Crohn’s Disease

Resident Lecture
1/17/19
Objectives

- Features/Classification of Crohn’s Disease
- Medical Treatment
- Surgical Indications
- Surgical Considerations
Case

- 25 yo F presents to your office with chronic mild abdominal pain and diarrhea. She was told by her gastroenterologist that she has Inflammatory Bowel Disease. She thinks her sister had something similar, but she wants to know more about the diagnosis.
Gross Features

- Skip lesions
- Fistulae
- Serositis
- Fat wrapping
- Aphthous ulcers on mucosal surface
  - Tiny, white pinpoint lesions
- Strictures

Microscopic Features

- Mononuclear inflammatory infiltrate
- Crypt abscesses nonuniform
- Vasculitis (20%), neuronal hyperplasia
- Noncaseating granuloma (20-60%)
How do you classify her disease?

<table>
<thead>
<tr>
<th></th>
<th>Vienna</th>
<th>Montreal</th>
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</thead>
<tbody>
<tr>
<td><strong>Age at diagnosis</strong></td>
<td>A1 below 40 years</td>
<td>A1 below 16 years</td>
</tr>
<tr>
<td></td>
<td>A2 above 40 years</td>
<td>A2 between 17 and 40 years</td>
</tr>
<tr>
<td></td>
<td>A3 above 40 years</td>
<td>A3 above 40 years</td>
</tr>
<tr>
<td><strong>Location</strong></td>
<td>L1 ileal</td>
<td>L1 ileal</td>
</tr>
<tr>
<td></td>
<td>L2 colonic</td>
<td>L2 colonic</td>
</tr>
<tr>
<td></td>
<td>L3 ileocolonic</td>
<td>L3 ileocolonic</td>
</tr>
<tr>
<td></td>
<td>L4 upper</td>
<td>L4 isolated upper disease&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td><strong>Behavior</strong></td>
<td>B1 non-stricturing, non-penetrating</td>
<td>B1 non-stricturing, non-penetrating</td>
</tr>
<tr>
<td></td>
<td>B2 stricturing</td>
<td>B2 stricturing</td>
</tr>
<tr>
<td></td>
<td>B3 penetrating</td>
<td>B3 penetrating</td>
</tr>
<tr>
<td></td>
<td></td>
<td>p perianal disease modifier&lt;sup&gt;b&lt;/sup&gt;</td>
</tr>
</tbody>
</table>
How will you classify the severity of her disease?

<table>
<thead>
<tr>
<th>Variable</th>
<th>Duration of Observation</th>
<th>Weighting Factor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of liquid or very soft bowel movements</td>
<td>Daily × 7 days</td>
<td>× 2</td>
</tr>
<tr>
<td>Presence of abdominal pain (0–3)*</td>
<td>Daily × 7 days</td>
<td>× 5</td>
</tr>
<tr>
<td>Sense of general well-being (0–4)'</td>
<td>Daily × 7 days</td>
<td>× 7</td>
</tr>
<tr>
<td>Presence of complications§</td>
<td>Once</td>
<td>× 20</td>
</tr>
<tr>
<td>Taking diphenoxylate or opiates for diarrhea (0 = no, 1 = yes)</td>
<td>Once</td>
<td>× 30</td>
</tr>
<tr>
<td>Presence of an abdominal mass§</td>
<td>Once</td>
<td>× 10</td>
</tr>
<tr>
<td>Hematocrit†</td>
<td>Once</td>
<td>× 6</td>
</tr>
<tr>
<td>Weight loss (percent below standard weight on nomogram)</td>
<td>Once</td>
<td>× 1</td>
</tr>
</tbody>
</table>

Table 2 Crohn Disease Activity Index

The first three items rely on a 7-day patient diary.

*Abdominal pain rating: 0 = none, 1 = mild, 2 = moderate, 3 = severe.

'General well-being: 0 = generally well, 1 = slightly under par, 2 = poor, 3 = very poor, 4 = terrible.

§Refer to the presence of “complications”: (1) joint extraintestinal manifestations (arthritis, arthralgia); (2) ocular extraintestinal manifestations (uveitis, iritis); (3) cutaneous (erythema nodosum, pyoderma gangrenosum) or the presence of oral aphthous ulcers; (4) anal fissures, abscesses, or fistulas; (5) other types of fistulas; (6) fever over 37.7°C (100°F) during the previous week. 1 point for each item present.

§Abdominal mass: 0 = none, 2 = questionable, 5 = definite.

†Hematocrit: for women, 42; for men, 47.

Clinical remission  CDAI <150
Mild disease  CDAI 150–219
Moderate disease  CDAI 220–450
Severe disease  CDAI >450
- **Mild-moderate**
  - Ambulatory
  - Tolerate po
  - No signs/sx obstruction, fever, or weight loss

- **Moderate-severe**
  - Fever
  - Weight loss
  - Abdominal pain
  - Nausea/vomiting
  - Anemia

- **Severe/fulminant**
  - Fever
  - Obstructive symptoms
  - Peritonitis
  - Abscess
*Your patient is tolerating a diet, eating and maintaining her weight. What medical treatment will you offer her?*

<table>
<thead>
<tr>
<th>Category</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>Probiotics</td>
<td>Lactobacillus, Bifidobacterium</td>
</tr>
<tr>
<td>Antibiotics</td>
<td>Metronidazole, ciprofloxacin, rifaximin</td>
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<tr>
<td>Anti-inflammatories</td>
<td>5-ASA</td>
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<td></td>
<td>Sulfasalazine</td>
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<tr>
<td>Immunosuppressives</td>
<td>Steroids (IV, po)</td>
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<td></td>
<td>Budesonide</td>
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<tr>
<td></td>
<td>Antimetabolities (6-MP, Azathioprine; need to check TPMT enzyme before starting therapy)</td>
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<tr>
<td></td>
<td>Methotrexate</td>
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<td></td>
<td>Cyclosporine</td>
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<td>Biologics</td>
<td>Infliximab (Remicade)</td>
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<td></td>
<td>Adalimumab (Humira)</td>
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<tr>
<td></td>
<td>Certolizumab pegol (Cimzia)</td>
</tr>
<tr>
<td></td>
<td>Vedolizumab (Entyvio; anti-integrin)</td>
</tr>
<tr>
<td></td>
<td>Ustekinumab (Stelara; anti IL-12 and IL-23)</td>
</tr>
</tbody>
</table>
You start her on infliximab. She does well for several months and presents to the ED with worse abdominal pain and fever/chills. She is hemodynamically stable.

1. CT scan shows terminal ileal inflammation and with dilation of the proximal bowel loops.
2. CT scan shows pancolitis with no associated abscess, phlegmon, or pneumoperitoneum. She is febrile.

3. CT scan shows pancolitis. She has diffuse abdominal pain and is tachycardic, hypotensive, and febrile.
What are the surgical indications in Crohn’s disease?
Chronic
- Extra-intestinal manifestations
- Growth retardation
- Neoplasia
- Failure of medical therapy
- Medication side effects
- Symptomatic fistulas
- Stricture

Acute
- Hemorrhage
- Perforation
- Fulminant colitis
- Obstruction
- Abscess
Extraintestinal Manifestations

- **MSK**
  - osteopenia/osteoporosis (50.15%)  
    - 40% increase in fractures  
    - Ankylosing spondylitis (HLA B27) 5% CD patients

- **Cutaneous**
  - Pyoderma gangrenosum, erythema nodosum  
  - Aphthous ulcers  
  - Psoriasis, eczema

- **HPB**
  - PSC 3% in CD patients

- **Ophthalmologic**
  - Iritis, uveitis 8%

- **Coagulopathy**
  - Increased risk of VTE
Now you are seeing a 28 yo M with a history of ileocolic Crohn’s disease treated with mesalamine, steroids, and biologics in the past. He has worsening pain and intermittent obstructive symptoms. He is currently on 40mg prednisone daily. You and his gastroenterologist decide he should have an operation.

What tests/procedures would you like to do pre-operatively?

- Colonoscopy
- CT enterography
- Nutrition labs
- Stoma marking
CT enterography shows a stricture in the terminal ileum and also suggests two more proximal strictures. How do you proceed?
- Resection vs stricturoplasty
- Margins?
- Anastomosis vs stoma

**FIGURE 30-2.** Mesenteric thickness associated with intestinal disease.
How do you perform a stricturoplasty? Any special considerations?
Operative Considerations

- Control of mesentery
- Type of anastomosis
- Colonic disease: one segment vs >1 segment
- Management of rectal stump in subtotal colectomy
- Management of fistulas
A 26 yo M presents to your office with ‘hemorrhoids’ he also notes he occasionally has abdominal pain and has been seeing his dentist for sores in his mouth. Your perianal exam reveals:
Next step?
Colonoscopy with intubation of the TI
Should you excise the skin tags?
Treatment of fissure in Crohn’s disease
Treatment of perianal abscess/fistula in Crohn’s disease
You perform an uncomplicated ileocolic resection for isolated TI Crohn’s disease. You ran the entire bowel and there was no evidence of Crohn’s disease in the remaining bowel. GI wants to restart medications post-op.

- Endoscopic recurrence 54% of patients at 5 years (up to 80% one year after colon resection)
- Clinical recurrence 28–45% by 5 years
- Surgical recurrence: 24% by 5 years, 35% by 10 years

- Mesalamine: safe but less effective in preventing recurrence
- Azathioprine and 6-MP probably safe and more effective
- Biologics decrease recurrence, but the results are mixed re: rate of post-op complications (anti-TNF safe, ?safety of Entyvio)
Clinical Practice Guidelines

The role of the Clinical Practice Guidelines Committee focuses primarily on the creation of practice parameters for various procedures to assist physicians in caring for patients with colon and rectal diseases. The following clinical practice guidelines have been published in the ASCRS scientific journal *Diseases of the Colon and Rectum*.

Multispecialty Guideline on Reprocessing Flexible GI Endoscopes: 2016 Update - 2017
Clinical Practice Guidelines for the Surgical Treatment of Patients With Lynch Syndrome - 2017
Clinical Practice Guideline for the Management of Anal Fissures - 2017
Clinical Practice Guideline for the Evaluation and Management of Constipation - 2016
Clinical Practice Guidelines for Colon Volvulus and Acute Colonic Pseudo-Obstruction - 2016
Practice Parameters for the Management of Clostridium Difficile Infection - 2015
Clinical Practice Guidelines for Ostomy Surgery - 2015
Clinical Practice Guideline for the Treatment of Fecal Incontinence - 2015
Practice Guidelines for the Surveillance of Patients After Curative Treatment of Colon and Rectal Cancer - 2015
Clinical Practice Guideline for Ambulatory Anorectal Surgery - 2015
Clinical Practice Guideline for the Surgical Management of Crohn’s Disease - 2015
Treatment of Sigmoid Diverticulitis (Revised) - 2014
Surgical Treatment of Ulcerative Colitis (Revised) - 2014
Management of Hemorrhoids - 2013
Management of Rectal Cancer (Revised) - 2013

**Clinical Practice Guideline for the Surgical Management of Crohn’s Disease**

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Liliana Bordineau, M.D. • Jonathan Chun, M.D. • David R. Stewart, M.D.
Jon Vogel, M.D. • Janice F. Rafferty, M.D.

Prepared on behalf of The Clinical Practice Guidelines Committee of the American Society of Colon and Rectal Surgeons
Objectives

- **Features/Classification of Crohn’s Disease**
  - Mild-moderate
  - Moderate-severe
  - Severe

- **Medical Treatment**
  - Bottom up vs top down

- **Surgical Indications**
  - Chronic vs acute

- **Surgical Considerations**
  - Management of ileal, colonic, and perianal Crohn’s disease