Alcohol and NSAID - synergistic effect
  - Significant haemorrhage - erosion of an underlying artery
  - Magnitude of bleeding related to the size of the arterial defect and the diameter of the artery.
  - Large, posterior duodenal ulcers - gastroduodenal artery
  - High, lesser curve gastric ulcers - branches of the left gastric artery.
  - H/O dyspepsia NOT COMMON.

Aetiology of NVH

- Stomal ulcer— 1-2% in h/o gastric surgery
- Carcinoma of the stomach— 1-2%
- GIST – can also be in duodenum
- Haemobilia– rare in chronic pancreatitis
- Diverticula of SB incl Meckel's
- Blood diseases
- Pseudoxanthoma elasticum
- Aortointestinal fistula
- Mallory-Weiss 6-8%
- Stress ulceration – multiple erosions— 4%
- Dieulafoy's – 5%-- ulcer in vascular abn in fundus -- detected by palpation
- Reflux oesophagitis

Bleeding stomal ulcer



Dieulafoy’s lesion

Mallory Weiss

CLINICAL FEATURES

- Confirm blood has been voided
  - NGT – clear in up to 10% of patients
  - Rectal examination
  - Period of observation in stable patient
- History of dyspepsia not required
- History of varices, peptic disease
- Aortic aneurysm repair
- NSAID and Alcohol
- Urea rises in upper GI but not Lower GI

NG Lavage

- To identify and quantify upper GI bleeding
- To improve visualisation in endoscopy
- No benefit from cold lavage
- IV metoclopramide clears stomach as well

MANAGEMENT

- A- Airway
  - vomit/ clot obstructing upper airway
- B- Breathing
  - Aspiration pneumonia (22% of severe upper GI Hge)
- C- Circulation
  - Obtain vascular access – wide bore-cannula F14 and get x-match
  - Assess for hypovolaemia – Fluid resuscitation
  - Assess for active bleeding – Control bleeding

Management of hypovolaemia

- Hypotensive resuscitation
- Fluids 500 mls/ 15 min and titrate according to, P, BP, CVP and urine output
- crystalloids followed by colloids followed by blood.
- HDU / ITU

Medical therapy

- Platelet function and clotting better in neutral pH
- H2-receptor blockers- meta-analysis no difference
- PPI – reduce rate of re-bleeding and surgery esp after endoscopic therapy
  - 40 mg BD po
  - 80 mg IV followed by 8mg/hr for 72 hrs
- ? role of octreotide

Control bleeding

- Endoscope
  - Video-endoscopy vs fibreoptic endoscopy
  - Paediatric endoscope(2.8mm working channel)

  Vs

  double channel endoscope

  Vs

  Single channel wide (3.8mm) with suction/irrigation endoscope

Endoscopy technique

- Within 24 hours
- Sed vs GA
- Tilting trolley
- Left lateral head down to see distal stomach
- Right lateral head up to see fundus
- ? Pharyngeal overtube

Endoscopic stigmata of bleeding ulcer

- Active ARTERIAL bleeding
- Active oozing
- Visible vessel
- adherent clot
- Flat red or black spots/ slough
- Oozing on contact from edge

Arterial bleeding

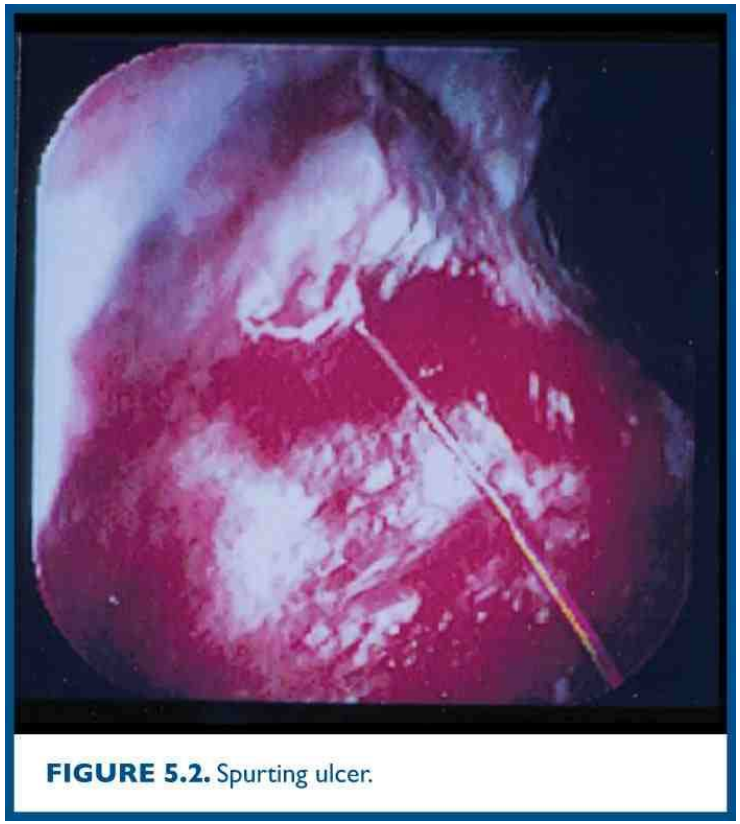


FIGURE 5.2. Spurting ulcer.

Clot over visible vessel

FIGURE 5.9. Clot overlying a visible vessel.

Ulcer with visible vessel

Slough with visible vessel

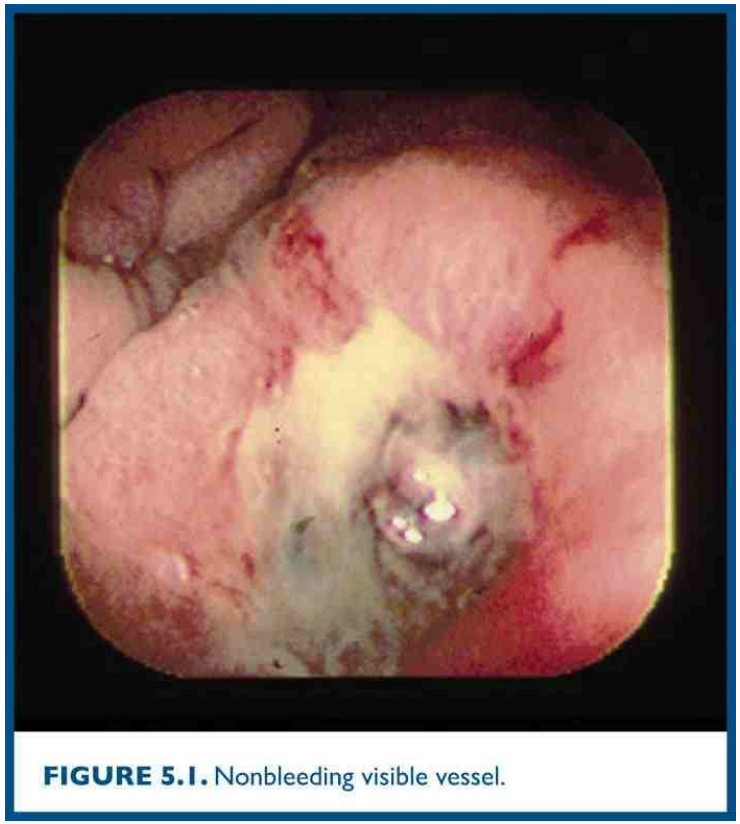


FIGURE 5.1. Nonbleeding visible vessel.

Clot on ulcer

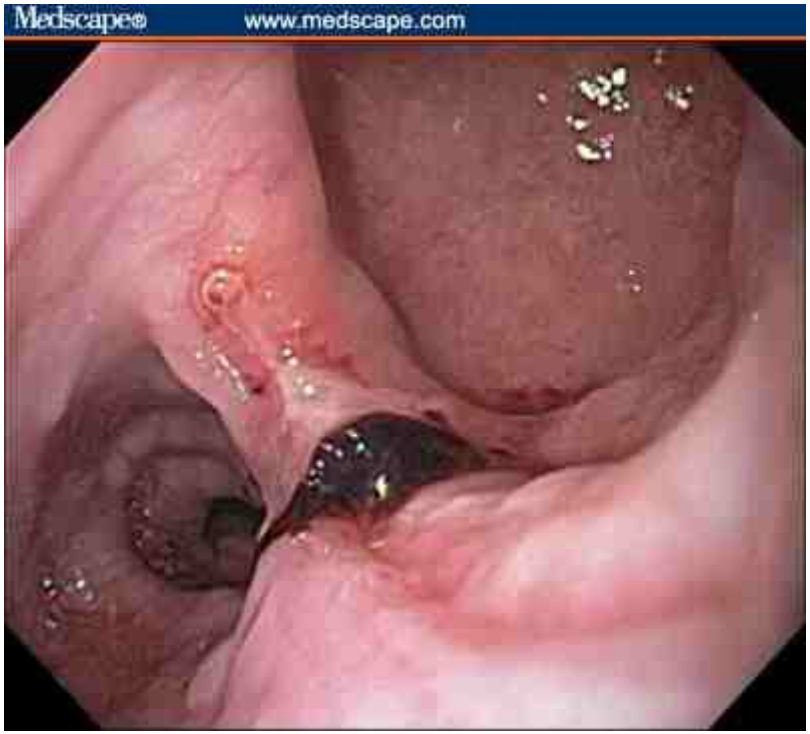


TABLE 5.4.
Prevalence of stigmata of ulcer hemorrhage and outcomes of ICU patients with severe ulcer bleeding

Endoscopic Appearance	% of Total	More Bleeding*
Active bleeding**	12%	68%
Nonbleeding visible vessel	24%	50%
Nonbleeding adherent clot	10%	33%
Oozing bleeding without clot or vessel***	7%	10%
Gray slough, flat red or black spot	14%	7%
Clean ulcer base	33%	3%

This included 200 patients admitted to an ICU with severe bleeding whose ulcer could be identified on emergency endoscopy in UCLA-CURE studies. All patients received an H_2 receptor antagonist but did not have therapeutic endoscopy.

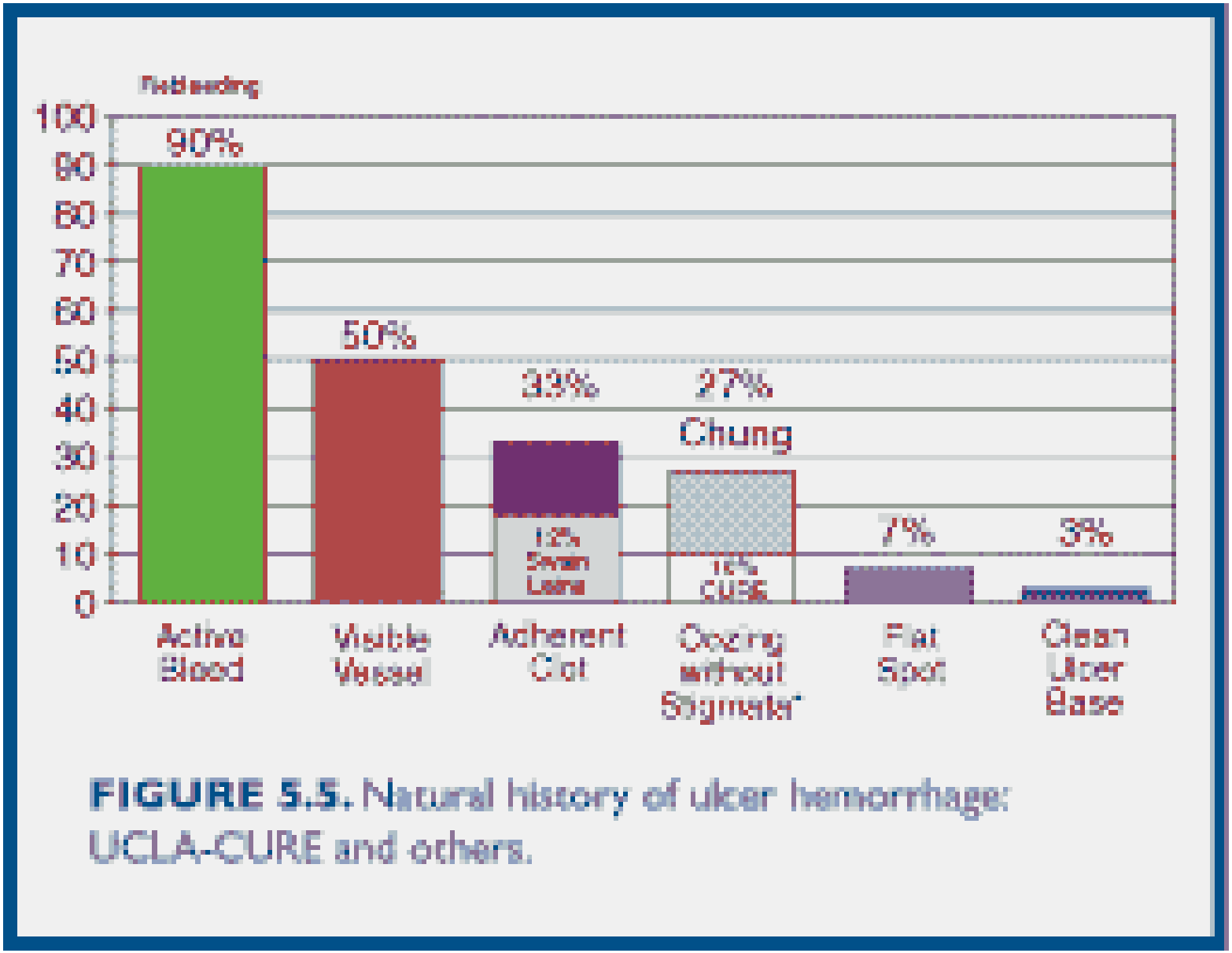


FIGURE 5.5. Natural history of ulcer hemorrhage: UCLA-CURE and others.

Endoscopic therapy

- Reduces chance of surgery in active bleeding from 60 to 15%
- Reduces mortality from UGI bleeding

Endoscopic Haemostatic therapy

- Reproducible effectiveness
- Easy, rapid application
- Relatively low expense
- Portability
- availability

Endoscopic treatment

- Thermally active
  - Laser / argon photocoagulation
  - Bipolar diathermy
  - Heat probe
  - Monopolar
- Injectable
  - Adrenaline injection
  - Injection sclerotherapy
  - Clotting factors/ tissue glue
- Mechanical
  - Clips
  - Bands
  - Loops
  - suturing
- Combination therapy

Thermally active

- Laser photocoagulation
  - Delivers heat to tissue
  - Nd- YAG or Argon plasma
  - Perforation and exacerbation of bleeding
  - Expensive, dedicated large unit, protection
- Bipolar/ monopolar diathermy
  - Superseded by heat probe
- Heat probe
  - Coil in tip reaching 150°C
  - Coaptive coagulation
  - 3.2 mm probe –4 pulses of 30J (Jensen 1990)
  - Change position of probe

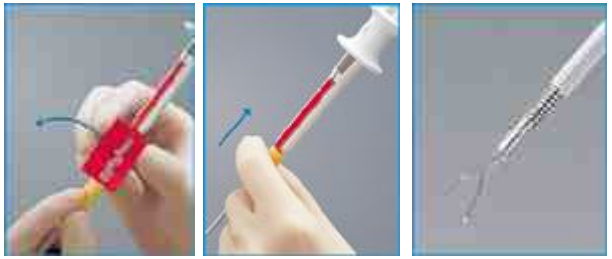
Injectable Endoscopic treatment

- Adrenaline injection
  - Tamponade, vasospasm, platelet activation
  - 1 in 10000
  - 0.5 ml boluses- usually 8
  - Force needed
- Injection sclerotherapy
  - Absolute alcohol
  - 1%polycanol
  - 5% ethanolmine
  - 3% STD

Mechanical

- Endoclip
- Needs experience
- Results improving with experience
- Difficult in hard, fibrotic ulcers

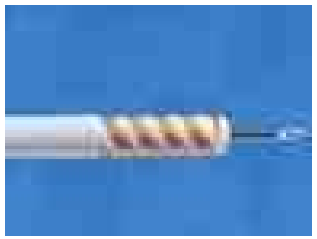
Clip deployment



Endoscopic treatment

- Combination therapy
  - Adrenaline and heat probe
  - Better results than adrenaline only (Chung 1997)
  - Adrenaline and bipolar (gold probe)
  - Adrenaline followed by ethanolamine
  - Reduction in re-bleeding (Oxner 1992)
  - Injection haemostasis followed by clips

Gold probe



Adrenaline inj and clip

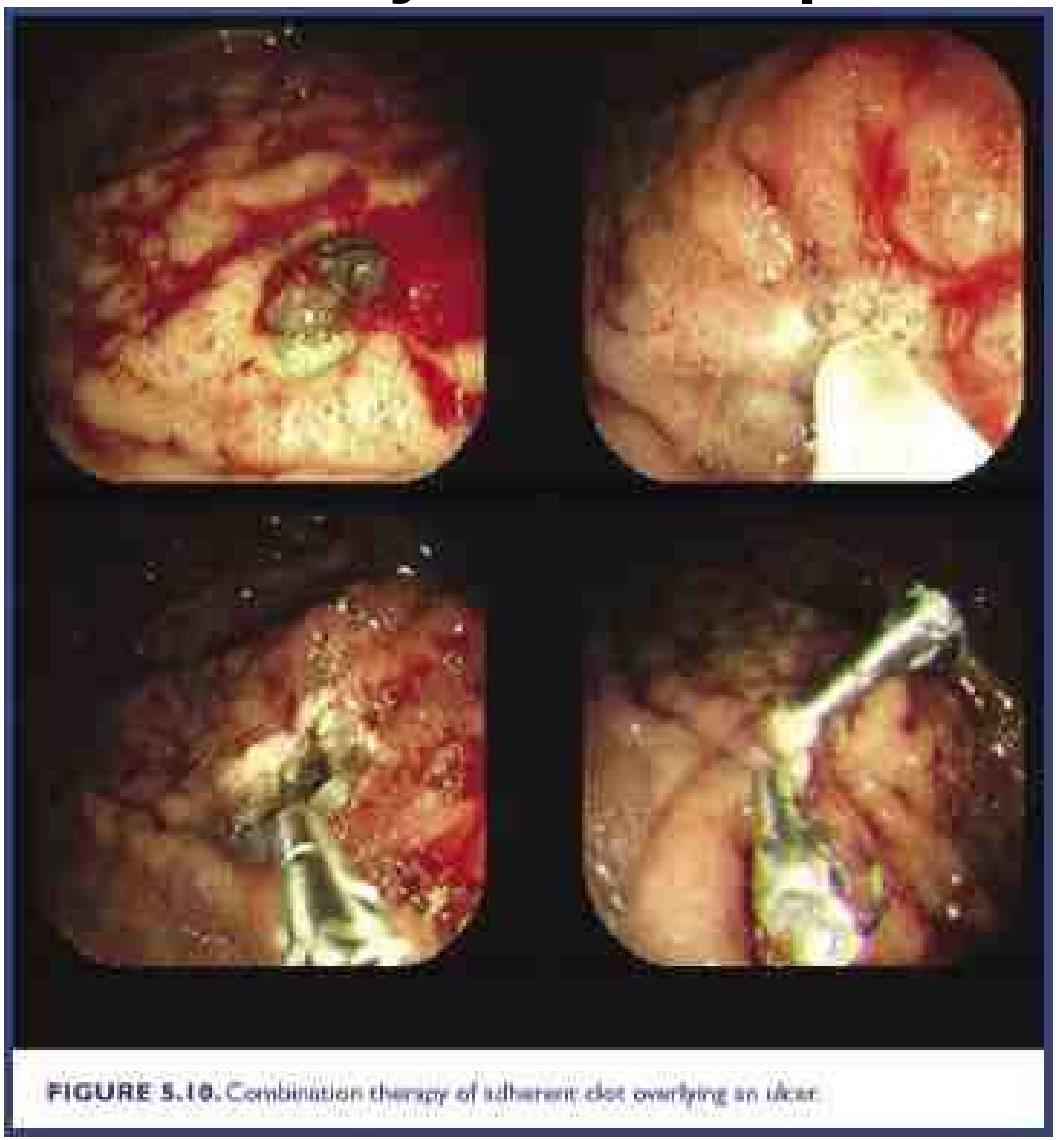


FIGURE 5.10. Combination therapy of adherent clot overlying an ulcer.

Surgical treatment

- If endoscopic treatment is unsuccessful
- If re-bleeding occurs after successful endoscopic treatment
- Repeat endoscopic treatment – no clinical evidence— may result in suboptimal pt

Surgery for Bleeding D. Ulcer

- Duodenotomy
- Underrunning of vessel- 23 mm needle 0 or 1 PDS or prolene
- If pylorus opened for access- pyloroplasty
- If vagotomy performed – pyloroplasty

only done in pts with h/o failed med treatment for ulcers

Large duodenal ulcer

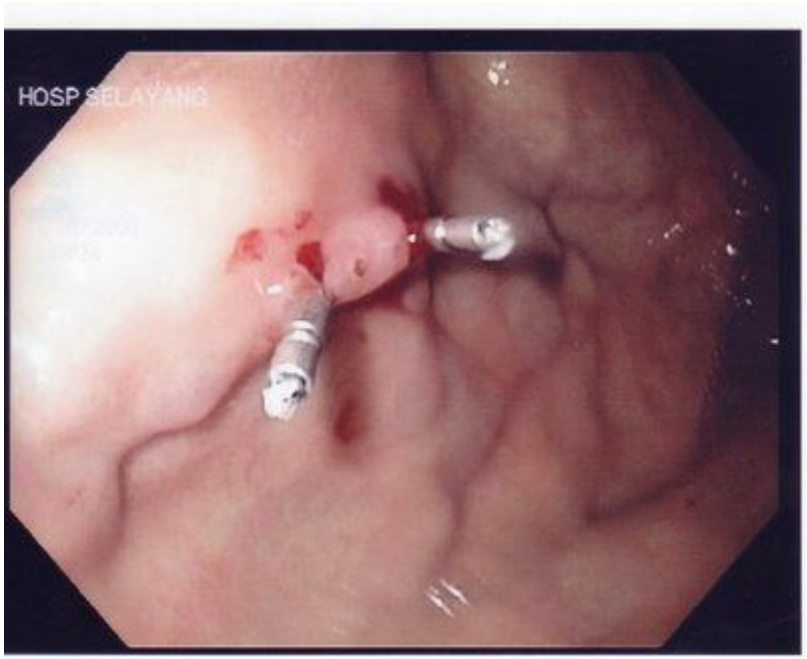
- Failure to close duodenotomy
- Antrectomy after dividing right gastric and gastro-epiploic
- Vagotomy and gastroenterostomy
- Difficult to close duodenum
- Bentley’s method of duodenal closure
- Tube duodenostomy

Bleeding gastric ulcer

- 8 of 61 malignant (Hunt 1982)
- Initial under-run for haemostasis

- Excision of ulcer

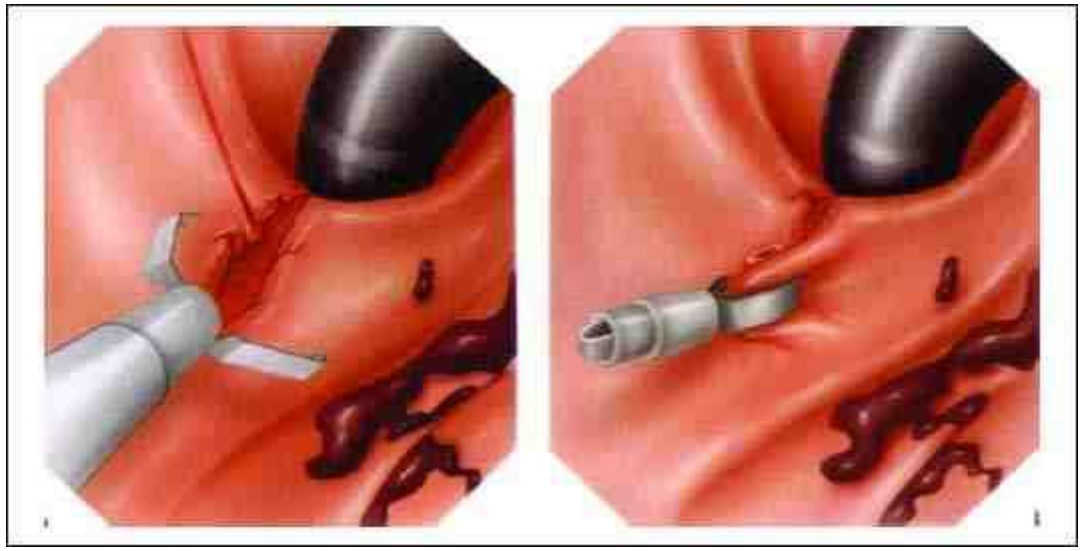
- Dieulafoy lesion
  - Clipping usually successful
  - – palpable – under-run


HOSP SELAYANG

Surgery for Bleeding Mallory-Weiss or Oesophageal ulcer

- Rarely needed
  - adrenaline injection
  - Clips
- Mobilise OGJ
- Anterior vertical gastrotomy
- Rarely needs left thoracotomy

Clip in Mallory-Weiss



CONCLUSION

- Stable patient- H, repeated exam, upper GI endo within 24hrs
- Unstable patient- Hypotensive resuscitation and therapeutic endoscopy.
- Surgery after unsuccessful endoscopy or first rebleed
- Medical treatment for bleeding ulcers will decrease rebleeding but does not improve mortality (unlike varices)

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