Surgery for Inflammatory Bowel Disease

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Surgery in IBD

• Up to 50% of IBD patients will require surgery during their lifetime

• Failure of medical therapy or complications of disease

• Requires close collaboration between surgeons, gastroenterologists, dieticians, radiologists, pathologists
Surgery for Ulcerative Colitis

Vocabulary

- Colectomy
- Subtotal colectomy
- Total abdominal colectomy
- Proctocolectomy
  - With IPAA
  - With end ileostomy
Surgery of Ulcerative Colitis

• 25%-35% of CUC patients will require surgery
  – Toxic megacolon
  – Severe, refractory
  – Massive hemorrhage

  – Symptoms not controlled by maximum meds
  – Unable to taper steroids
  – Malignant degeneration

Emergent/urgent surgery for CUC

• Fulminant colitis develops in 13% of patients.
  – Abdominal pain +/- tenderness
  – Distension
  – Tachycardia
  – Fever
  – Toxic megacolon
Colon Diameter >6cm

Toxic megacolon: surgical strategies

- Surgical emergency
  - Historically, mortality with major perforation 27%-57%

- Can have toxic symptoms without abdominal distention or dilation on xray
Toxic megacolon: surgical strategies

• Surgical emergency
  – Mortality with free perforation 27%-57%

• Can have toxic symptoms without abdominal distention or dilation on xray

• Subtotal colectomy, end ileostomy

Massive hemorrhage

• Result of extensive mucosal ulcerations
• Total abdominal colectomy
• Rectal stump bleeding is rare
  – Fecal stream diverted
  – Systemic/topical steroids
  – Maintain option for restorative procedure
Post-operative issues after subtotal colectomy

- Full thickness tissue evaluation
  - Among 52 patients, 13% were found to have CD or IC
- Rectal inflammation can usually be managed medically
- Recover for next operation:
  - steroids, nutrition, anemia
- Taking the stoma for a test drive
  - 20/52 patients opted for permanent ileostomy
Elective surgery for CUC

• Failure of medical management
  – Inadequate control of symptoms despite optimal medical management
  – Chronic disability due to disease
  – Inability to wean off steroids
  – Growth failure in children

Elective surgery for CUC

• Malignancy
  – Risk increases over time
    • 2% at 10 years
    • 8% at 20 years
    • 18% at 30 years

• Biopsy proven cancer is indication for proctocolectomy
Elective surgery for CUC: Dysplasia

- High grade dysplasia
- Indication for surgery
  - High risk for synchronous cancer at colectomy
    - HGD – 42%

Elective surgery for CUC: Dysplasia

- Low grade dysplasia is not straightforward
- Small prospective studies suggest wide range of rates of progression to HGD/cancer
  - Nine-fold increase in development of cancer
  - No different than colitics without dysplasia
- New endoscopy techniques are better at detecting abnormal cells
- Role for shared decision-making
Recommendation for Surgery

Learn about the Types of Surgery

Meet with your Surgeon

Decide about Surgery Options:
  - J-pouch
  - Ileostomy
  - No Surgery

What will the process be like?

• 1 in 5 people with ulcerative colitis need surgery to remove the colon and rectum.

• This surgery is called proctocolectomy.
  – Sometimes this surgery is performed as two separate procedures “colectomy”, then “proctectomy”.

• Surgery is considered when:
  – Medications are no longer controlling your symptoms.
  – You have developed colon cancer or pre-cancer.
After removing the colon and rectum, there are two options:

1. Ileostomy
2. J-pouch

Most people have the choice between either surgery. In some cases, your surgeon may strongly recommend one procedure over the other after considering your unique story.

Ileostomy: The Surgery

- The entire colon and rectum is removed.
- Your anus is closed.
- Your small bowel is connected to the surface of your skin.
  - This is called an ileostomy.
- You pass digested food into a bag connected to your skin.
  - This is called an ostomy bag.
- Requires only one procedure.
- You stay in the hospital for about 5 days.
Ileostomy: The Surgery

Before: The small bowel is attached to the skin of the abdomen. This is called a stoma or ileostomy.

After: The colon and rectum (shaded areas) are removed.


Ileostomy (Quarter shown for size)

Ileostomy with ostomy bag

Pictures courtesy of Jpouch.net
J-Pouch: The Surgery

• The entire colon and rectum is removed.
• The small bowel is connected to the anus.
• A J-pouch (new rectum) is formed from this small bowel so that stool passes through the anus.
• Usually requires **two surgeries** each with a 4-7 day hospital stay:
  – One where the J-pouch is made and a **temporary ileostomy** is formed.
  – The ileostomy is then closed during a second surgery.

## Possible Complications: Ileostomy

<table>
<thead>
<tr>
<th>Complication</th>
<th>How often?</th>
<th>What to Expect</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ileostomy Revision</td>
<td>15%</td>
<td>15 out of 100 patients will need to have surgery to fix a problem with the ileostomy. Some examples of these problems are listed below.</td>
</tr>
<tr>
<td>Ileostomy Retraction or Prolapse</td>
<td>11%</td>
<td>11 out of 100 patients will find the tip of their ileostomy has sunked into their skin (retraction) or pushes out beyond it (prolapse). If bothersome, this may require surgery.</td>
</tr>
<tr>
<td>Parastomal Hernia</td>
<td>4%</td>
<td>4 out of 100 patients will develop a hernia around their ileostomy and may need surgery to fix it.</td>
</tr>
<tr>
<td>Bowel obstruction</td>
<td>8%</td>
<td>8 out of 100 patients will need surgery to treat a blockage of the intestines.</td>
</tr>
<tr>
<td>Wound infection</td>
<td>25%</td>
<td>25 out of 100 patients will have an infection of the incision used to remove the anus. The infection is usually treated with wound care and antibiotics.</td>
</tr>
<tr>
<td>Skin irritation</td>
<td>55%</td>
<td>55 out of 100 patients will have irritation of the skin around the ileostomy. This usually gets better with changing the ostomy bag and skin care.</td>
</tr>
</tbody>
</table>
### Possible Complications: J-pouch

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<td>Bowel Obstruction</td>
<td>23%</td>
<td>23 out of 100 patients will have a blockage of the bowels, which may need surgery.</td>
</tr>
<tr>
<td>Pouch Fistula</td>
<td>9%</td>
<td>9 out of 100 patients will develop an opening between the pouch and the skin around the anus or vagina that may require a ileostomy.</td>
</tr>
<tr>
<td>Stricture</td>
<td>13%</td>
<td>13 out of 100 patients will have a narrowing at the connection between the pouch and anus. This requires dilation in the operating room and/or at home.</td>
</tr>
</tbody>
</table>

### Possible Complications:

<table>
<thead>
<tr>
<th>Complication</th>
<th>Early or Late?</th>
<th>Long or Short Term?</th>
<th>Major or Minor?</th>
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<tr>
<td>Ileostomy Revision</td>
<td>Late</td>
<td>Long Term</td>
<td>Major</td>
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<tr>
<td>Parastomal Hernia</td>
<td>Late</td>
<td>Long Term</td>
<td>Major</td>
</tr>
<tr>
<td>Dehydration</td>
<td>Early</td>
<td>Short Term</td>
<td>Minor or Major</td>
</tr>
<tr>
<td>Bowel obstruction</td>
<td>Early or Late</td>
<td>Short Term</td>
<td>Major</td>
</tr>
<tr>
<td>Wound infection</td>
<td>Early</td>
<td>Short Term</td>
<td>Minor</td>
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<tr>
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### Complications

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<th>Early or Late?</th>
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<th>Major or Minor?</th>
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</thead>
<tbody>
<tr>
<td>Pouch Failure</td>
<td>Early</td>
<td>Short Term</td>
<td>Major</td>
</tr>
<tr>
<td>Pouchitis</td>
<td>Late</td>
<td>Long Term</td>
<td>Minor</td>
</tr>
<tr>
<td>Infection</td>
<td>Early</td>
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### Life with an Ileostomy

- Most patients need to empty the bag 3-4 times per day and replace the bag every 3-5 days.
- It is rare for the bag to need changing at night.
- The ileostomy and bag can be hidden under clothing and even swimwear.
- You do not have control over the sounds of passing gas in public.
- You can control the smell, which is only released when you empty the bag.
- Some people have leakage or difficulty getting the ostomy bag to fit well.
- It can be hard to change the ostomy bag if you have trouble using your hands.
Life with a J-Pouch

- Most patients have at least 6 bowel movements per day and 1 per night.
- Some people experience urgency (the need to quickly find a bathroom to have a bowel movement).
- Some people experience anal leakage and need to wear a pad to protect their underwear.
- Your doctor will need to examine your J-pouch with an endoscope every year.

Both Surgeries

- Remove the colon and rectum
- Are a cure for the disease in the colon
- Have the same survival rate
- Allow normal activities (including swimming and sex)
- You may need to change your diet or use medications to slow down the amount of stool you produce
- Carry the same risk of sexual dysfunction and infertility
# J-Pouch and Ileostomy: Comparison

<table>
<thead>
<tr>
<th></th>
<th>Ileostomy</th>
<th>J-pouch</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surgery</td>
<td>One surgery</td>
<td>Two surgeries</td>
</tr>
<tr>
<td>Flatus in public</td>
<td>May pass flatus in public</td>
<td>May need to urgently pass bowel movements</td>
</tr>
<tr>
<td>Bag in public restroom</td>
<td>May need to empty bag in public restroom</td>
<td>Bowel movements pass through the anus – no clothing modifications needed.</td>
</tr>
<tr>
<td>Clothing</td>
<td>May need to modify clothing</td>
<td>About 42% of patients will require procedures in the future.</td>
</tr>
<tr>
<td>Procedures in the future</td>
<td>About 23% of patients require procedures in the future.</td>
<td>Yearly endoscopy needed for the J-pouch</td>
</tr>
<tr>
<td>Future</td>
<td>No endoscopy needed in future</td>
<td>Some people require removal of J-pouch and creation of ileostomy.</td>
</tr>
<tr>
<td>hardest to change</td>
<td>It can be hard to change the ostomy appliance if you have trouble using your hands</td>
<td></td>
</tr>
<tr>
<td>Both</td>
<td>May need medications or diet changes to control amount of stool</td>
<td>Carry a risk of sexual dysfunction and infertility</td>
</tr>
<tr>
<td></td>
<td>Can swim and have sex</td>
<td>Cure disease in the colon</td>
</tr>
<tr>
<td></td>
<td>Have the same survival rate</td>
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## What is Important to You?

### How important is it to you to be able to wait a long time between trips to the restroom?

<table>
<thead>
<tr>
<th>Not Important</th>
<th>Very Important</th>
</tr>
</thead>
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<td>0</td>
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<th>Reason to consider J-pouch</th>
<th>Reason to consider ileostomy</th>
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### How important is it to you to avoid any risk of anal leakage?

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</table>
**What is Important to You?**

| How important is it to you to wear tight fitting clothes or show your midriff? |
|---------------------------------|--------------------------|
| Not Important | Very Important |
| 0 | 1 | 2 | 3 | 4 | 5 |

Reason to consider ileostomy | Reason to consider J-pouch

| How important is it to you to be able to control the sounds of stool and gas passing? |
|---------------------------------|--------------------------|
| Not Important | Very Important |
| 0 | 1 | 2 | 3 | 4 | 5 |

Reason to consider ileostomy | Reason to consider J-pouch

**Surgery for Crohn’s Disease**
Surgical treatment for Crohn’s disease

• Infection
  – Abscess/phlegmon
  – Fistula
  – Perforation
• Failure of medical therapy
• Obstruction
• Hemorrhage
• Cancer
• Fulminant colitis

Infectious complications

• Up to 20% of patients
• Drainage and antibiotics if feasible
• Surgery is safer when infection and inflammation have resolved
• Free perforation is rare
Fistula

- Up to 30% of patients
- Enterocutaneous or enterovaginal fistulae resulting in hygiene difficulty
- Enterovesical or colovesical fistulae causing recurring UTI
- Enteroenteric fistulae resulting in malabsorption or profuse diarrhea

Resection for small bowel disease: Recurrence is common

- Reoperation
  - 25-35% at 5 years
  - 40-70% at 15 years
  

- Contributing factors
  - Smoking
  - Medical therapy
  - Disease duration
Surgery for fibrostenotic strictures

- Short fibrous strictures
Surgery for fibrostenotic strictures

- Short fibrous strictures
- Contraindications
  - Multiple strictures in a short segment
  - Stricture close to a resection site
  - Perforation, phlegmon, fistula
  - Poor nutritional status

Surgery and colonic Crohn’s

- Obstruction
  - Strictures in 17% of patients
  - 75% can be treated by endoscopic dilation
  - 30% require repeat within 2 years
  - 7%-10% harbor cancer
Surgery and colonic Crohn’s

- Obstruction
- Dysplasia and cancer
  - Most current literature affirms risk equivalent to CUC
  - HGD and cancer absolute indication for surgery
  - LGD still controversial

Surgery and colonic Crohn’s

- Obstruction
- Dysplasia and cancer
- Enterocolonic fistula
  - Colon usually healthy
  - Remove diseased small bowel and repair colon
Surgery and colonic Crohn’s

- Obstruction
- Dysplasia and cancer
- Enterocolonic fistula
- Toxic colitis
  - Management similar to CUC

Controversies: extent of resection

- Your surgeon needs a roadmap
  - MRE
  - Colonoscopy
- Equivalence of segmental v. subtotal
  - Overall recurrence
  - Complications
  - Permanent stoma
Controversies: extent of resection

- Recent meta-analysis suggests equivalence of segmental v. subtotal
  - Overall recurrence
  - Complications
  - Permanent stoma
- Multiple v. single segment
- Quality of life with more colon
Surgery for anorectal Crohn’s

- 10-15% have isolated anorectal disease
- Up to 90% have anorectal disease
  - Skin tags and hemorrhoids
    - Risk of non-healing wounds and incontinence with surgery
    - Do not remove
  - Anal fissure
    - Can be asymptomatic, any location
    - Treat conservatively
      - Topical
      - Botox
Surgery for anorectal Crohn’s

- 10-15% have isolated anorectal disease
- Up to 90% have anorectal disease
  - Skin tags and hemorrhoids
  - Anal fissure
  - Fistula/abscess
    - Drain abscess as close to the anus as possible
    - Setons,
    - If the surrounding tissue is healthy:
      - Plug, mucosal advancement flap, LIFT
Surgery for anorectal Crohn’s

• 10-15% have isolated anorectal disease
• Up to 90% have anorectal disease
  – Skin tags and hemorrhoids
  – Anal fissure
  – Fistula/abscess
    • Fecal diversion
      – 80% respond
      – Few can be reversed
      – Colonic CD and anal stenosis are risk factors

Summary

The operations are relatively straightforward but timing requires good communication and close collaboration between patients, gastroenterologists and surgeons