Dieulafoy’s Lesion

Sean Rim
SUNY Downstate
9/24/09
Case Presentation

- 30 year old male, otherwise healthy
- One day history of painless BRBPR and fatigue
- Daughter had fever and diarrhea for several days
Case Presentation

- PMH: none
- Medications: none
- Social Hx: no alcohol or tobacco
Case Presentation

- Exam:
  - BP 105/60 HR 80
  - Awake and alert
  - Abd soft, nontender
  - Rectal maroon stool, no hemorrhoids or masses
  - NG lavage bilious, no blood
Case Presentation

- Labs
  - HCT 32
  - Coags WNL
  - Chem WNL

- Imaging
  - AXR WNL
Case Presentation

- Differential
  - PUD
  - Diverticular disease
  - Infectious colitis

- Admitted to MICU
  - Started on nexium drip and antibiotics
  - Plan for upper and lower endoscopy
Case Presentation

- Has large BRBPR, HR 110, BP 90/55
- Responds to IVF and 2 units PRBC
- Undergoes bleeding scan
Bleeding Scan
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Angiography
Angiography
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Angiography
• Another episode of BRBPR on angio table
• Up to 6 units PRBC and 4 units FFP
• Decision for surgery
• Another episode of BRBPR on angio table
• Up to 6 units PRBC and 4 units FFP
• Decision for surgery
  □ ???
Operative course

- Midline laparotomy
- 3 cm mass palpable in proximal jejunum
- Segmental resection with anastomosis

- OR time 60 min
- EBL 50 cc
- 3 liters crystalloid
- 2 units PRBC
Postop course

- POD 3 started on diet
- POD 5 discharged home

- Pathology
  - Dieulafoy’s lesion in jejenum
Acute GI Hemorrhage

- 300,000 admissions annually in the U.S.
- Common complication in hospitalized patients
- Increases with age
Management is Multidisciplinary

- Gastroenterology
- Intensive care
- Interventional radiology
- Surgery
  - 10% of patients require operative intervention
Classifying the Bleed

- UGIB 80%
- LGIB 20%
- Obscure bleeding
  - Persistent bleed after negative endoscopy
Signs

- Hematemesis
  - UGI
  - Oropharyngeal
- Melena
  - Hematin
  - Black, tarry, foul-smelling
- Hematochezia
  - Can be UGI source
**Initial assessment and resuscitation**
Assess airway, breathing, and circulation (ABCs)
Assess magnitude of bleeding
Initiate appropriate monitoring
Laboratory evaluation

**History and exam**
Identify risk factors
Previous surgery
Medications

**Localize bleeding**
Nasogastric tube aspirate
Endoscopy
Other studies as needed

**Initiate therapy**
Pharmacologic
Endoscopic
Angiographic
Surgical
“BLEED” criteria

- Ongoing Bleeding
- **Low** SBP < 100
- **Elevated** PT/INR > 1.2
- Erratic/ altered mental status
- Comorbid Disease

“BLEED” criteria

- 3x increased risk
  - Recurrent hemorrhage
  - Surgical intervention
  - Death

“Six Unit Rule”

- Increased morbidity and mortality
  - Elderly
  - Significant comorbidities
- Hemodynamic instability despite appropriate resuscitation
- Failed endoscopy x 2
- Continued slow bleeding >3 units/day
# Sources of UGI bleeds

<table>
<thead>
<tr>
<th>Nonvariceal Bleeding</th>
<th>80%</th>
<th>Portal Hypertensive Bleeding</th>
<th>20%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peptic ulcer disease</td>
<td>30-50%</td>
<td>Gastroesophageal varices</td>
<td>&gt;90%</td>
</tr>
<tr>
<td>Mallory-Weiss tears</td>
<td>15-20%</td>
<td>Hypertensive portal gastropathy</td>
<td>&lt;5%</td>
</tr>
<tr>
<td>Gastritis or duodenitis</td>
<td>10-15%</td>
<td>Isolated gastric varices</td>
<td>&lt;1%</td>
</tr>
<tr>
<td>Esophagitis</td>
<td>5-10%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>AVM</td>
<td>5%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tumors</td>
<td>2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>5%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Managing UGI bleeds

- Early EGD <24 hours
- 20% to 35% require therapeutic intervention
- 5% to 10% will eventually require surgery
- Unable to localize with EGD
  - Bleeding scan
  - Angiography
  - Surgery
## Sources of Lower GI bleeds

<table>
<thead>
<tr>
<th>Source</th>
<th>Colon Percentage</th>
<th>Small Bowel Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Colon</td>
<td>95%</td>
<td>5%</td>
</tr>
<tr>
<td>Diverticular</td>
<td>30-40%</td>
<td>Angiodysplasia 10-40%</td>
</tr>
<tr>
<td>Ischemia</td>
<td>5-10%</td>
<td>Ulcers 5-15%</td>
</tr>
<tr>
<td>Anorectal</td>
<td>5-15%</td>
<td>Crohn’s 5-10%</td>
</tr>
<tr>
<td>Neoplasia</td>
<td>5-10%</td>
<td>Radiation 5%</td>
</tr>
<tr>
<td>Infectious</td>
<td>3-8%</td>
<td>Meckel’s 5%</td>
</tr>
<tr>
<td>Postpolypectomy</td>
<td>3-7%</td>
<td>Neoplasia 5%</td>
</tr>
<tr>
<td>IBD</td>
<td>3-4%</td>
<td>Aortoenteric fistula &lt;1%</td>
</tr>
<tr>
<td>Angiodysplasia</td>
<td>3%</td>
<td></td>
</tr>
<tr>
<td>Radiation</td>
<td>1-3%</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>1-5%</td>
<td></td>
</tr>
<tr>
<td>Unknown</td>
<td>10-25%</td>
<td></td>
</tr>
</tbody>
</table>
Lower GI bleed

- Less severe and more intermittent
- Hematochezia
- Melena?
- Anorectal exam
- NG lavage ± EGD
- Colonoscopy for the intermittent bleeder
- Detects 0.1 mL/min
- Localizes 40% to 60%
- Detects 0.5 to 1 mL/min
- Therapeutic capability
Obscure sources of GI bleeds

- **Bleeding that persists or recurs after an initial negative evaluation with both EGD and colonoscopy**
Obscure sources of GI bleeds

- **Bleeding that persists or recurs after an initial negative evaluation with both EGD and colonoscopy**
  - Recurrent episodes of hemorrhage
  - Less than 1% of all GI bleeds
Obscure GI bleed

- Angiodysplasia
- Neoplasia
- Crohn's disease
- Meckel's diverticulum
- Colitis
- Peptic ulcer disease
- Ulcerative colitis
- Aortoenteric fistula
- Lymphoma
- Radiation enteritis
- Ischemic colitis
- Hemorrhoids

- HIV-related causes
- Bacterial infection
- Solitary rectal ulcer
- Sarcoidosis
- Amyloidosis
- Hemobilia
- Hemosuccus pancreaticus
- Endometriosis
- Dieulafoy's lesion
Obscure GI bleed

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- **Dieulafoy's lesion**
Obscure GI bleed

- Repeat endoscopy can pick up 35% of missed sources
- Small bowel investigation warranted
  - Bleeding scan
  - Angiography
  - Push endoscopy 40% sensitivity
  - Capsule endoscopy 90% sensitivity
  - Intraoperative endoscopy

Dieulafoy’s Lesion

- Large submucosal arteriole, 1-3 mm, that does not undergo normal branching

Dieulafoy’s Lesion

- *Large submucosal arteriole, 1-3 mm, that does not undergo normal branching*
- Erodes through mucosa
- No surrounding inflammation
- Rupture leads to massive hemorrhage

Dieulafoy’s Lesion

- 2% - 5% of all GI bleeds
  - 6 cm from GE junction 95%
  - Extragastic 5%
    - Colon 10%
    - Esophagus 2%
    - Jejunum 2%

Dieulafoy’s Lesion

- 2% - 5% of all GI bleeds
  - 6 cm from GE junction 95%
  - Extragastric 5%
    - Colon 10%
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    - Jejunum 2%

Jejunal Dieulafoy’s accounts for 0.002% to 0.005% of all GI bleeds

Clinical presentation and endoscopic management of Dieulafoy’s lesions in an urban community hospital

- Retrospective review of 15 patients between 2000 to 2006
  - Mean age 79
  - 13/15 patients in shock
  - Mean hemoglobin 9.5
  - Mean transfusion 3 units PRBC

Clinical presentation and endoscopic management of Dieulafoy’s lesions in an urban community hospital

<table>
<thead>
<tr>
<th>Findings</th>
<th>Hematemesis and or Melena (Total 834)</th>
<th>Melena (Total 460)</th>
<th>Hematochezia (Total 330)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AVM</td>
<td>3</td>
<td>10</td>
<td>2</td>
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<tr>
<td>Esophagitis</td>
<td>206</td>
<td>122</td>
<td>63</td>
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<tr>
<td>Gastritis</td>
<td>589</td>
<td>360</td>
<td>281</td>
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<tr>
<td>MW tear</td>
<td>18</td>
<td>22</td>
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<tr>
<td>Tumor</td>
<td>9</td>
<td>4</td>
<td>0</td>
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<tr>
<td>Ulcer</td>
<td>245</td>
<td>198</td>
<td>71</td>
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<tr>
<td>Varices</td>
<td>128</td>
<td>45</td>
<td>15</td>
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<tr>
<td>Dieulafoy’s Lesion</td>
<td>11</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Patient</td>
<td>Age (yr)</td>
<td>Hgb at Presentation (gm/dL)</td>
<td>Location of Dieulafoy’s Lesion</td>
</tr>
<tr>
<td>---------</td>
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</tr>
<tr>
<td>1</td>
<td>76</td>
<td>7.6</td>
<td>Esophagus</td>
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<tr>
<td>2</td>
<td>81</td>
<td>7.9</td>
<td>Esophagus</td>
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<tr>
<td>3</td>
<td>87</td>
<td>11.2</td>
<td>Cardia of Stomach</td>
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<tr>
<td>4</td>
<td>90</td>
<td>9.8</td>
<td>Body of Stomach</td>
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<tr>
<td>5</td>
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<td>10</td>
<td>Cardia of Stomach</td>
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<td>6</td>
<td>78</td>
<td>11.2</td>
<td>Fundus of Stomach</td>
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<td>7</td>
<td>68</td>
<td>7</td>
<td>Body of Stomach</td>
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<td>73</td>
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</tr>
<tr>
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<td>11.3</td>
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<tr>
<td>12</td>
<td>84</td>
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<td>13</td>
<td>80</td>
<td>7.8</td>
<td>Duodenum</td>
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<td>14</td>
<td>82</td>
<td>8.7</td>
<td>Fundus</td>
</tr>
<tr>
<td>15</td>
<td>86</td>
<td>9</td>
<td>Fundus</td>
</tr>
</tbody>
</table>

- Gastric 13/15
- Esophageal 2/15
- Repeat therapy 5/15
- Mortality 1/15
In conclusion
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- 10% of patients with GI bleeding will require operative intervention
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- Lower threshold for unstable patients requiring multiple transfusions
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• EGD essential when UGI source suspected
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- Lower threshold for unstable patients requiring multiple transfusions
- EGD essential when UGI source suspected
- Obscure sources are rare but problematic
- Long list of differentials


