Surgery in Pediatric Inflammatory Bowel Disease

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What are the reasons for surgery?

• Ulcerative colitis
  – Disease does not improve with medication.
  – Side effects of medication are too severe.
  – Pre-cancerous changes develop (8-10 years).

• Crohn’s disease
  – Scarring and obstruction occur.
  – Perforation and abscess happen.
  – Growth failure does not improve.
  – Perianal disease is a problem.
Most common reason for UC surgery is colitis not controlled by medications.

• Disease does not improve with medication.
  – Severe colitis: more than 6 bloody stools per day, fever, anemia, high white blood cell count, low protein level, & abdominal pain.
  – 1 in 10 children with first episode of colitis.

• Hospital stay does not help.
  – With severe flare-up, IV steroids generally help within 5 to 7 days.
  – If no help, consider Remicade or other medications.
  – One half of patients will get better but there is more risk of severe recurrence. About 50% of these patients may still end up with colectomy within one year.
Less common reasons for surgery in ulcerative colitis

• Unacceptable side effects of medication – examples:
  – Steroid side effects: Prednisone works but cannot be discontinued without symptom recurrence
  – Pancreas, liver or blood count problems with azathioprine or 6-MP
  – Allergic reactions to Remicade
  – Infections

• Pre-cancerous changes in lining of colon: concern begins 8-10 years or more after onset of colitis this occurs in less than 1% of patients.
Ulcerative colitis: What fraction with colectomy?

• First year: 1 in 10 children
• Second year: 1 in 7 children
• By fifth year: 1 in 5 children
• What does it mean to have a colectomy?
  – You are cured of ulcerative colitis.
  – It takes two or three operations to get there.
  – It takes up to a year to get through the process.
  – Best result: 4-6 stools per day with no medication.
Stages of surgery in ulcerative colitis.

• **Stage 0**
  – Review of events, exam, colonoscopy findings, biopsy results, and radiology tests to be sure about the diagnosis.
  – Discuss the surgery in detail.

• **Stage 1**: Remove most of the colon and create an ileostomy.
What does an ileostomy look like?
Time course of surgery for stage I

- **Initial colectomy:**
  - Combined laparoscopic and open technique
  - Surgery takes hours but duration does not influence course.

- **Hospital stay:** Average 7 days

- **Benefits:**
  - No medications.
  - No bloody diarrhea.
  - No pain.

- **Complications:**
  - Infections: Intra-abdominal or wound
  - Ileus: slow recovery of intestinal function (days)
  - Obstruction: adhesions
  - More common with greater degree of illness: 1/3 may have one of above problems.
Stages 2 and 3 for ulcerative colitis

Stage 2 occurs 3 to 6 months after Stage 1. Average 5 to 7 hospital days.

Stage 3 occurs 3 to 6 months after Stage 2. Average 3 hospital days.

Total course: 9 to 12 months.

End result:
4-6 stools per day.
1 stool per night.
No pain.
No medication.

Fewer complications:
Better health
Less medication
Long term sequelae of surgery

- Pouch function remains stable.
- Pouchitis: 1/4 patients
  - Acute
  - Chronic or recurrent
- Adhesive obstruction
- Infertility: 1/4 instead of 1/10 women
- Malignancy: Only in patients with prior changes on colonoscopy
How often does surgery occur in young people with Crohn’s disease?

- 1/30 patients in first year
- 1/6 patients in second year
- 1/3 patients by fifth year to tenth year

This information is from years PRIOR TO the use of biologic medications (Remicade/Humira).

- 1/3 patients with perianal problems in five years
Serious damage to the ileocecal area leads to surgery.

Most common CD areas

Complications leading to surgery:
- Narrowing and obstruction
- Fistula with or without abscess
- Ongoing inflammation
Surgery: removal of most damaged bowel & reconnection of ends.

Inflamed ileum and cecum removed. Intestine reconnected.

Scarred narrowing removed. Intestine reconnected.
Hospital course of resection

1. Prior therapy sometimes needed:
   1. Abscess drainage
   2. Antibiotics
   3. IV nutrition

2. Hospital stay = 5 to 7 days.

3. Benefits:
   1. Removal of abscess or infection
   2. Repair of fistula
   3. Relief of obstruction
   4. Removal of inflamed bowel
   5. Intestine re-connected internally but occasional temporary ileostomy.

4. Potential problems
   1. Wound infection
   2. Leak at intestinal connection
   3. Post-operative bowel obstruction
Long term sequelae of surgery

- Recurrence of inflammatory disease requiring treatment: 50% by 2 years after surgery
  - Post-operative monitoring
  - Post-operative treatment
- Scarring or narrowing at intestinal connection
  - Endoscopic surveillance
  - Stricture dilation
- Second operation: 50% by 10 years after first surgery
  - Post-operative therapy for prevention
Possible approaches for prevention of recurrence of Crohn’s disease

• Metronidazole for initial three months
• Colonoscopy or imaging study by 6 to 9 months
• Based on findings, discussion of potential therapies to limit recurrence
  – 5 ASA not effective
  – Azathioprine/6MP possible
  – Biologic if clear-cut inflammation
Perianal abscess and fistula in 1/3.

1. Isolated or with other CD areas
2. Fistula tract develops from anal gland into nearby tissue
3. Fluid and bacteria collect to form abscess (green pocket)
4. Abscess is painful, tender, and red and often without fever
5. Therapy
   1. Antibiotics
   2. Spontaneous drainage
   3. Incision and drainage with GA
   4. Seton drain may be used
6. Course
   1. Slow closure
   2. Continued fistula with drainage
   3. Biologic therapy
   4. Recurrence common
What are the reasons for surgery?

• 3 stage colectomy for refractory/fulminant ulcerative colitis
• Fixing complications from the inflammation of Crohn’s disease
  – Scarring, narrowing, and obstruction
  – Fistula or abscess
  – Poor weight gain or growth and continuing symptoms
• Perianal Crohn’s disease