How to Manage Intra-Abdominal Abscesses in Crohn’s Disease

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No disclosures
Intra-Abdominal Abscesses in CD

The problem:
10-30% of patients with CD will have an intra abdominal abscess
-- at presentation
-- spontaneous at some time during course of disease
-- as a post-op complication

The Solution:
Surgery
Medication
Combination of medicine and Percutaneous Drainage
Natural history of Crohn’s disease (penetrating phenotype)

• Over 10% of Crohn’s disease patients develop an abdominal or pelvic abscess over a lifetime of illness.*
  - Ileal cecal area most likely involved

• Thia KT et al **
  Population based cohort
  14.0% had penetrating disease at baseline
  --Complications (stricture or penetrating disease)
    5 years: 33%
    20 years: 50%

**Thia KT et al. Gastroenterology 2010:139:1147-1155. Mayo
Impact of Therapy May Depend on Degree of Structural Damage

CD and Abscesses

• The most common location in the small bowel associated with an abscess is the terminal ileum.

• Patients most likely to develop an abscess are those with penetrating disease who are not responding to optimal medical management.
Medical Management - Percutaneous Drainage

- Early reports by Casola in 1987 and Lambiase in 1988

- Short term outcomes - obviates need for surgery in 56% - 90% (< 3 months)

- Long term outcomes - 31% - 50% may require surgery related to abscess recurrence (3 - 12 months)

Guiterrez et al. Am J of Gastroenterol 2006; 101:2283-89. (MGH)
Percutaneous Drainage
Psoas abscess and CD

Retroperitoneal phlegmon

Abscess cavity

Retroperitoneal percutaneous drain

Postop non-necrotizing, gas-forming soft tissue infection
What about managing CD abscesses with biologics?

Infliximab (1998)
Adalimumab (2007)
Certolizumab (2008)

........... little data
Management of CD Abscesses in the biologic era*

95 patients

55 medical management +/- PCD

40 surgical management

Surgical Indications

- Not amenable to percutaneous drainage (n=15, 37.5%)
- High severity of illness (n=9, 22.5%)
- Multiple lesions (n=9, 22.5%)
- Obstructive symptoms (n=7, 17.5%)
## Baseline Clinical Characteristics

<table>
<thead>
<tr>
<th></th>
<th>Medical Management</th>
<th>Surgical Management</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( n = 55 )</td>
<td>( n = 40 )</td>
</tr>
<tr>
<td>Female</td>
<td>33 (60%)</td>
<td>15 (38%)</td>
</tr>
<tr>
<td>Median age, years (range)</td>
<td>44.7 (18.2-68.6)</td>
<td>31.2 (11.8-78.7)</td>
</tr>
<tr>
<td>Median Crohn’s disease duration, years (range)</td>
<td>13.4 (0.1-45.8)</td>
<td>5.95 (0.1-40.5)</td>
</tr>
<tr>
<td>Location of active disease at abscess diagnosis</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Ileum</td>
<td>22 (40%)</td>
<td>10 (25%)</td>
</tr>
<tr>
<td>b) Other small bowel</td>
<td>7 (13%)</td>
<td>6 (15%)</td>
</tr>
<tr>
<td>c) Colon</td>
<td>15 (27%)</td>
<td>12 (30%)</td>
</tr>
<tr>
<td>d) small bowel and colon</td>
<td>11 (20%)</td>
<td>12 (30%)</td>
</tr>
<tr>
<td>History of perianal disease</td>
<td>19 (35%)</td>
<td>11 (28%)</td>
</tr>
<tr>
<td>History of penetrating disease</td>
<td>42 (76%)</td>
<td>28 (70%)</td>
</tr>
</tbody>
</table>
Kaplan-Meier Cumulative Probability of Recurrence of Abscess

Number at Risk

<table>
<thead>
<tr>
<th>Years</th>
<th>Medical (n=55)</th>
<th>Surgical (n=40)</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>38</td>
<td>29</td>
</tr>
<tr>
<td>1</td>
<td>28</td>
<td>25</td>
</tr>
<tr>
<td>2</td>
<td>20</td>
<td>18</td>
</tr>
<tr>
<td>3</td>
<td>17</td>
<td>15</td>
</tr>
<tr>
<td>4</td>
<td>13</td>
<td>12</td>
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<tr>
<td>5</td>
<td>6</td>
<td>9</td>
</tr>
<tr>
<td>6</td>
<td>4</td>
<td>9</td>
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<tr>
<td>7</td>
<td>2</td>
<td>5</td>
</tr>
<tr>
<td>8</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>9</td>
<td>1</td>
<td>1</td>
</tr>
</tbody>
</table>

Probability of Abscess

- Medical: 31%
p=ns
- Surgical: 20%

Years

0 2 4 6 8 10
Findings

- Recurrence after medical or surgical treatment was the same (31% vs 20%) (ns)
- Risk factor for recurrence: perineal involvement
- Hazard ratio for recurrence was reduced from 1.0 in those receiving no therapy to 0.10 for those on Anti-TNF therapy (p=0.001)
- Hazard ratio for recurrence = 3.0 for ileal disease (p=0.01)
Medical vs Surgical Management in the TNF Era

Summary I

- Medical and surgical management of intra-abdominal abscesses have similar rates of recurrence.

- Most recurrences are in the first 3 months after resolution.

- History of perianal disease and active ileal disease at abscess diagnosis are risk factors for recurrence.
Medical vs Surgical Management in the TNF Era

Summary II

• Abscess size and duration of Crohn’s disease are **not** risk factors for recurrence

• Initiation of anti-TNF or immunomodulator therapy post-drainage likely reduces rate of abscess recurrence
What about Phlegmons?

**Definitions:**

- **Abscess:**
  Enhancing extraluminal fluid collection $\geq 1\text{cm}$
  Confirmed by imaging (CT, MRI, or ultrasound)
  Aspiration of pus via percutaneous drainage or surgery
  Whereas ..... 

- **Phlegmon:** ill defined inflammatory mass

- **Incidence?** Among 357 patients with CTent at Mayo: 3.4% with phlegmon
A Phlegmon
Abdominal Phlegmons & Anti-TNF*

- Among 409 IBD patients treated, 13(3%) had a phlegmon
- Median disease duration: 6 years
- 12 of 13 also had an abscess
- All treated with anti-TNF and antibiotic

Cullen G et al. Inflamm Bowel Dis 2012;18:691-696—Beth Israel
Abdominal Phlegmons & Anti-TNF (n=13)

- Median follow-up 2.3 years
- No infection or exacerbation
- 2 surgery
  - Loss of response to adalimumab after 14 months
  - Ileal stricture after infliximab for 20 months
- 10 of 11 asymptomatic
- No recurrence of an abscess or phlegmon
Abdominal Phlegmons & Anti-TNF

Conclusions

• Medical / non-invasive therapy is appropriate in some patients with Crohn’s disease and internal penetrating disease

• Anti-TNF therapy may decrease recurrence rates
Medical management (+PCD) vs Surgery for Intra abdominal abscesses
Abscesses and CD

- Meta-Analysis of 9 studies comparing PCD vs surgery*
- 513 patients
- Complication rate surgery alone > PCD (OR = 0.58; CI = 0.35-0.96, p = 0.03)
- However, recurrent abscess after PCD alone > after surgery alone (OR = 2.16 CI 1.03-4.54 P = 0.04)
- Although surgery is likely inevitable in CD patients with intra-abdominal abscess, pre-op PCD decreases post-op complications

*He X, et al J Clin Gastroenterol 2015; 49(9):e82-90 (China)
Abscesses and CD

- Percutaneous drainage has converted emergency surgery to elective surgery and has increased the possibility of a successful one-staged procedure.
- IV antibiotics and PCD has become the standard of initial care*.
- Facilitates stabilizing and optimizing patients before definitive surgery is performed (time frames from 1 week to 1 year).

Who to Consider for Medical Management +/- PCD

- Able to control active infection with clinical stability
- High inflammatory burden
- Absence of high grade stricture or complex fistula
- Patients unlikely to need surgery in near future OR those needing “quieting” prior to definitive surgery
Who to consider for primary surgical treatment

• Patients best served **Surgically** are those:
  - with obstructive symptoms
  - with stricture and pre-stenotic dilatation
  - with multiple lesions
  - who are severely ill related to infection / sepsis
  - with a long duration of disease
  - who are “medically refractive”
Guidelines

Neither the ACG nor the AGA provide specific management recommendations beyond stating that, in general, PCD (or surgical drainage), antibiotics, and delayed resection if necessary are management options in patients with an intra-abdominal abscess and Crohn’s Disease.
Management Algorithm
Management of CD Abscesses

Abscess discovered

Post-op abscess
- Antibiotics, percutaneous drain and close clinical observation
  - Consider non-CT sinogram every 1–2 weeks
  - Re-image for clinical deterioration or no substantial clinical improvement within 3–5 days
    - Abscess resolved
      - Start appropriate post-op prophylaxis or treatment
    - Abscess persists
      - Surgery

Spontaneous abscess
- Size <3cm
  - No associated fistula
  - No steroids
  - Antibiotics +/- aspiration and close clinical observation
    - Consider repeat imaging in 4–6 weeks
    - Abscess resolved
    - Abscess persists
      - Start or optimize immunosuppression and evaluate need for delayed surgery

- Size >3cm
  - Fistula present or on steroids
  - Antibiotics, percutaneous drain and close clinical observation
    - Consider non-CT sinogram every 1–2 weeks
    - Abscess resolved
  - Abscess persists
    - Surgery to drain +/- bowel resection
Thank-you
Clinical Scenario

- 34 y/o woman from LA referred for Crohn’s disease management
- Diagnosed age 10 – colonic with peri-anal disease, steroid dependent
- Referred to Mayo 1997 – total proctocolectomy with end ileostomy
- 1998: normal ileoscopy
- 1999: recurrence in distal 30-40 cm of ileum (i,3) with peri-stomal fistula
  - Antibiotics, azathioprine, infliximab (3 doses)
  - Ileostomy revision with relocation of stoma (10cm)
  - Post-op: azathioprine (AZA) 150 mg (2mg/kg)
Medical History - LA

- 2001: discontinued azathioprine with pregnancy
- 2003: 16 week course of budesonide and re-start AZA 150 mg daily
- 2004: tapering course of prednisone
- Worsening symptoms – pain and increased stoma output off prednisone
- 2005: returns to Mayo
Medical History - Mayo

- Pain, increased stoma output
- Fevers
- Currently on AZA 125 mg daily
- PE: moderate RLQ tenderness, below level of stoma
- IP admission:
  - CTE: abscess – abdomen and extends into abdominal wall; active disease in distal 20 cm of ileum; no stricture
  - Ileoscopy – mild stoma stricture (dilated), diffuse ulcerations in distal 30 cm