PEPTIC ULCER DISEASE

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PEPTIC ULCER DEATHS
Peptic Ulcer Disease Pathogenesis

ASA & NSAIDs

H. pylori gastritis

Hypersecretory states

Alterations in mucosal defense mechanisms

Acid and pepsin

Ulceration
OPERATIONS FOR PEPTIC ULCER

• Patch or oversew

• Highly selective vagotomy

• Vagotomy and drainage

• Resection +/- vagotomy
OPERATION FOR PEPTIC ULCER: INDICATIONS

• Perforation
• Obstruction
• Bleeding
• Intractability/nonhealing/possible cancer
• Recurrent or marginal ulcer
PEPTIC ULCER HOSPITAL ADMISSIONS 2006

Admissions

- Bleeding
- Perforation
- Obstruction
- Other

Wang et al, Annals of Surgery, 2010
**Methods:** All patients undergoing operation for bleeding or perforated PU at a university hospital from 2002 to 2012 were reviewed. Clinical and demographic factors were statistically assessed as risk factors for in-hospital death and increased LOS.

**Results:** 129 patients were operated upon for perforation (74%, N=95) or bleeding (26%, N=34). Ulcer site was 41% gastric, 45% duodenal, or 14% marginal. Mean age was 54 years, with 47% female and 65% white. 28% (N=36) developed complicated PU during hospitalization for critical illness (“stress ulcer”) and 20% (N=26) had prior gastric surgery including Roux Y gastric bypass (n=15). Hospital mortality was 23%; an additional 20% died at a median 265 days post discharge. Significant (p<0.05) risk factors for hospital mortality on univariate analysis were age>70, cirrhosis, chronic kidney disease (CKD), ulcer site (duodenal > gastric > anastomotic), bleeding ulcer, and vagotomy; and on multivariate analysis age >70 (OR=4.5) and cirrhosis (OR=8.3). Median LOS was 16 days (range 3-99). Significant (p<0.05) risk factors for increased LOS by multivariate analysis were: heart disease, CKD, stress ulcer, and gastric resection.
MANAGEMENT OF PERFORATED DU

• SECURE CLOSURE

• DRAINAGE

• DECOMPRESSION

• (DIVERSION)
A

Omentum

Space between duodenal serosa and omentum

Duodenum

B

Ulcer perforation plugged with omentum
Perforated Ulcer: Definitive Operation?

• YES
  • GOOD RISK PT
  • CHRONIC
  • ??H.PYLORI
  • HIGH ULCER RISK
  • UNRELIABLE PT
  • FAILED MED RX

• NO
  • POOR RISK PT
  • ACUTE
  • + H PYLORI
  • LOW ULCER RISK
  • RELIABLE PT
  • UNTREATED
OPERATION FOR PERFORATED ULCER

- DUODENAL
  - PATCH
  - PATCH / HSV
  - PATCH / TV+D

- GASTRIC
  - BX / PATCH
  - WEDGE
  - DISTAL GASTREX
Gastric Outlet Obstruction

- Fewer than 5% of patients develop gastric outlet obstruction from pyloric stenosis. Duodenal ulcers give rise to pyloric stenosis more often than gastric ulcers. Peptic ulcer disease may be accompanied by varying degrees of obstruction caused by inflammatory swelling of the pyloric channel or chronic scarring associated with fibrosis.
Glasgow-Blatchford bleeding score (GBS)

- 0 score: low risk, outpatient management
- 6 > score: >50% risk of needing an intervention

<table>
<thead>
<tr>
<th>Admission parameter</th>
<th>Score value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Urea (mg/dL)</strong></td>
<td></td>
</tr>
<tr>
<td>≥6.5 to &lt;8.0</td>
<td>2</td>
</tr>
<tr>
<td>≥8 to &lt;10.0</td>
<td>3</td>
</tr>
<tr>
<td>≥10.0 to &lt;25.0</td>
<td>4</td>
</tr>
<tr>
<td>≥25.0</td>
<td>6</td>
</tr>
<tr>
<td><strong>Haemoglobin (g/dL)</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Men</strong></td>
<td></td>
</tr>
<tr>
<td>≥12.0 to &lt;13</td>
<td>1</td>
</tr>
<tr>
<td>≥10.0 to &lt;12.0</td>
<td>3</td>
</tr>
<tr>
<td>&lt;10.0</td>
<td>6</td>
</tr>
<tr>
<td><strong>Women</strong></td>
<td></td>
</tr>
<tr>
<td>≥10.0 to &lt;12.0</td>
<td>1</td>
</tr>
<tr>
<td>&lt;10.0</td>
<td>6</td>
</tr>
<tr>
<td><strong>Systolic BP (mmHg)</strong></td>
<td></td>
</tr>
<tr>
<td>100 to 109</td>
<td>1</td>
</tr>
<tr>
<td>90 to 99</td>
<td>2</td>
</tr>
<tr>
<td>&lt;90</td>
<td>3</td>
</tr>
<tr>
<td><strong>Other parameters</strong></td>
<td></td>
</tr>
<tr>
<td>Pulse &gt;100 bpm</td>
<td>1</td>
</tr>
<tr>
<td>Melena at presentation</td>
<td>1</td>
</tr>
<tr>
<td>Syncope</td>
<td>2</td>
</tr>
<tr>
<td>Hepatic disease</td>
<td>2</td>
</tr>
<tr>
<td>Cardiac failure</td>
<td>2</td>
</tr>
</tbody>
</table>

## Calculation of Rockall Score

**High risk score > 5  Low risk score ≤ 5**

<table>
<thead>
<tr>
<th>Variable</th>
<th>Score</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td>&lt;60</td>
<td>60-79</td>
<td>&gt;80</td>
<td></td>
</tr>
<tr>
<td>Shock</td>
<td></td>
<td>No shock SBP≥100 PR&lt;100</td>
<td>Tachycardia SBP≥100 PR≥100</td>
<td>Hypotension SBP&lt;100</td>
<td></td>
</tr>
<tr>
<td>Co Morbidity</td>
<td></td>
<td>No major Co-morbidity</td>
<td>Cardiac Failure, IHD, any major co-morbidity</td>
<td>Renal failure, liver failure disseminated malignancy</td>
<td></td>
</tr>
<tr>
<td>Diagnosis</td>
<td></td>
<td>Mallory-Weiss tear, no lesion identified, no SRH or blood</td>
<td>All other diagnosis</td>
<td>Malignancy of upper GI tract</td>
<td></td>
</tr>
<tr>
<td>Major SRH</td>
<td></td>
<td>None or dark spot</td>
<td>Blood in upper GI tract, adherent clot, visible or spurring vessel</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

SBP = systolic blood in mmHg  PR = pulse rate  IHD = Ischaemic heart Disease  
GI = gastrointestinal  SRH = Stigmata recent Haemorrhage  
<table>
<thead>
<tr>
<th>Forrest class</th>
<th>Evidence /stigmata of recent bleeding</th>
</tr>
</thead>
<tbody>
<tr>
<td>IA</td>
<td>Arterial or spurting hemorrhage</td>
</tr>
<tr>
<td>IB</td>
<td>Oozing hemorrhage</td>
</tr>
<tr>
<td>IIA</td>
<td>Visible vessel</td>
</tr>
<tr>
<td>IIB</td>
<td>Adherent clot</td>
</tr>
<tr>
<td>IIC</td>
<td>Dark base/ haematin covered lesion</td>
</tr>
<tr>
<td>III</td>
<td>Lesions without active bleeding</td>
</tr>
</tbody>
</table>
BLEEDING PEPTIC ULCER:
ENDOSCOPIC HEMOSTASIS WORKS

RELATIVE RISK

Cook DJ et al, Gastro 102:139; 1992
CONSIDER OPERATION FOR BLEEDING PEPTIC ULCER

• MASSIVE BLEED
  • SHOCK
  • ENDOSCOPIC HEMOSTASIS FAILS
  • TRANSFUSION > 5 UNITS?

• HIGH RISK STIGMATA
  • ACTIVE BLEEDING
  • VISIBLE VESSEL
  • POSTERIOR DU; LESSER CURVE GU

• OTHER (age?, rebleeding?)
WHICH OPERATION FOR BLEEDING ULCER?
RANDOMIZED PROSPECTIVE TRIALS

![Bar chart showing rebleed and death rates for different operations.](chart.png)
NISSEN CLOSURE OF DUODENAL STUMP
Rodkey GV and Welch CE, NEJM, 1960
Fig. 1h. Third anterior layer (3-0 cotton).
i. Completed anastomosis.

INTRACTABLE/RECURRENT/MARGINAL ULCER IS UNUSUAL IF:

- Low acid
- No NSAIDs or ASA
- No smoking
- No ischemia
- No cancer
Stomach
Postgastrectomy Syndromes

• Due to denervation of stomach the pyloric mechanism becomes incompetent and the control of stomach emptying is abolish. If we add the re-anastomotic of duodenum, posgastrectomy syndromes are the consequence.
• Early Dumping syndrome
• Late dumping syndrome
• Post-vagotomy Diarrhea
• Afferent loop obstruction
• Blind loop syndrome
• Alkaline Reflux gastritis
• Recurrent ulcer Ds
• Gastric atony
• Metabolic disturbances
Retained antrum syndrome

THANK YOU