When and how to do resections or strictureplasties for severe small bowel Crohn’s disease

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Topics to cover

• Characteristics of recurrent Crohn’s disease

• Strictureplasty techniques
  – Classification
  – Complications
  – Indications
  – Contraindications
  – Influence on recurrent disease

• Future concepts
Location of Recurrence
Original Site

Recurrences at previous surgical sites
n=79

- Proximal to Stoma n=9
  - Ileostomy n=6
  - Colostomy n=3

- Anastomotic n=21
  - Resections n=10
  - Strictureplasty n=11

- Proximal n=39
  - Resections n=32
  - Strictureplasty n=7

- Distal n=5
  - Resections n=2
  - Strictureplasty n=3

- Proximal + Distal n=5
  - Resections n=4
  - Strictureplasty n=1

Fig 1. Operative strategy applied to recurrences occurring at the site of, or in contiguity with a previous anastomosis or strictureplasty (recurrences at previous operative sites).

Fichera A, Michelassi F et al Surgery 2006; 140:649-54
Phenotype of Recurrence

Strictureplasty as an alternative for preservation of intestinal length

Photo: courtesy of Dr. Neal Mortensen
Oxford, England
Classification of strictureplasties

Categorized into three groups:

1. Conventional procedures
   ✓ Heineke-Mikulicz

2. Intermediate procedures
   ✓ Finney

3. Complex procedures
   ✓ Side-to-side isoperistaltic strictureplasty (SSIS)
Conventional Strictureplasty
Heineke-Mikulicz
Intermediate procedures
Finney
Complex procedures
Side-To-Side Isoperistaltic Strictureplasty

Michelassi, F, Dis Colon Rectum, 39:345-349, 1996
Multiple Strictureplasties
Strictureplasty Complications

- Campbell Meta-analysis
  - 32 studies, 1616 pts, 4538 strictureplasties

- Complications
  - Early – sepsis 3%, SBO 4%, bleeding 3%, Re-Op 3%
  - Late – Re-op for SBO or Stricture 25%

- Stratified patients by strictureplasty type
  - Conventional – Heineke-Mikulicz or Finney
  - Non-conventional – Michelassi, modified, other

<table>
<thead>
<tr>
<th>Strictureplasty type</th>
<th>Early</th>
<th>Late Complications</th>
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<tbody>
<tr>
<td>Conventional (n=1157)</td>
<td>15%</td>
<td>29%</td>
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<tr>
<td>Non-conventional (n=457)</td>
<td>8%</td>
<td>17%</td>
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Campbell et al DCR 2012
Indications

1. Duodenal, jejunal and neoterminal disease with single or multiple fibrotic strictures
2. Recurrences on previous small bowel and ileo-colonic anastomosis
Contraindication

1. Inflammatory masses
2. Generalized intra-abdominal sepsis
3. Long strictures with thick, unyielding intestinal wall
4. Dysplasia or carcinoma
5. Hemorrhage
6. A stricture close to an area of resection
<table>
<thead>
<tr>
<th>Recurrence rate*</th>
<th>Mean follow-up yrs</th>
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<td><strong>Recurrence post strictureplasty</strong></td>
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<tr>
<td>Dietz &amp; Fazio</td>
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<td>Tonelli</td>
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<td>Cristaldi &amp; Taschieri</td>
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<td>Hurst &amp; Michelassi</td>
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<td>Cohen &amp; McLeod</td>
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</table>

*Recurrence rate on strictureplasty 0-8%

Strictureplasty for Crohn’s disease: Meta-analysis
Recurrence post strictureplasty

- 1,112 Patient
- 3,259 Strictureplasties
- Overall Recurrence:
  - 28% at 5 yrs
  - 47% at 9 yrs
- Location
  - New site 90%
  - Strictureplasty 10%
- Strictureplasty site specific recurrence 3%

Endoscopic and pathologic quiesence of disease after Side-To-Side Isoperistaltic Strictureplasty (SSIS)

Disease quiescence after SSIS

- Study period 1996-2010
- Study population 91 patients (22 on neo-terminal ileum)
- Endoscopic follow-up at 5.5 years 91%.
  - Six patients (27%) developed mucosal ulcers and eventually strictures which required surgical treatment in two.
  - Majority of patients were found to only have minimal residual erythema of the mucosa.
- These observations support initial observations that the index disease goes into remission after an SSIS

Advantages of strictureplasty over resection

- Bowel sparing
- Disease remission
- Return of function?

Could strictureplasty techniques be used for structuring terminal ileitis?
Resection or strictureplasty?
Side-To-Side Isoperistaltic Strictureplasty for stricturing terminal ileitis

Cecum
Colonoscopy at 6 months
New York Presbyterian
Weill Cornell Medical Center