Endoscopic Treatment of Gastrointestinal Bleeding

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Overview

Before Endoscopy…?

- Indications
- Thermal Coagulation
- Injection Therapy
- Combination Therapy
- Fibrin Sealant
- Endoclips
- Argon Plasma Coagulation
- Lysine - Haemmostop
- Variceal Banding
- Histoacryl Glue
- Approach to specific Problems

Before Endoscopy

- Correct what you can
  - Anaemia
  - Coagulapathy
  - Co-morbidity
- If you come to endoscopy in a poor state of repair you are likely to leave endoscopy in a poor state of repair

Indications for endoscopic Haemostasis

- Endoscopic stigmata indicating high risk of rebleeding
- Use it when Stigmata are present

Endoscopic predictors of recurrent ulcer hemorrhage

Endoscopic stigmata of recent hemorrhage	Prevalence, percent	Risk of rebleeding on medical management, percent
Active arterial bleeding	10	90
Non-bleeding visible vessel	25	50
Adherent clot	10	25 to 30
Oozing without visible vessel	10	10 to 20
Flat spot	10	7 to 10
Clean ulcer base	35	3 to 5

Adapted from Kaczmarek, B, Logan, R, Davies, J, et al, Dig Dis Sci 1994; 39:706.

In General – for Severe GI Bleeds

- Dual Channel Scope
- Large 3.7+mm Suction channel
- Have the kit ready before you start

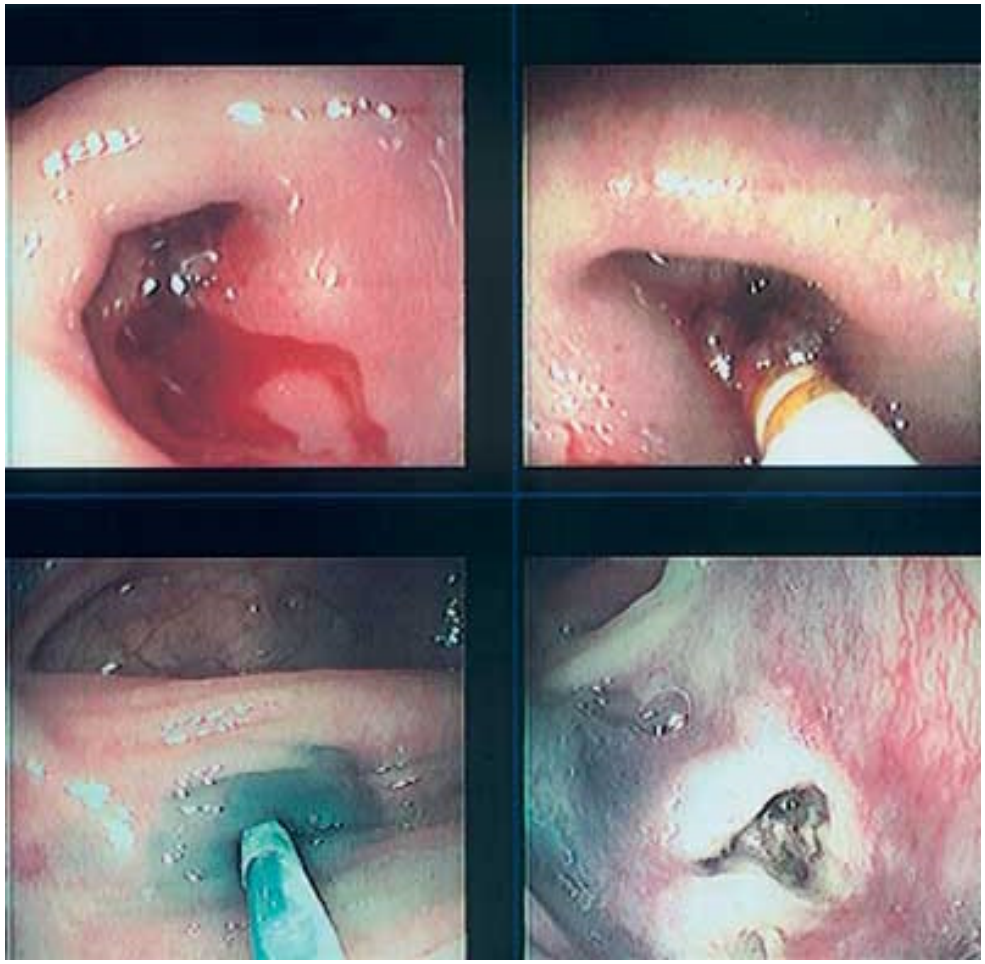
Injection

- Epinephrine 1:10,000 or 100,000
- Achieves Acute Haemostasis
- Cheap
- Re-bleed rates are high (18%)

Thermal Coagulation

- Achieves acute haemostasis
- Prevents re bleeding
- Does so by Thermal coagulation of artery in Ulcer base
- Multiprobe(Olympus), Goldprobe (Microvasive), Bicap (Circon)
- Similar efficacy to injection alone

Gold Probe



Multi Probe

- Achieves haemostasis by heating the contacted tissue with electricity that passes between the alternating arrays of positive and the negative electrodes located at the tip of the probe.
- Coagulation occurs when the tissue temperature becomes higher than 60 degrees C.
- Deeper coagulation is limited by desiccation of superficial tissues and hence increasing resistance to coagulation

Heater probe

- The heater probe has a thermocouple at the tip of the probe that can heat up almost instantaneously and achieve tissue coagulation. (Ceramic tip)
- It can coagulate deeper tissues
- It can cause perforation of thin walled viscuses (deep ulcers)

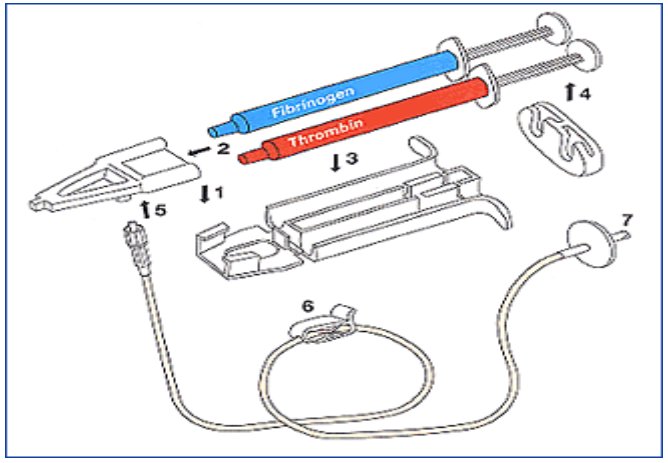
Combination Therapy

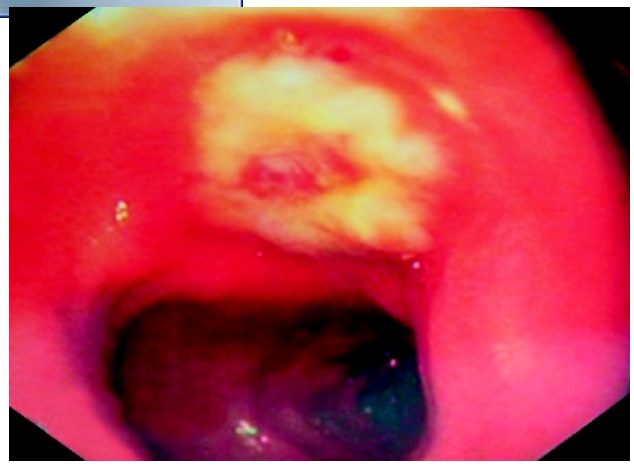
- Small RCTs
- Suggest epinephrine injection followed by thermal coagulation or haemoclip confer a decrease in re bleeding rates greater than either method alone.

Fibrin sealant

- Fibrin sealant (fibrin adhesive; fibrin glue; Beriplast P1) is a haemostatic and wound support product consisting of the blood coagulation factors fibrinogen, factor XIII and thrombin, the antifibrinolytic agent aprotinin and calcium chloride.
- Endoscopically injected fibrin sealant is applied to induce haemostasis
- Allows two components of the sealant to be injected via a endoscopically introduced cannula

Fibrin sealant





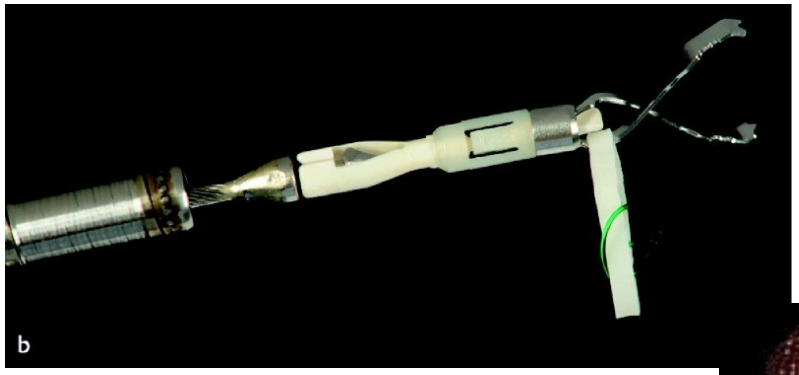
Endoclips

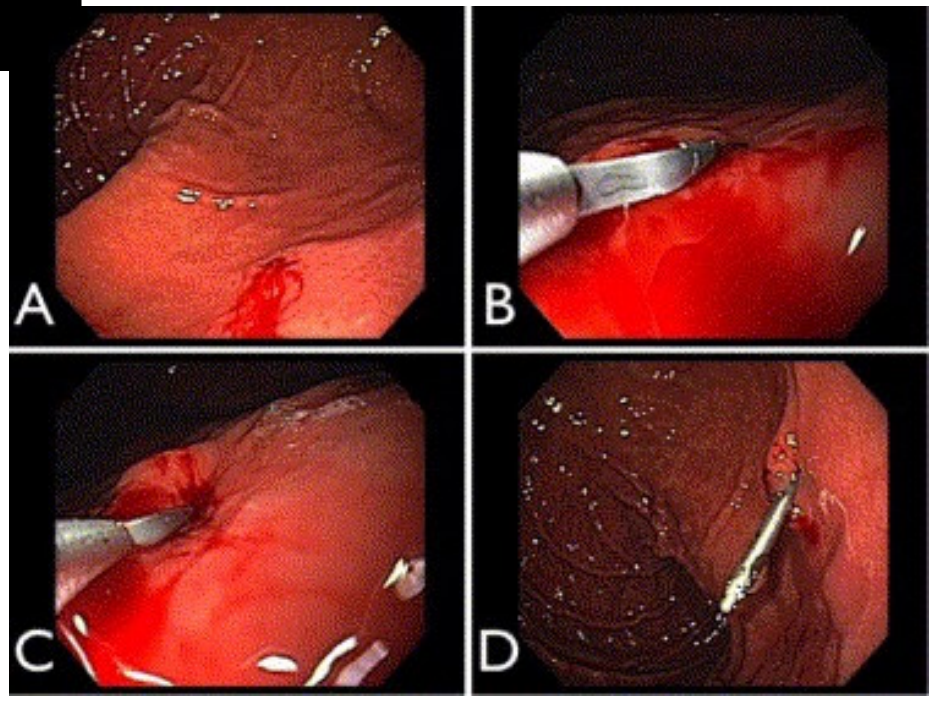
- Achieve haemostasis in manner similar to surgical ligation
- Available data limited
- Suggests safe
- May be useful in marking bleeding vessels even if bleeding persits post endoscopy (to allow radiological identification)

Endoclips

- Passed Via the Scope
- Then opened
- Positioned
- Closed
- Locked
- Deployed in ulcer base

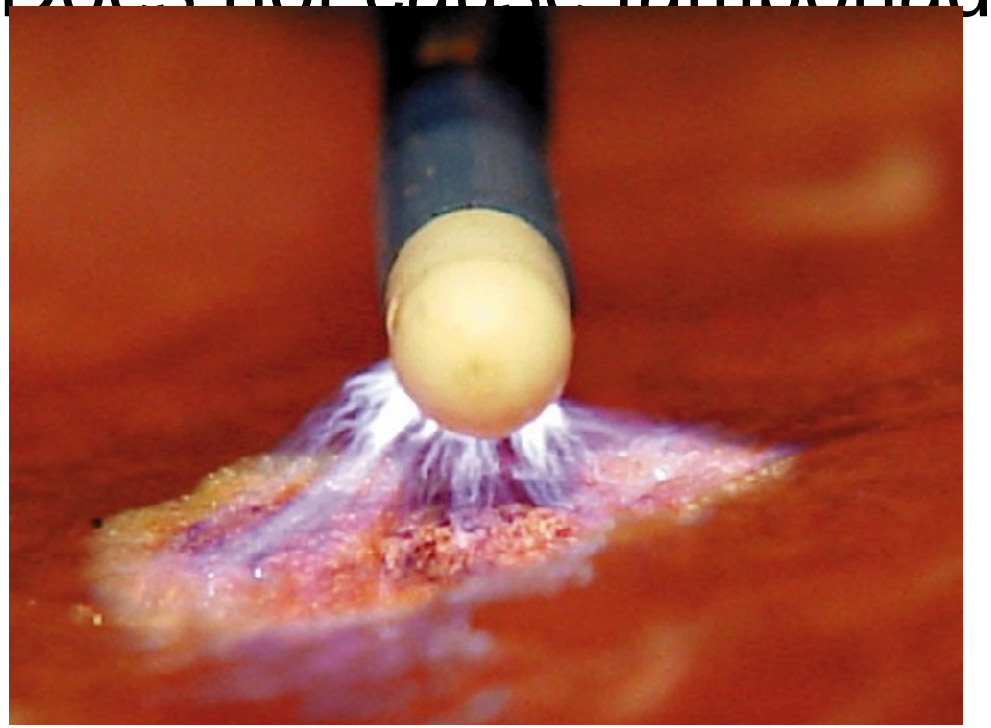
Clips





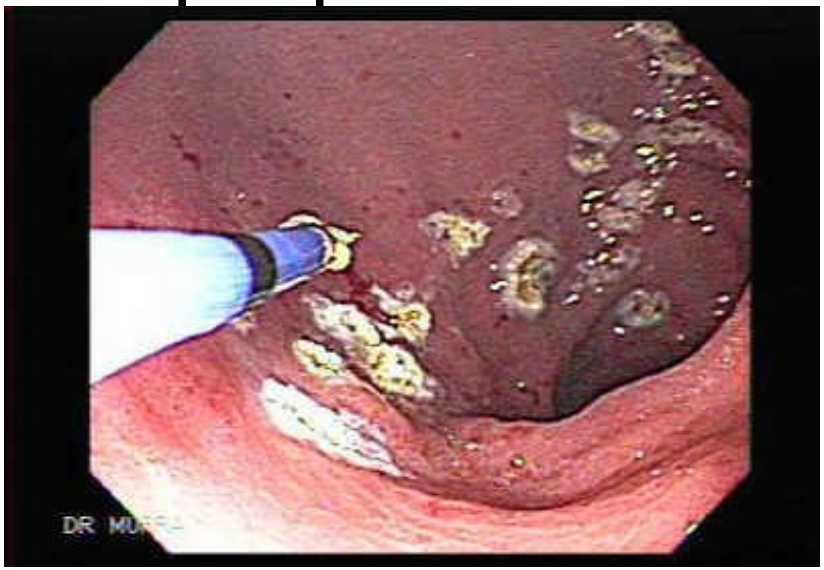
Argon Plasma Coagulation

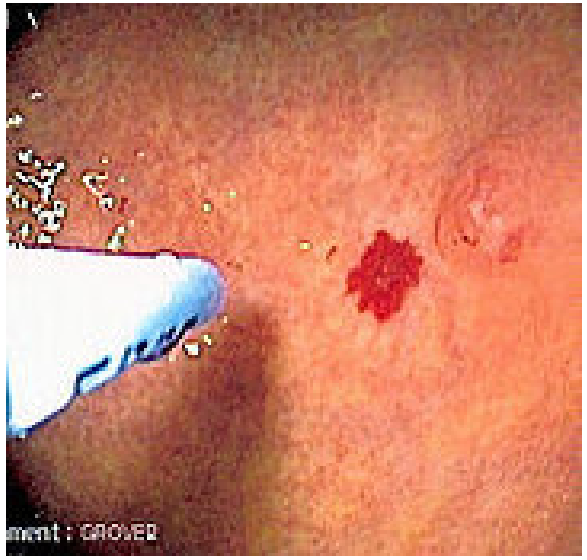
- At least 2 controlled trials suggest it is safe and effective
- Does not cause tamponade



APC

- Can cover relatively wide area
- Multiple points





Acid Suppression

- At least as important as endoscopic therapy (6% vs 23% rebleeding)
- Meta analysis of 21 RCTs suggests an Odds ratio of 0.49 for PPIs.

ACTIVE ARTERIAL BLEEDING – 90%

- Inject 1:10,000/100,000 adrenaline
- 4 quadrants
- 1-2ml aliquots
- Ideally within 2-4mm of bleeding point to obtain vasoconstriction
- Wash and clean to visualise
- Then consider Thermal Coagulation
  - Apply tamponade with probe
  - Then thermal coagulation
  - 7-10 seconds at 10-12 watts for multiprobe
  - Or 5 pulses at 30 joules with Heater probe
  - 15-20% rebleed compared to 25-40% with adrenaline alone
- OR Endoclip (8-15% re-bleed)

NON–BLEEDING VISIBLE VESSELS – 20%

- Consider Adrenaline, particularly if bleeding occurs
- Apply firm tamponade using probe
  - Then thermal coagulation
  - 7-10 seconds at 10-12 watts for multiprobe
  - Or 5 pulses at 30 joules with Heater probe
- Alternatively use Haemoclips
  - Use adrenaline if bleeding occurs during application
  - Use two clips to ensure haemostasis
- Both methods result in significant reduction in re-bleeding rates (15% compared to ~20+% for adrenaline alone)

NON-BLEEDING ADHERENT CLOTS

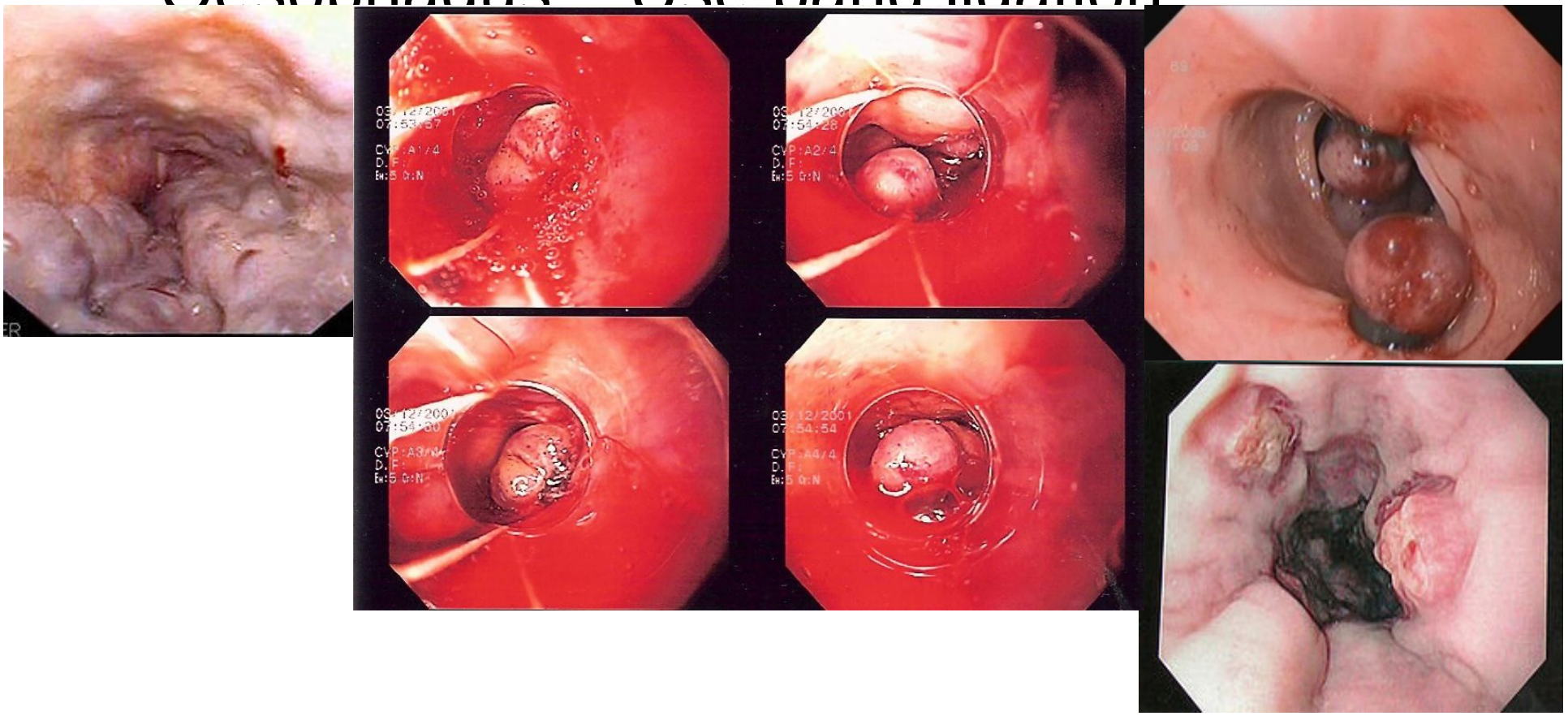
- Target irrigation to wash off parts of the clot
- Inject around the clot in 4 quadrants with Adrenaline.
- Then use a cold (No current) rotatable snare to shave off the clot
- Coagulate with heater probe using the same parameters as for Non bleeding visible vessel.
- Outcomes from monotherapy either injection or heater probe are no better than medical therapy alone
- Rebleeding rates with combination therapy 0-9% vs 25-37% with Medical therapy or endoscopic monotherapy

OOZING BLEEDING WITHOUT OTHER STIGMATA –15%

- Monotherapy alone is sufficient
- Combination Therapy does not significantly change outcomes
- Medical therapy is important in preventing re-bleeding

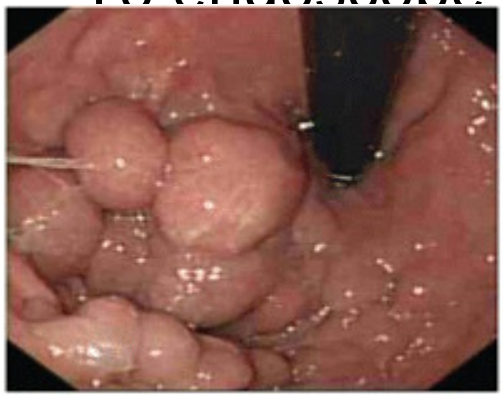
Variceal bleeding

- Oesophagus – Use band ligation



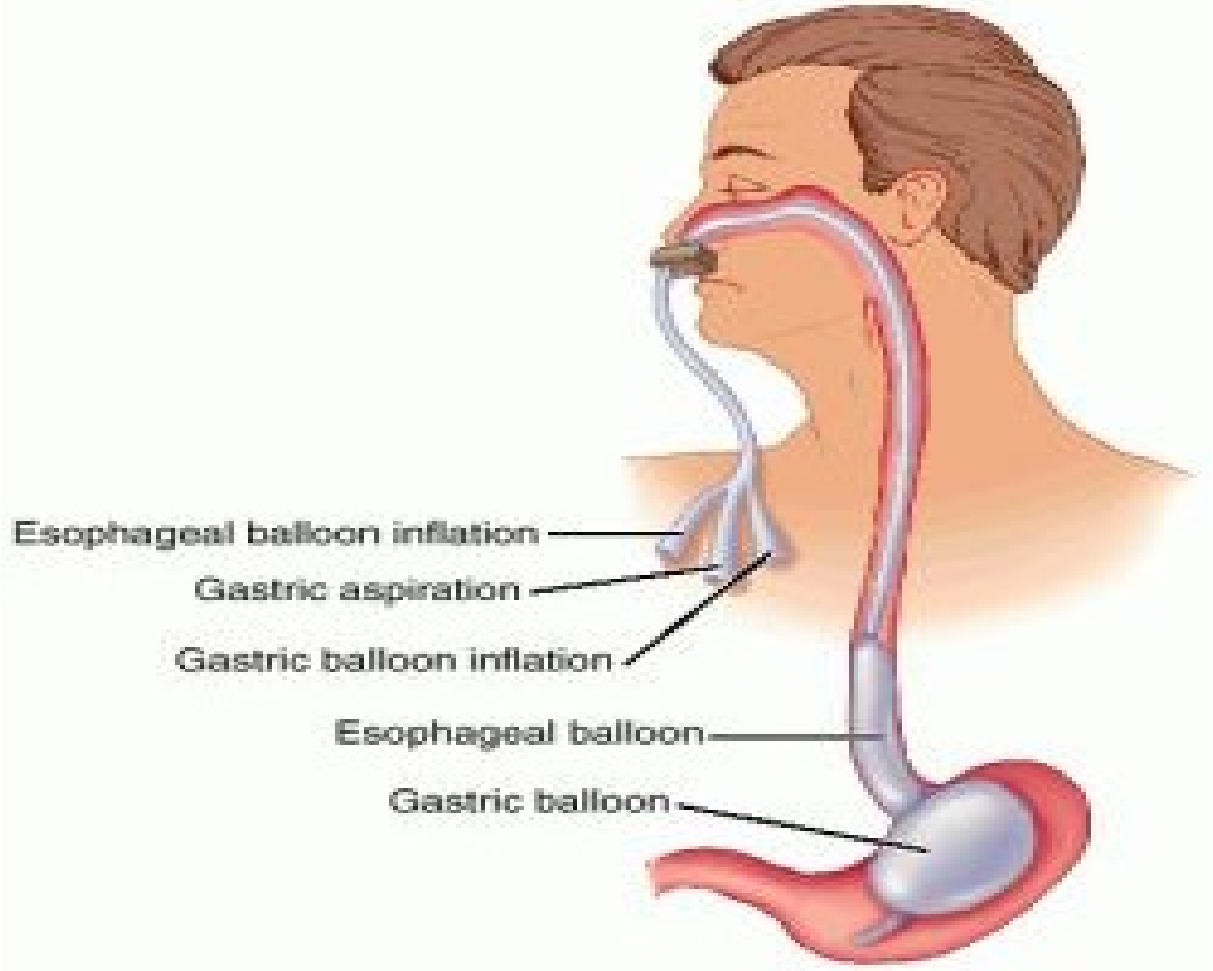
Gastric varices

- Histoacryl glue
  - Potential risks
    - To patient
    - To endoscope



Other variceal options

- Sengstaken Blakemore tube -brutal



Variceal Options

- Sclerotherapy – scarring and stricturing
- Non Endoscopic
  - TIPS –Trans jugular intrahepatic porto systemic shunt
  - Transplantation

New treatments

- Haemostatic sprays (Haemospray) (N=20)
- Removable stents for variceal tamponade
- Ultrasound guided angiotherapy
- Better clips/ sutures

Conclusion

- Treatment should be individual
- Tailored to endoscopic findings
  - Use combination therapy in High Risk Bleeds
  - No therapy unless indicated
- In context of the patients co-morbidity