Management of Cecal Volvulus

Christopher Lau
Kings County Hospital
SUNY Downstate Medical Center
February 24, 2011
HPI

- 37 year old male presented with 1 day history of abdominal pain
- Pain was diffuse but worst in the epigastric area
- No fevers or chills
- No nausea or vomiting
- No diarrhea or constipation
- Last BM and flatus 1 day prior
History

- PMH: lumbar disc herniation
- PSH: appendectomy in childhood
- No allergies
- Medications: Toradol, cyclobenzaprine
Physical Exam

- T 97.5, BP 114/73, HR 75, RR 18
- Gen: AAOx3, NAD
- CVS: S1S2, regular rate and rhythm
- Chest: CTA bilaterally
- Abd: soft, mild diffuse tenderness and distension, decreased bowel sounds, no rebound or guarding, healed RLQ scar
- Rectal: normal, no masses, guaiac negative
Laboratory

- CBC: 5.16>14.3/43.1<211
- Chemistry: 138/4/101/26/12/1.03<94, Ca: 10.8
- LFT: 7.8/4.8/35/32/65/0.6
- Lactate: 1.6
- Coags: 11.4/27.7/1.1
Abdominal X-ray
Abdominal X-ray
CT: “whirl” sign
CT: “bird beak” sign
Operation

- Exploratory laparotomy via midline incision
- Severely dilated cecum was brought out and found to be volvulized
- Bowel was pink and viable
- Volvulus was reduced
- Ileocecectomy with primary anastamosis performed
- Notably the patient had a very long small bowel mesentery and very redundant transverse and sigmoid colon
Post-op

- POD 1-2: NPO awaiting bowel function
- POD 3: NG tube removed and clear liquids tolerated
- POD 4: Tolerating regular diet
- POD 5: Discharged home

Pathology: Cecum 10cm in greatest diameter, thin walled. Markedly thinned bowel mucosa with prominent thickened vessels consistent with volvulus.
Cecal Volvulus
Cecal Volvulus

- Axial twisting involving the cecum, terminal ileum, and ascending colon (90%)
- A variant is cecal bascule (10%)
  - An upward anterior folding of the cecum
- Responsible for 1% of intestinal obstructions
  - 18-44% of colonic obstructions
- Age at presentation is affected by cultural and dietary factors
- Average age at presentation is 53 in Western countries
Pathogenesis

- Incomplete intestinal rotation during embryogenesis
- Inadequate fixation of the right colon to the retroperitoneum
- 11-25% of the population have a cecum that is sufficiently mobile to allow torsion

Risk Factors

- Previous abdominal surgery
- High fiber intake
- Chronic constipation
- Adynamic Ileus
- Distal colonic obstruction
Clinical Presentation

• Recurrent intermittent
  • May occur in up to 50% before onset of acute volvulus
  • Recurring right lower quadrant abdominal pain and distension

• Acute obstructive
  • Presentation similar to small bowel obstruction
  • Difficult to distinguish based on clinical exam
  • May progress to strangulation and perforation
    • Severe abdominal pain, peritonitis, hemodynamic instability
Imaging

- **X-ray**
  - Cecal dilation 98-100%
  - Single air-fluid level 72-88%
  - Dilated small bowel 42-55%
  - Findings are non-specific
Imaging

- Barium enema
  - Diagnostic accuracy 88%
  - Smooth tapering cut off ("beak sign") is the most common confirmatory finding
  - Occasional successful reduction
  - Potential for contrast extravasation
Imaging

- Abdominal CT
  - Recommended when x-ray and clinical exam inconclusive
  - Replacing barium enema as study of choice
  - Common CT findings:
    - “coffee bean” sign
    - “whirl” sign
    - “bird beak” sign
  - May sometimes see gas-filled appendix
  - May help identify ischemia and perforation
“Whirl” sign
“Bird beak” sign
Colonoscopy

- Value is limited
- Success rate of reduction is 30%
- Risk of perforation
- Delays operative treatment
- Because of high risk of bowel ischemia, operative treatment is usually required
- Generally not recommended
Surgical Management

- No prospective treatment trials
- Options include:

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Recurrence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Operative detorsion</td>
<td>0-70%</td>
</tr>
<tr>
<td>Cecopexy</td>
<td>0-40%</td>
</tr>
<tr>
<td>Cecostomy</td>
<td>0-30%</td>
</tr>
<tr>
<td>Colectomy</td>
<td>No reported recurrence</td>
</tr>
</tbody>
</table>

- Choice of procedure is surgeon and patient dependent
Laparotomy

- Determine viability of bowel
- Gangrenous cecum is reported in 23-100%
- Non-viable bowel requires resection
  - Avoid detorsion which may lead to irreversible shock
- Clearly viable bowel may be detorsed and treated with fixation vs. resection
- Manual detorsion alone is not recommended
Laparoscopy

- Several case reports of laparoscopic cecopexy for cecal volvulus
- May be a viable options
- Needs further assessment
- No reports of laparoscopic colectomy for cecal volvulus


Summary

- Cecal volvulus occurs mostly in those with developmental predisposition who are exposed to environmental risk factors
- Diagnosis is most commonly by x-ray and CT findings
- Treatment options include fixation and resection procedures
- Colonoscopy is not recommended
- Laparoscopic fixation may be an effective option
References

• Cameron: Current Surgical Therapy 10th edition