Surgical Management of Crohn’s Disease

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Case Presentation

- xx yo female c/o abdominal pain x 1 month
  - Epigastric and LUQ
  - vomiting, constipation x2 days
  - Denied diarrhea, melena, weight loss
  - Treated at xx Hospital 1 month prior for SBO
Case Presentation

- PMH: Denies
- PSH: Denies
- Meds: None
- Allergies: NKDA
- Social: Denies Tob, Etoh, Drugs
Case Presentation

- T 98.8  BP 145/83  P 94  Weight 116kg
- Gen: NAD
- CV: s1,s2 rrr
- Lungs: CTA b/l
- Abd: Soft, obese, Hypoactive BS
  + Epigastric tenderness.
  No hernias, scars, or ecchymosis
Case Presentation

**ADMISSION LABS:**

- Alk Phos: 72
- T Bili: 0.5
- AST: 28
- Amylase: 69
- ALT: 26
- Lipase: 25

Urinalysis: negative
UCG: negative
Hospital Course

• HD #1 not responding to conservative management with NGT

• Taken to OR for exploratory laparotomy
  - Transition point in ileocecal region with firm mass
  - Appendix involved, firmly adherent to mass
  - Fibrotic changes in mesentery of right colon
  - Multiple lymph nodes visible
  - Pt underwent Right hemicolecystectomy
Hospital Course

• POD #1  Tachycardic in RR
  ABG 7.34/43/162/24/0.2/99

• POD #2  Transferred to SICU
  CTA negative for PE

• POD #6  Tolerates clear liquid diet
  Transferred to floor

• POD #13  Discharged home
Pathology

• Stenosis of ileum at ileocecal valve
• Sections with apthous ulcers with abscess formation
• Crypt distortion
• Transmural lymphoid infiltrate
• Marked submucosal and serosal edema associated with lymphangiectasia
• Lymph nodes with non-caseous granulomas
  - negative for AFB
• Consistent with chronic IBD, favor Crohn’s disease
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History

• 1932- Drs. Crohn, Ginsberg, and Oppenheimer of Mount Sinai Hospital described “nonspecific granulomas of the intestine.”

• Recommended complete surgical resection to cure the disease

Classification

- Chronic inflammatory condition
  - Transmural inflammation and Granuloma formation
- Involves any portion of GI tract
  - Mouth to Anus
    - 41% ileocolonic disease
    - 28% limited to small intestine
    - 30% limited to colon or anorectum
- Acute inflammation vs. Chronic fibrosis
Medical Management

• Aminosalicylates
  – Sulfasalazine, 5-ASA, Pentasa, Asacol

• Corticosteroids
  – induce remission
  • relief seen in 70% after 4 weeks
  • NOT used to maintain remission
  – Side effects
  • immunosuppression, Adrenal suppression, bone loss, cataract, weight gain, delayed wound healing
Medical Management

• **Immunosuppressive drugs**
  - 6-mercaptopurine, azathioprine (Imuran)
  - **steroid-sparing drugs**
  - started after remission, response up to 4 months
  - **Side effects:** Bone marrow suppression, pancreatitis

• **Anti- Tumor Necrosis Alpha Antibody**
  - Infliximab
  - chimeric mouse-human antibody against TNF-α
Surgical Management of Crohn’s Disease

Surgical Management

- Up to 75% of patients with CD will eventually require surgical intervention
  - Obstruction (35%)
  - Internal fistula (30%)
  - Toxic megacolon
  - Perianal disease
  - Perforation or abscess
  - Failure of long-term medical management
Surgical Management of Crohn’s Disease

Surgical Management of Obstruction

• Incidental discovery

• Planned surgery
  – SB contrast exam, barium enema, colonoscopy
  – nutritional support
  – Examine entire intestine
    • thickened bowel wall
    • narrowed lumen
    • serosal inflammation, creeping fat
    • thickening of mesentery
    • Skip lesions
    • Note length of uninvolved small intestine
Surgical Management of Crohn’s Disease

Surgical Management of Obstruction

- “Oncologic” model
- Panenteric nature of disease -> preservation of normal bowel
  - Nonobstructing, nonhemorrhagic segments of involved bowel need not be resected
- Recurrence
  - 50% of patients require re-operation within 10 yrs
Surgical Management

• Surgical Margins in ileocolic disease
  - Cleveland Clinic
    • prospective randomized study, 152 patients, looking at
      2cm vs. 12cm margin of normal bowel
    • Recurrence of CD is unaffected by the width of the
      margin of resection from macroscopically involved bowel
    • Recurrence rates also do not increase when microscopic
      CD is present at the resection margins
    • Therefore, extensive resection margins are unnecessary

Surgical Management of Crohn's Disease

Surgical Management

• Corticosteroids and post-operative complications
  – Bruewer, et al. reviewed 397 patients with Crohn’s disease who underwent bowel resection
    • 3 groups
      – No steroids
      – low-dose steroids
      – high-dose steroids
    • No difference among the groups with post-op complications
  – concluded that high-dose steroid administration is not an absolute contraindication to bowel anastomosis

Stricturoplasty

- Stricture <10cm long
  - Heineke-Mikulicz stricturoplasty
    - Hand sewn or stapled
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Stricturoplasty

- Stricture 10cm-20cm long
  - Finney-type stricturoplasty
  - bacterial overgrowth in the long diverticulum-like outpouching
Stricturoplasty

- Side-to-side Isoperistaltic Stricturoplasty (SSI/S)
  - Patients high risk for short bowel syndrome
Stricturoplasty

• Indications
  - Multiple strictures
  - Previous resection
  - >100cm small bowel
  - Rapid recurrence, SBO
  - Short bowel syndrome
  - Nonphlegmonous fibrotic stricture

• Contraindications
  - Perforation
  - Multiple strictures in short segment
  - Colonic strictures
  - Extensive ulceration of mesenteric margin
  - Suspicion of Cancer
Resection vs. Stricturoplasty

  - 57 patients -> 60 operations with stricturoplasty
  - 109 stricturoplasties
    - 90 Heineke-Mikulicz
    - 6 Finney
    - 13 SSI S
  - Recurrence in 5 patients after 38 months

- **Authors concluded that stricturoplasty is comparable with resection therapy**
Resection vs. Stricturoplasty

  - 162 patients -> 191 operations
  - 698 stricturoplasties (average 3 per patient)
    - 617 Heineke-Mikulicz
    - 81 Finney
  - Reoperation rates at 5 years
    - Stricturoplasty without resection 31%
    - Stricturoplasty with concomitant resection 27%
  - No statistical significance
- Authors concluded similar reoperative rates
Surgical Management of Crohn’s Disease

Surgical Management
Upper GI Disease

• Gastrojejunostomy with vagotomy
  - marginal ulcer

• Duodenal strictureplasty
  - limited by pliability of duodenum
  - Avoid anastomosis overlying duodenum
    • risk of fistula or injury during reoperation

• Jejunoileal disease
  - Highest recurrence rates
  - Short bowel syndrome
Surgical Management of Crohn’s Disease

Surgical Management

• Guiding principle
  - Preservation of intestinal length

• Anastomosis
  - End-to-end vs. side-to-end vs. side-to-side
  - Stapled vs. hand-sewn
Anastomosis


- 84 patients s/p ileocolonic resection
  - 12 stapled side-to-side
  - 36 stapled end-to-side
  - 36 hand-sewn side-to-side

- Reoperation rates significantly lower in side-to-side group (p=0.01, p=0.05)
Type of Anastomosis

Case-controlled comparative analysis

- **138 patients**
  - 69 wide-lumen stapled anastomosis
  - 69 conventional end-to-end anastomosis

- **Fewer complications with wide-lumen stapled (p=0.048)**

- **55 patients with recurrent symptoms**
  - 39 (57%) CSEE -> 18 reoperations
    - 15 stricture
    - 3 fistulization
  - 16 (24%) WLS -> 3 reoperations
    - 2 stricture
    - 1 fistulization

- **Cumulative reoperation rate lower for WLS (P=0.017)**

Colonic disease

- Differentiation between Crohn’s and UC
- Indications for Operative management
  - Stricture
  - malignancy
  - dysplasia
  - failure of medical therapy
    - Toxic megacolon
Colonic disease

• Total proctocolectomy with end ileostomy
  - Intersphincteric approach
  - 8-15% recurrence rate proximal to stoma
  - Delayed healing of perineal wound in 30%

• Subtotal colectomy with ileorectal/ileosigmoid anastomosis

• Segmental resection
  - limited disease
Colonic disease

- Colectomy with Ileal pouch-anal anastomosis (IPAA)
  - not knowingly performed for Crohn’s
  - In absence of fistulizing disease can maintain pouch
Anal and Perianal disease

• 35% of all patients
  - Skin tags
  - Fissures in lateral position
  - Hemorrhoids

• Treatment to alleviate symptoms

• Skin tags and hemorrhoids should NOT be routinely excised -> chronic, nonhealing wound

• Sphincterotomy contraindicated unless EUA
Anal and Perianal disease

- Complex anal fistula
  - Control sepsis
  - Delineation of complex anatomy
  - Treatment of underlying mucosal disease
  - Sphincter preservation
  - Proctectomy
Summary

• Medical therapy first
• Preservation of bowel length
• Resection vs. Stricturoplasty
• Biopsy
• Remember wound healing