


Laparoscopic Repair of Duodenal Perforation

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Perforated peptic ulcer famous fatalities



World Laparoscopy Hospital

Napoleon



Rudolph Valentino



James Joyce



Perforated peptic ulcer

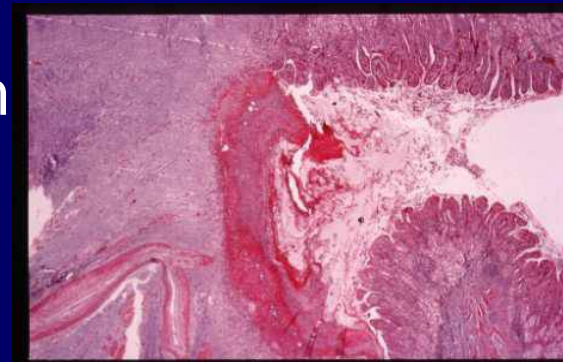
Acute abdomen (De Dombal n=30.000)

□ Appendicitis	28%
□ Cholecystolithiasis	9.7%
□ Occluded small intestine	4.1%
□ Gynecologic disorders	4.0%
□ Acute pancreatitis	2.9%
□ Urologic diagnosis	2.9%
□ Perforated peptic ulcer	2.5% (5-10 pro year)
□ Other diagnosis	1.5%
□ No diagnosis	>40%

Perforated peptic ulcer

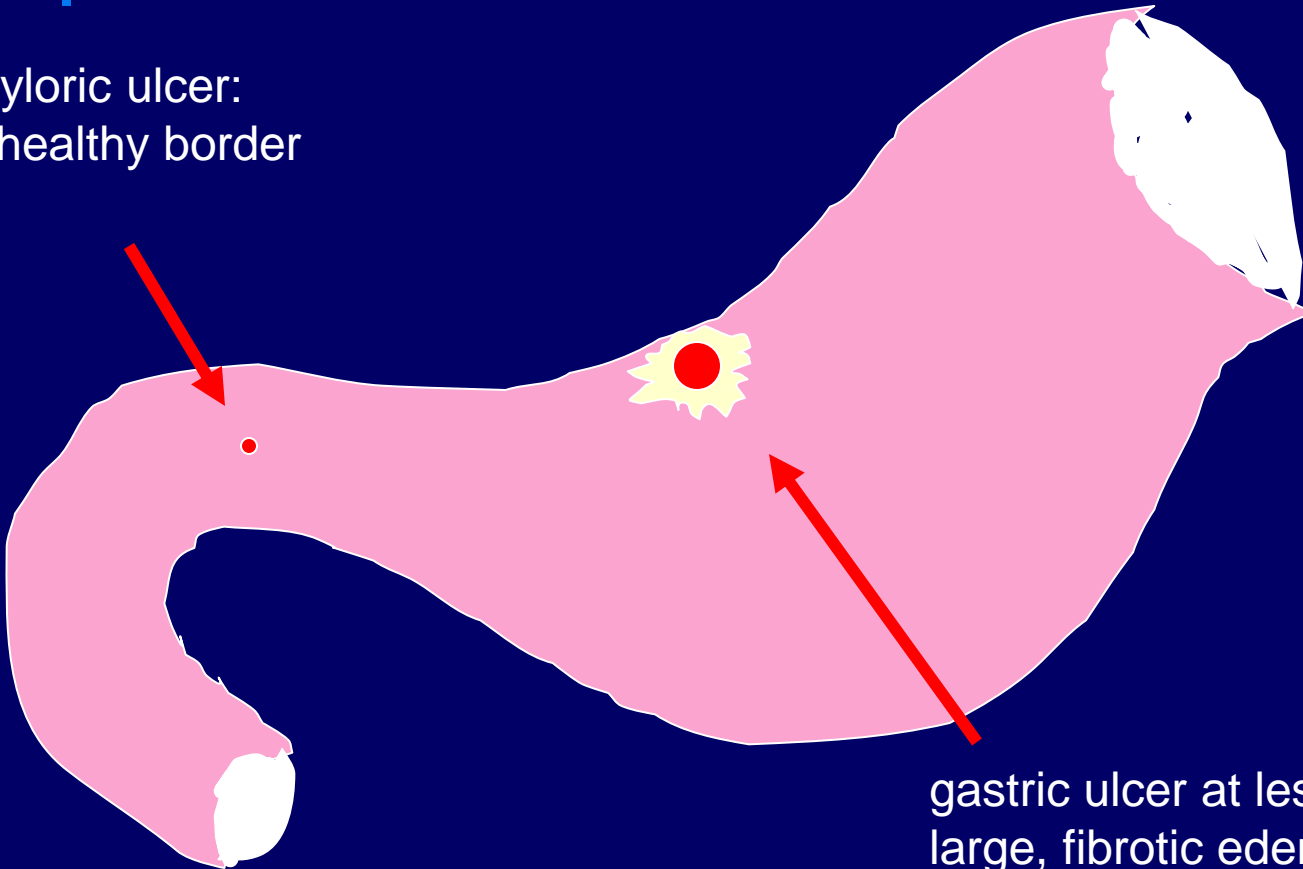
Pathology

- ❑ Most often chronic ulcer
- ❑ 50%: sealed off
- ❑ Location: most often anterior juxtapyloric
- ❑ Mean diameter: 5mm (>1cm=giant ulcer: rare)
- ❑ 10%: perforated gastric ulcer)



Perforated peptic ulcer morphology related to location

juxta-pyloric ulcer:
small, healthy border

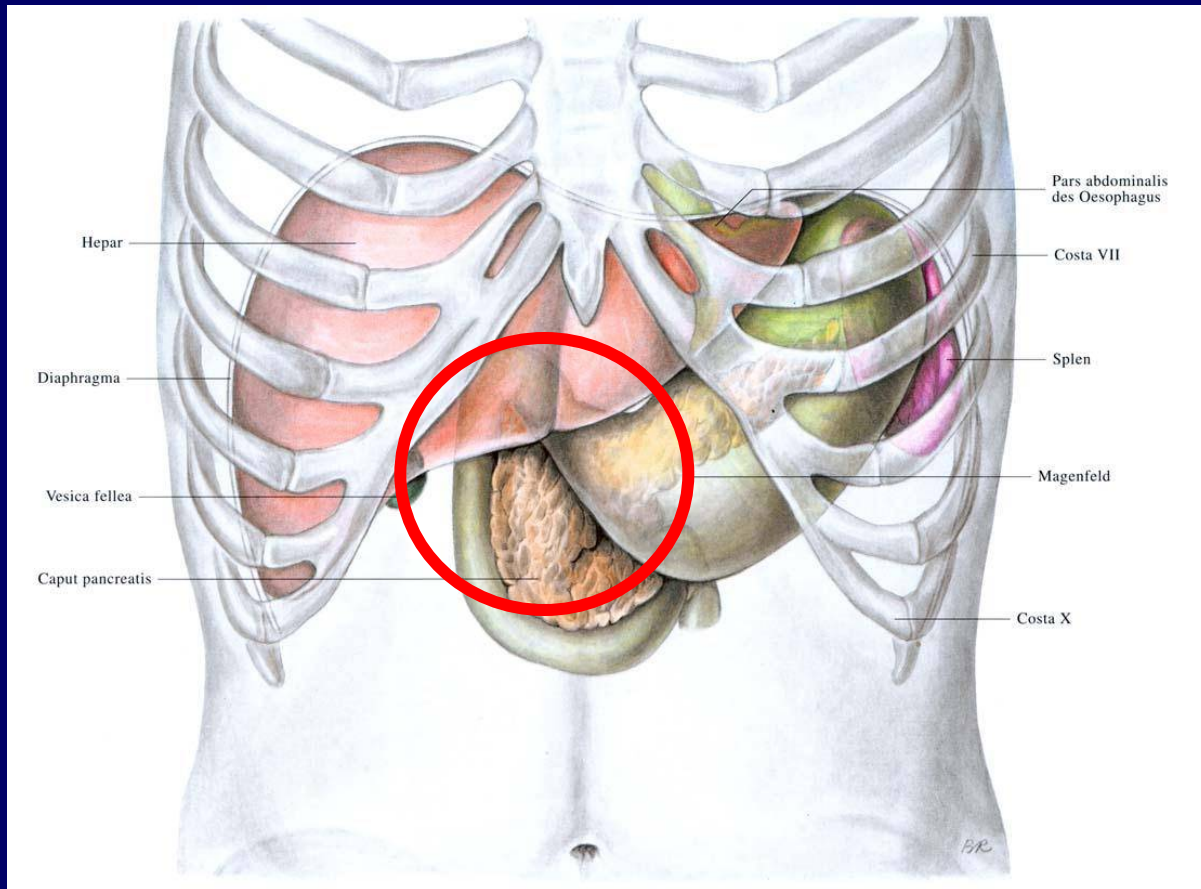


gastric ulcer at lesser curvature:
large, fibrotic edematous border
(ulcus callosum)

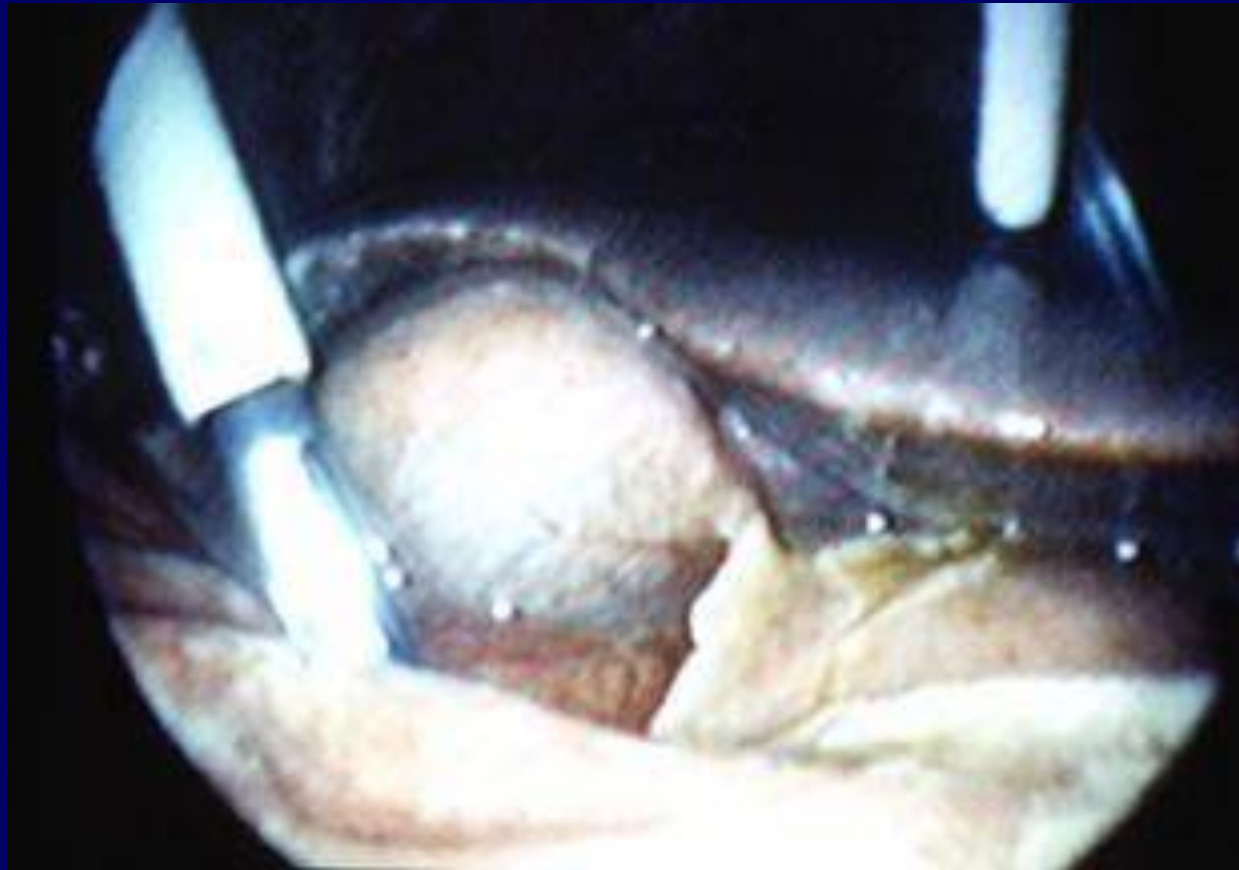
Perforated peptic ulcer perforated gastric carcinoma



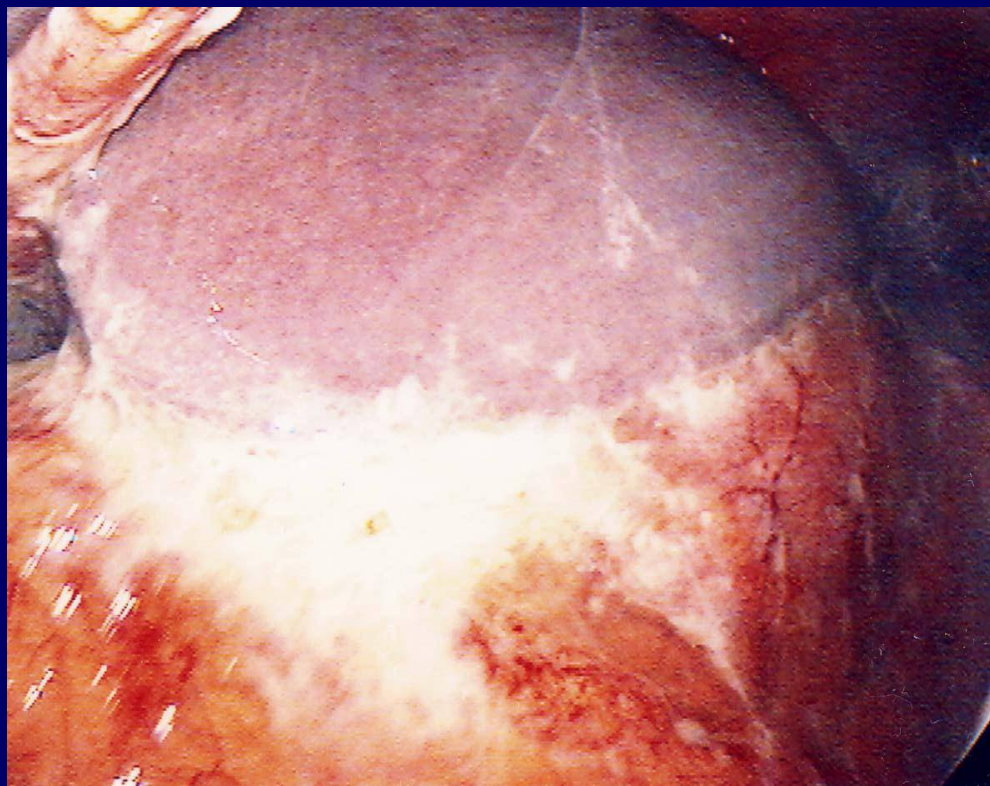
Perforated peptic ulcer sealing off by left liver half



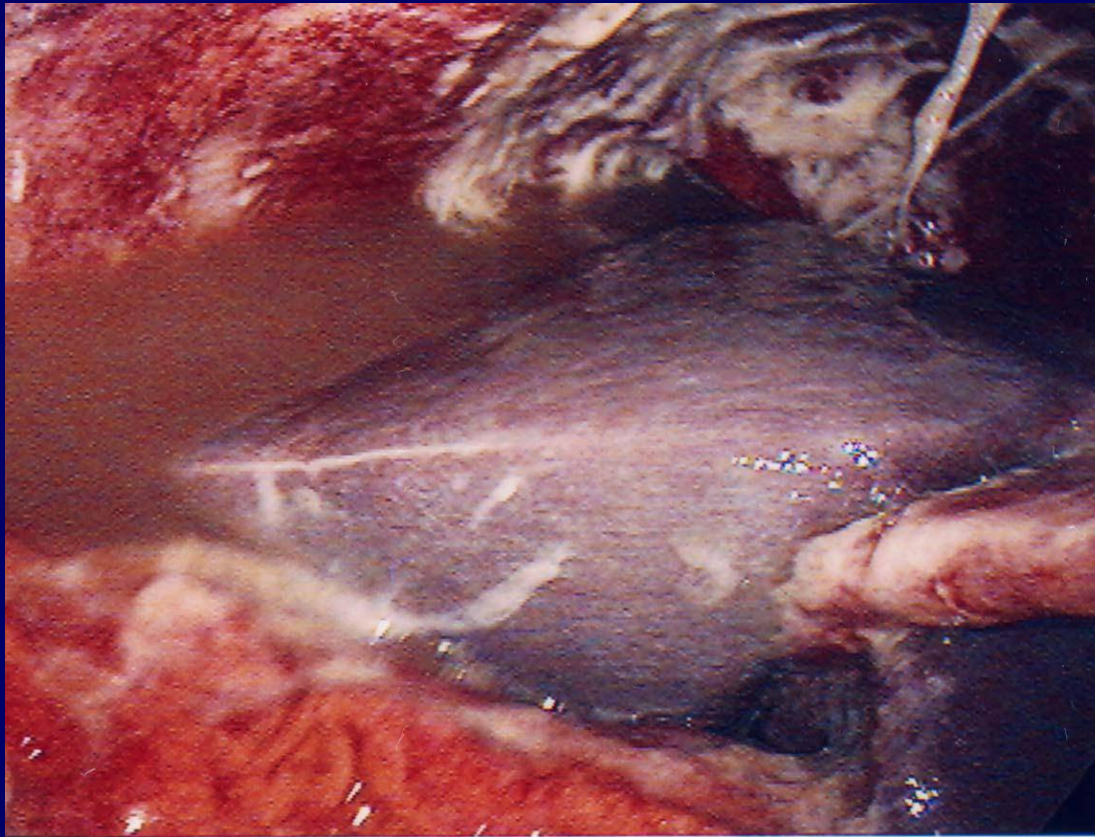
Perforated peptic ulcer sealing off by segment IV



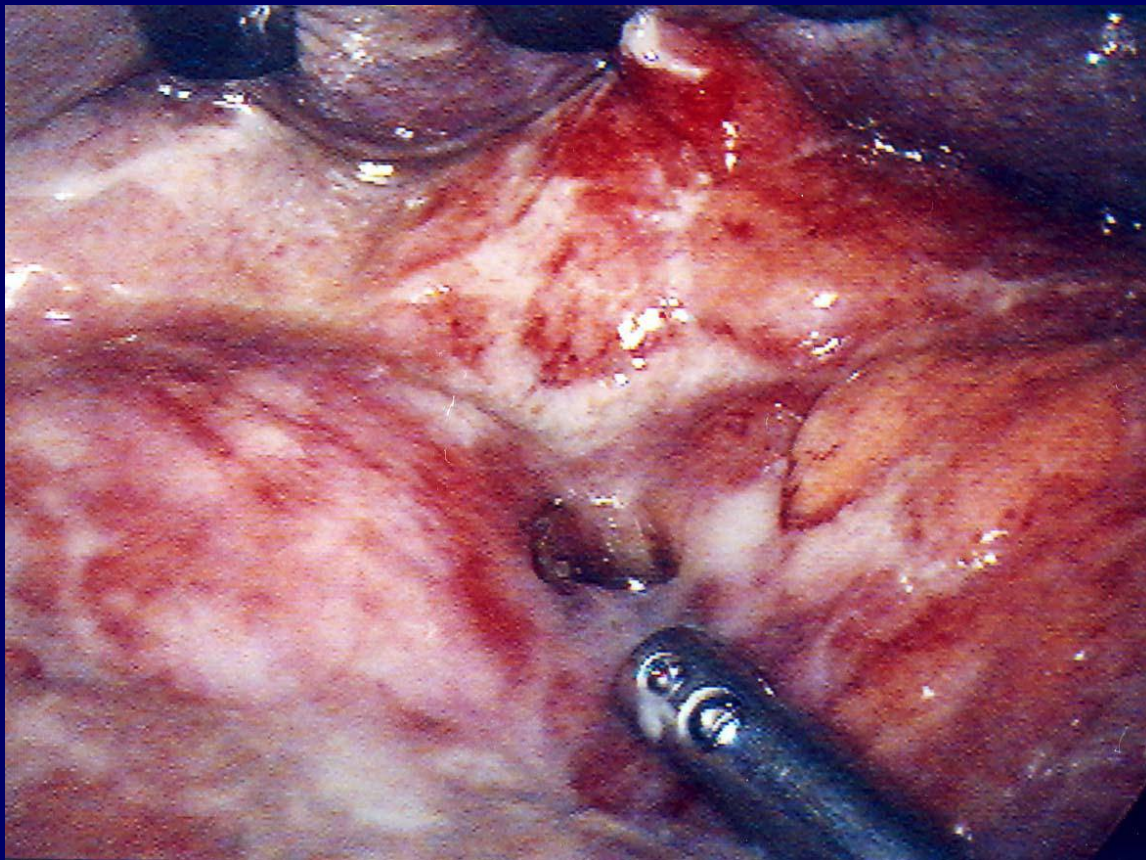
Perforated peptic ulcer sealing off by liver lobe



Perforated peptic ulcer fibrinous peritonitis+parahepatic collection



Perforated peptic ulcer ulcer visible after lifting left liver lobe



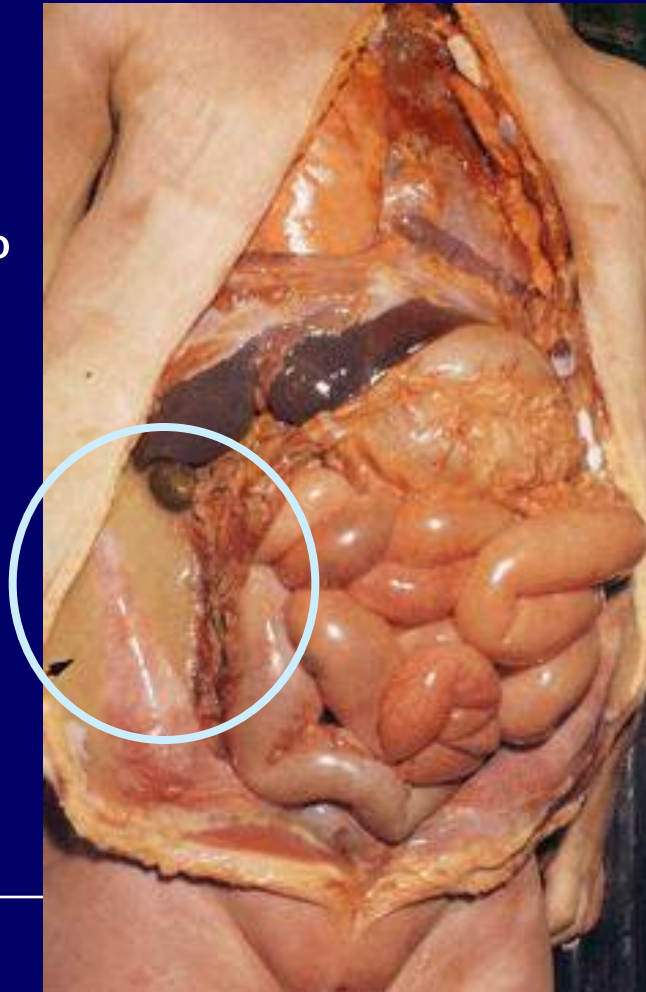


Perforated peptic ulcer Bacteriology

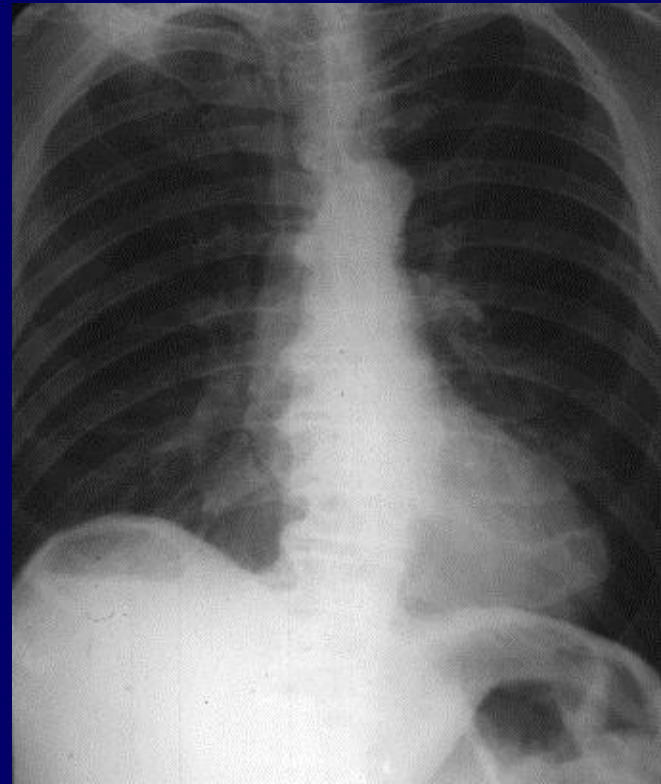
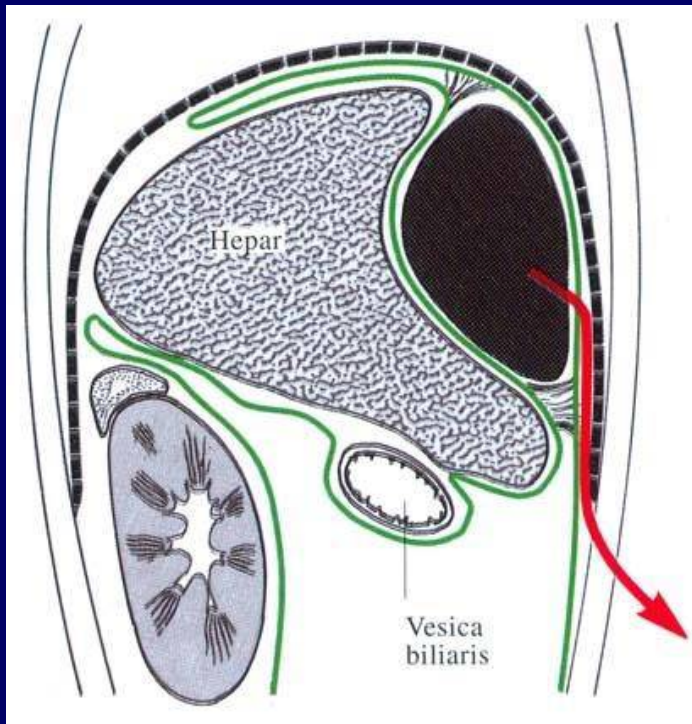
- <48h in 50%: sterile peritonitis; in other 50%: grampositive peritonitis
- >48h: infected peritonitis, most often grampositive initially, later gramnegative

Perforated peptic ulcer cause of death: peritonitis

Pre-antibiotics-mortality: 75%



Perforated peptic ulcer subphrenic abcess





Perforated peptic ulcer

Boey prognostic parameters

- ☐ Age
- ☐ Duration of symptoms
- ☐ Shock
- ☐ ASA III-IV
- ☐ Diameter of ulcer



ASA

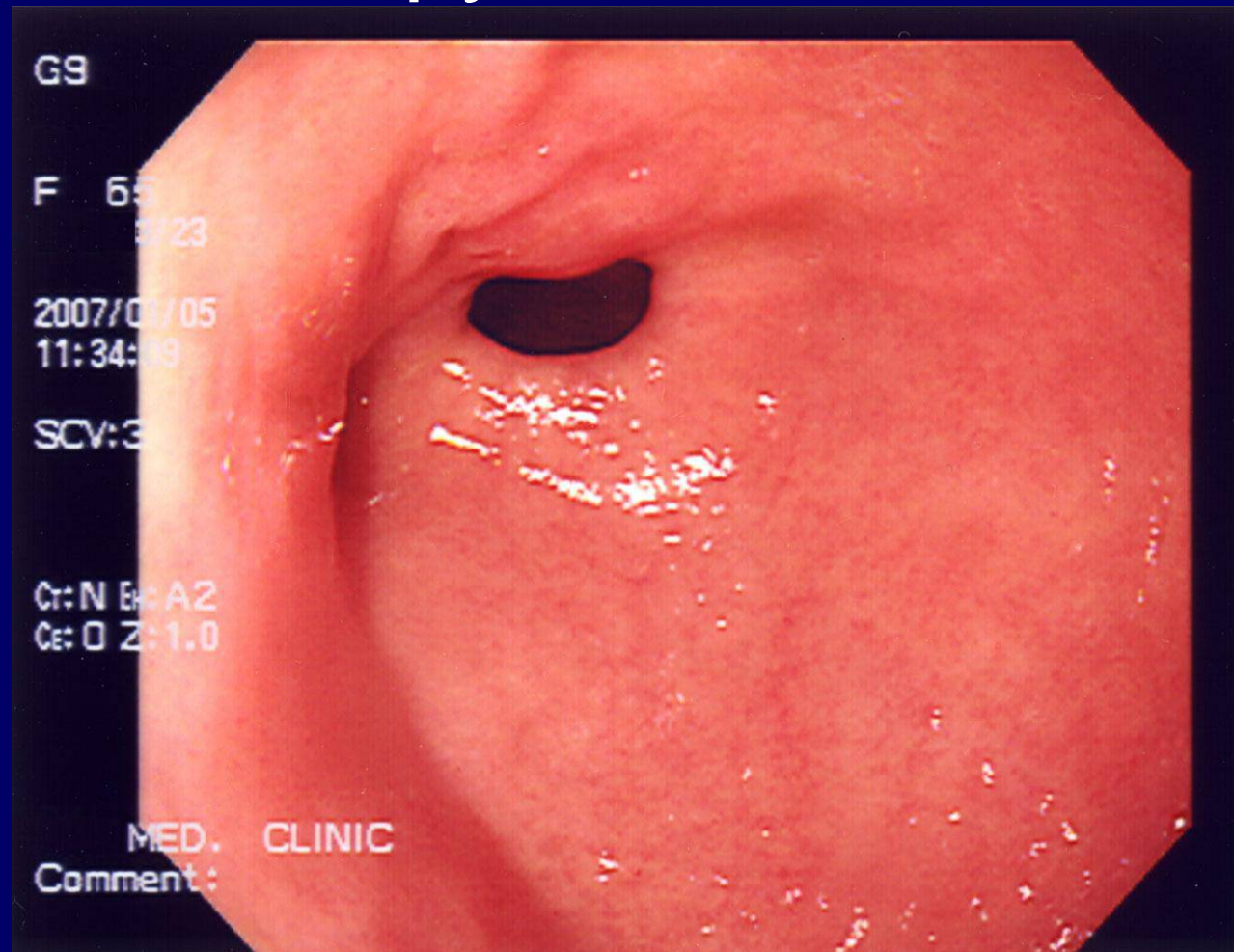
- ASA I - A normal healthy patient. (*ASA = American Society of Anesthesiologists*)
- ASA II - A patient with mild systemic disease.
- ASA III - A patient with severe systemic disease.
- ASA IV - A patient with severe systemic disease that is a constant threat to life.
- ASA V - A moribund patient who is not expected to survive without the operation.
- ASA VI - A declared brain-dead patient whose organs are being removed for donor purposes.
- E - Emergency operation of any variety (used to modify one of the above classifications, i.e., ASA III-E).

Perforated peptic ulcer

Diagnosis

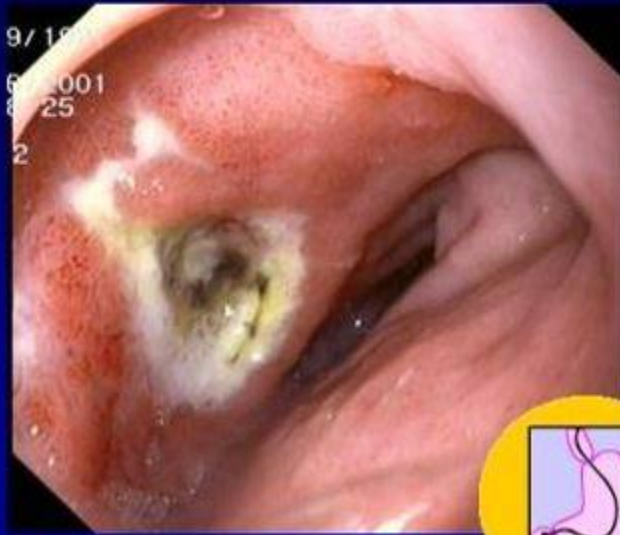


Endoscopy



Endoscopy

Endoscopy is one of the important 2nd line investigation





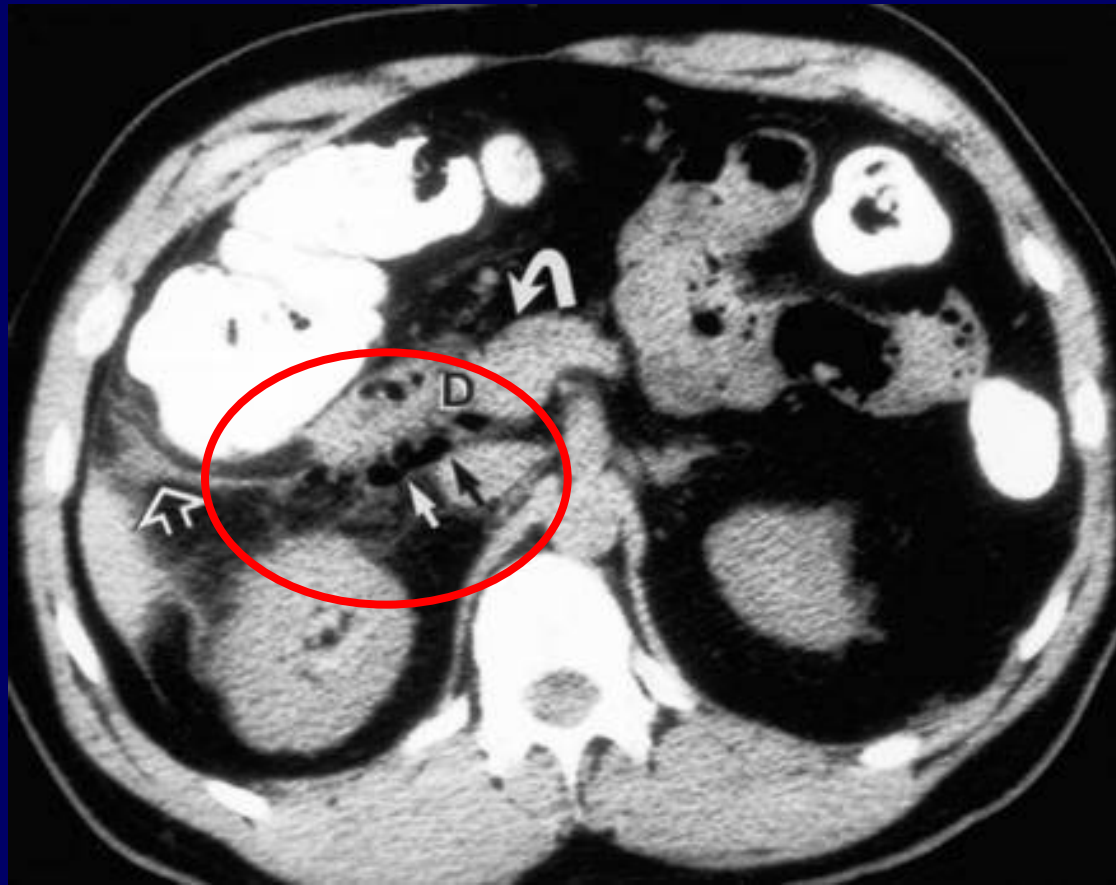
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CT Scan



Perforated peptic ulcer





Perforated peptic ulcer

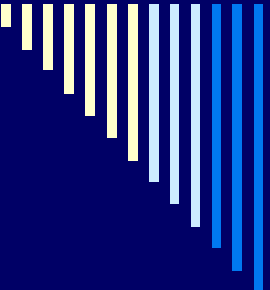
Diagnosis

- 1) X-thorax/abdomen in upright position
- If negative:
- 2) CT with oral contrast



Perforated peptic ulcer duration of postoperative pneumoperitoneum

- X: <6 days: 90%
- CT: <6 days: 50%; <18 days: 100%



Perforated peptic ulcer

Operative therapy (history)

- 1892 resection: Heusner
- 1894 oversewe: Dean
- 1937 omental patch: Graham
- 1990 laparoscopy: Mouret

(1947 Taylor: conservative)

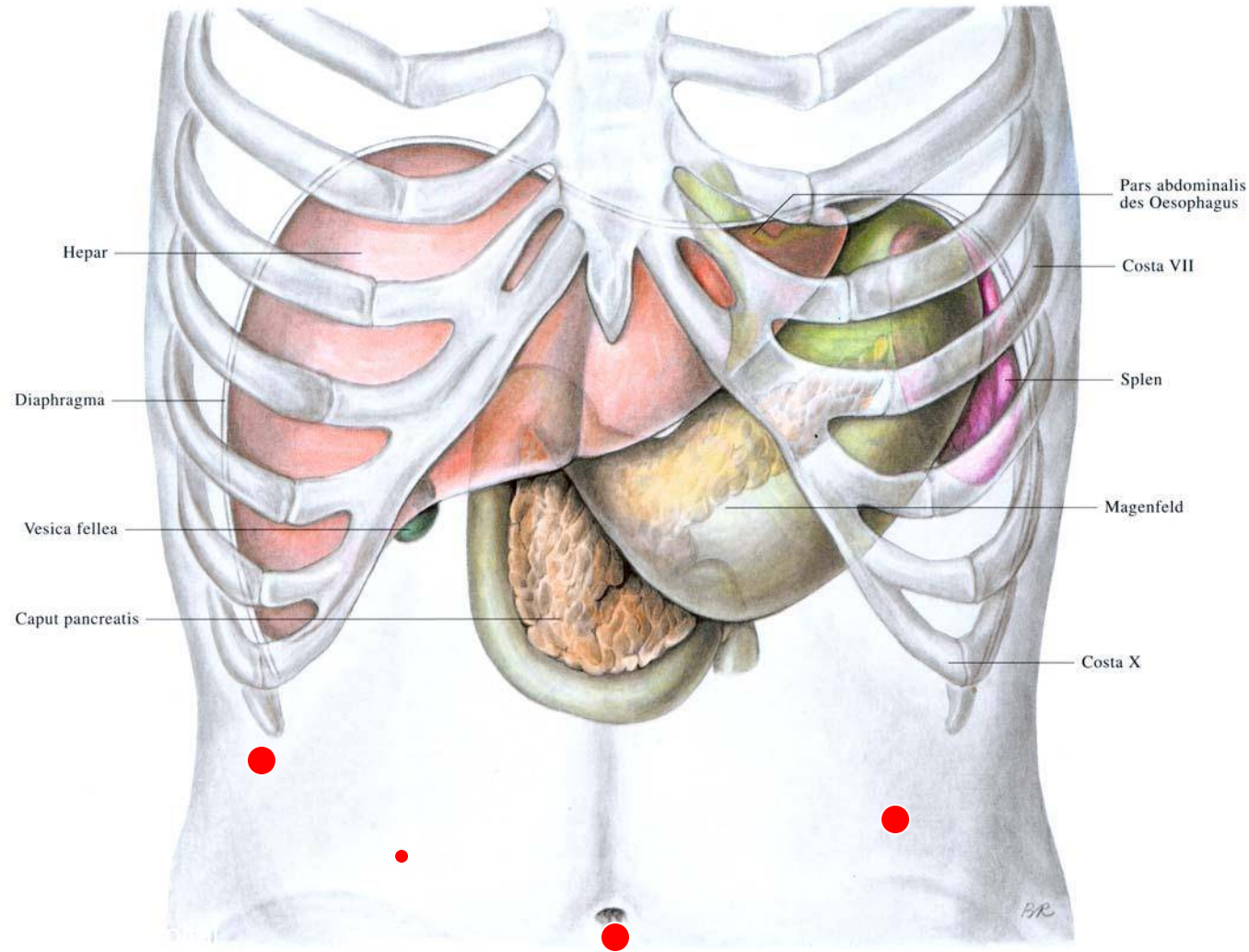


Perforated peptic ulcer

Operative therapy (closure+lavage)

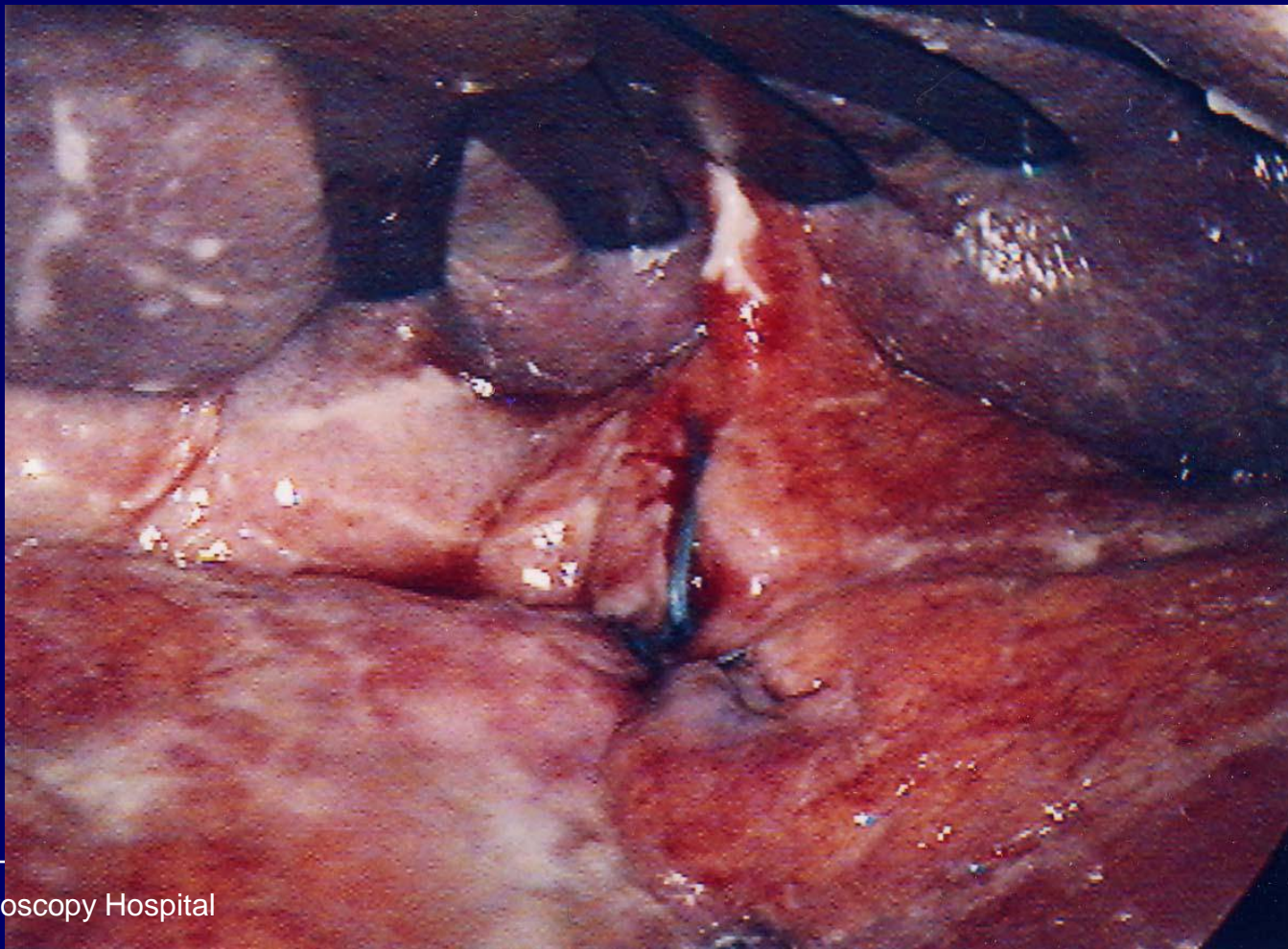
- Only after resuscitation
- Closure+lavage
- Postoperative gastric aspiration
- Acid suppression (PPI' s)
- Antibiotics

Perforated peptic ulcer laparoscopic closure

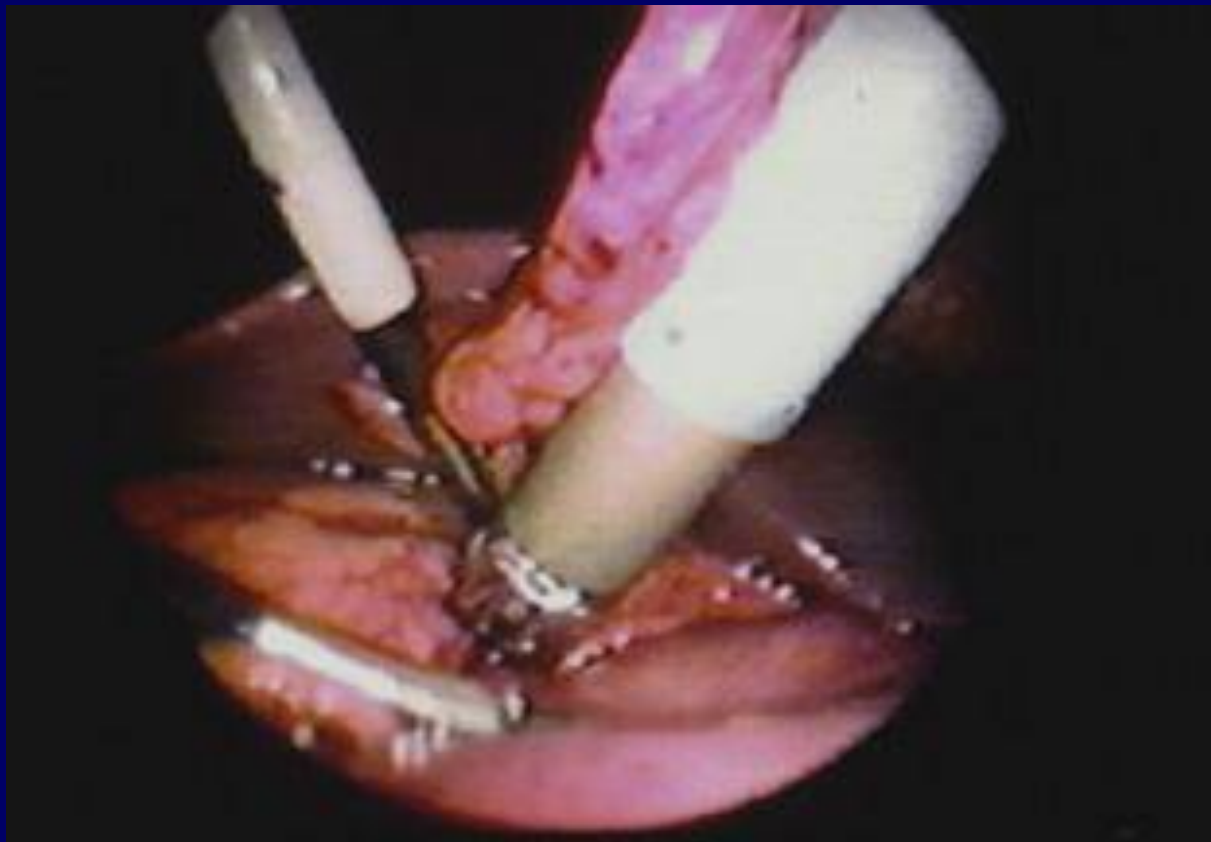




Perforated peptic ulcer laparoscopic closure



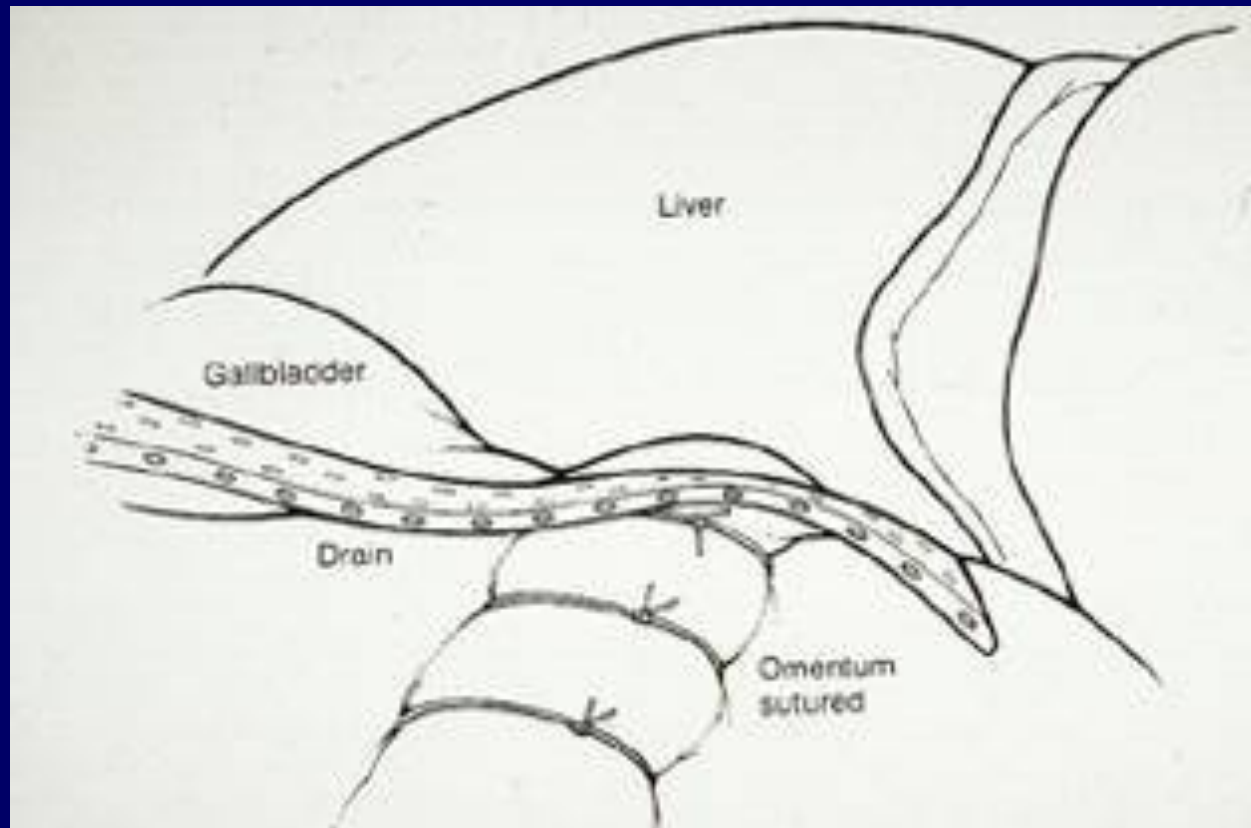
Perforated peptic ulcer (stapler-fixation of omentum)



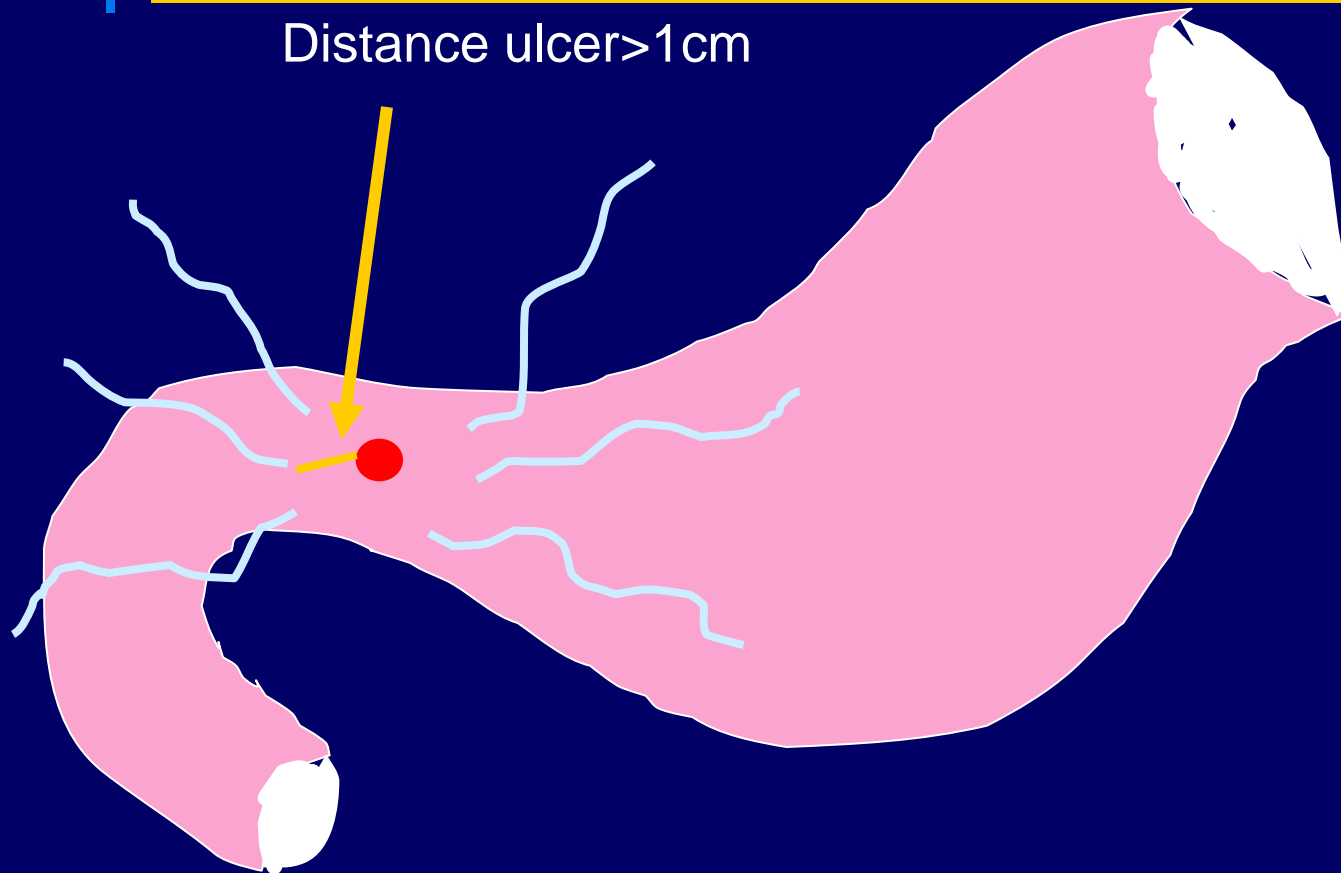
Perforated peptic ulcer rendez vous omental patch



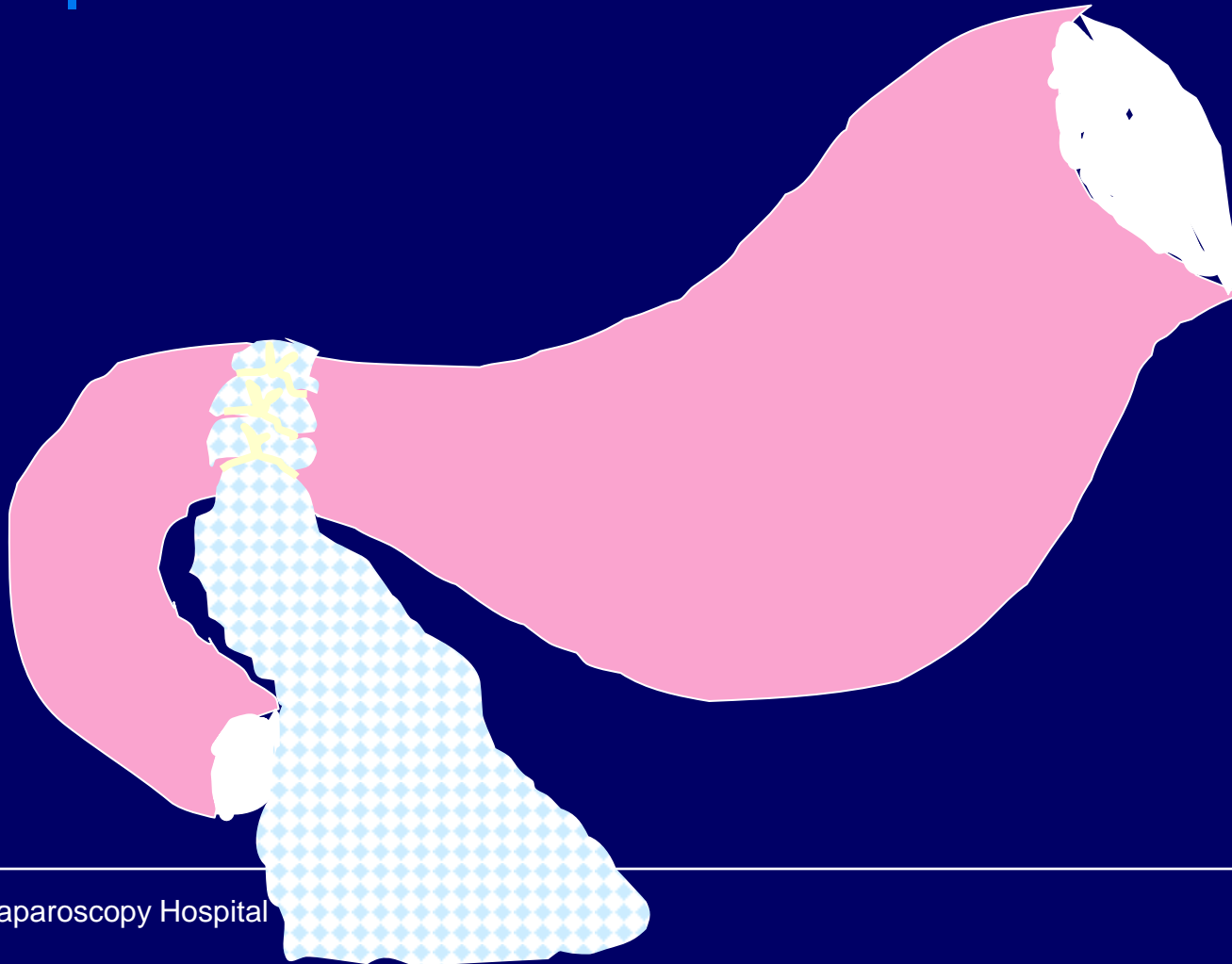
Graham 1937: omental patch plication (without primary closure of ulcer)



Perforated peptic ulcer 3 stitch-Graham omental patch



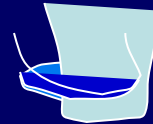
Perforated peptic ulcer 3 stitch-Graham omental patch



Perforated peptic ulcer



Flat tire test





Perforated peptic ulcer operative therapy: abdominal complications

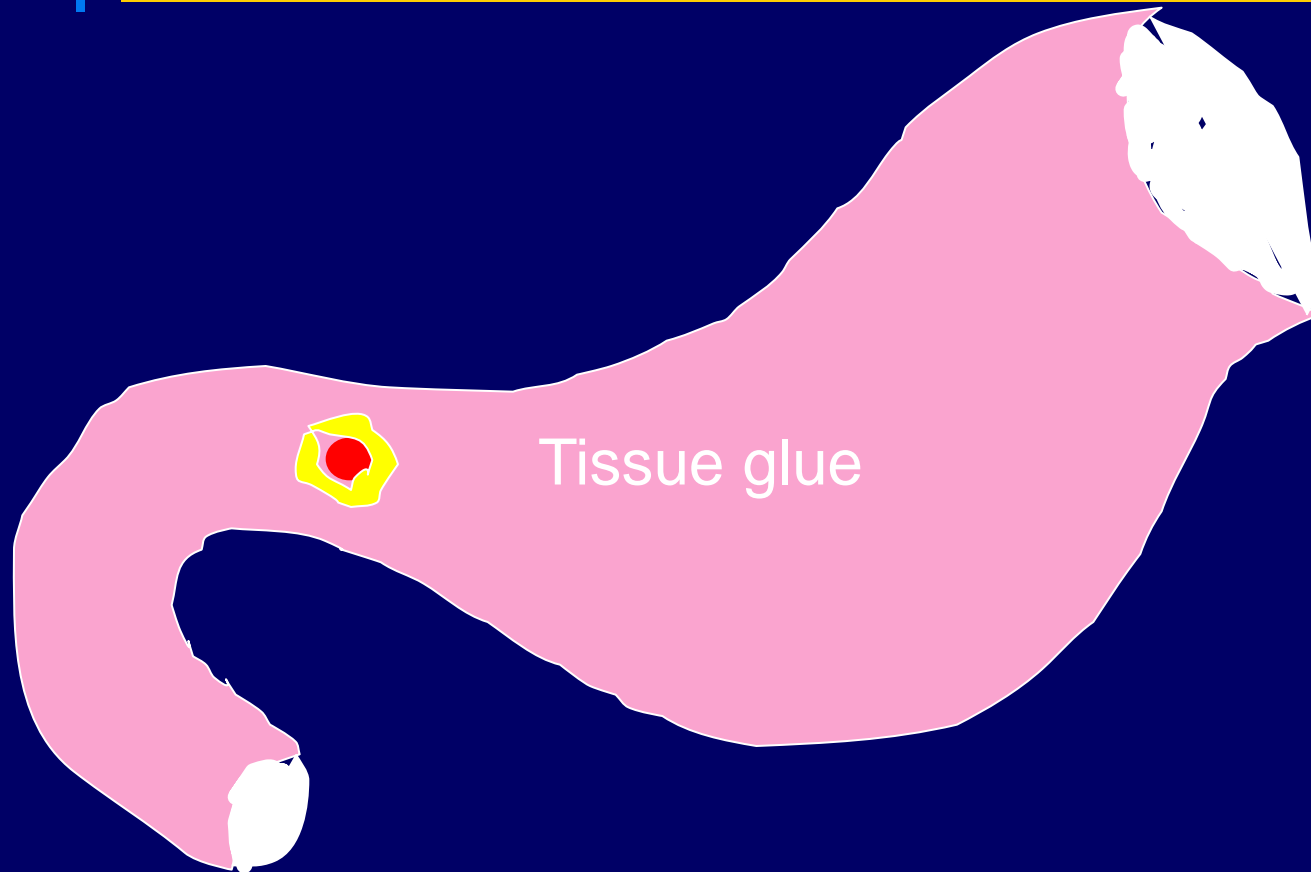
- Re-leakage: 10%
- Intra-abdominal abscess: 3%



Perforated peptic ulcer operative therapy: results

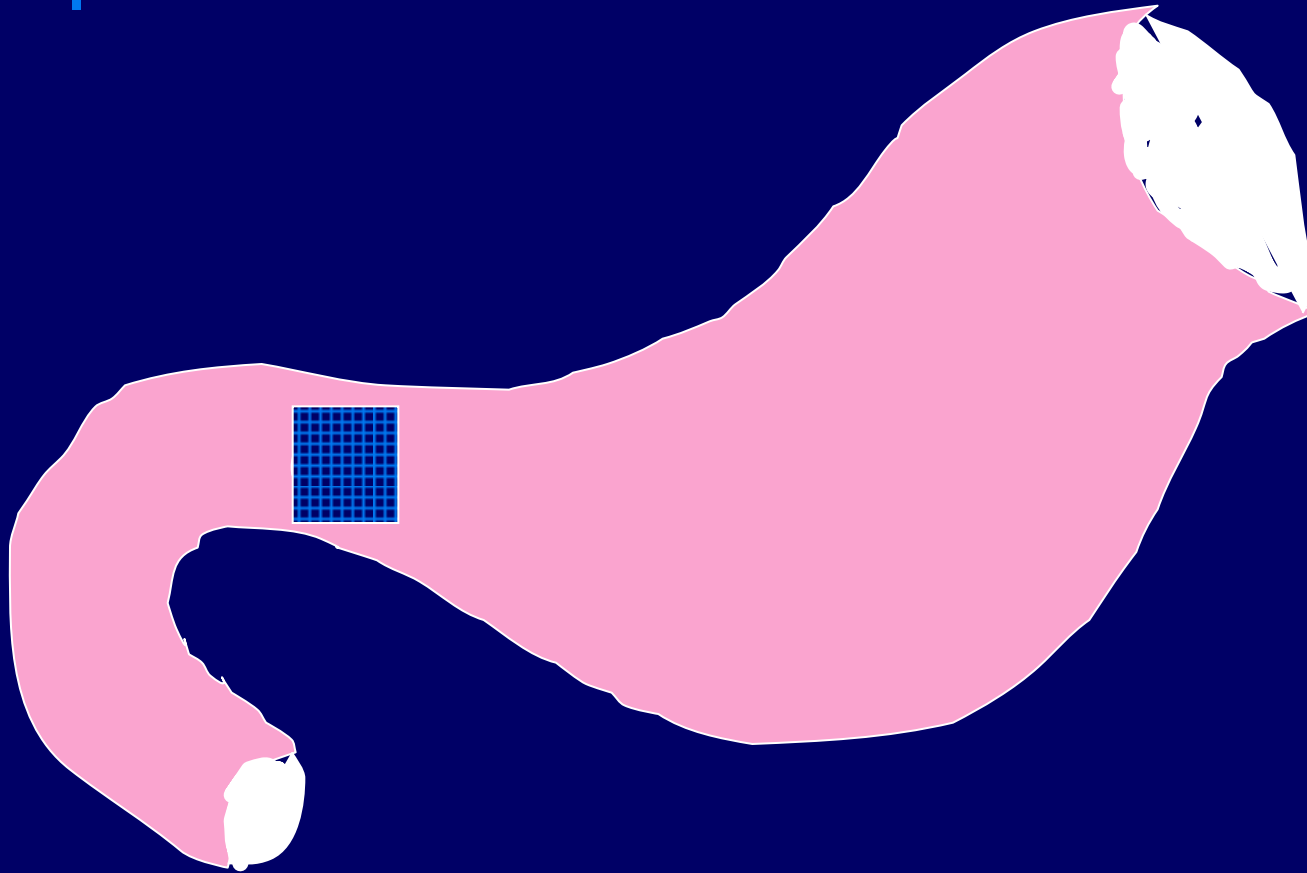
- Mortality: 0-8%
- Morbidity: 13-23%
- Parameters: ASA-, Boey scores
- In general: results correlated with duration of symptoms, ulcer diameter, age

Perforated peptic ulcer



Perforated peptic ulcer

Stamp method



Laparoscopic repair of Duodenal Perforation





Thanks



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