Endoscopy in IBD: Appropriate Indications and Response to Findings

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Uses of Endoscopy in IBD

- Diagnosis
- Disease extent
- Assessment of Activity/Healing
- Stricture evaluation and dilation
- Dysplasia Surveillance
- Diagnose/Control Bleeding
- Pouch Evaluation
- Endoscopic Ultrasound

Uses of Endoscopy in IBD

- Diagnosis
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- Diagnose/Control Bleeding
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- VCE

Ileocolonoscopy for Diagnosis and Activity in Small Bowel Crohn’s Disease

- STRENGTHS
  - Technically easy
  - Reliability
  - Accuracy
  - Acceptable to most Crohn’s patients
- WEAKNESSES
  - High cost
  - Less-than ideal safety profile

Endoscopy for Diagnosis

- Still the Gold Standard for UC and Crohn’s ileocolitis or colitis diagnosis
- Silver standard for Crohn’s small bowel diagnosis (when TI or distal ileum involved)

Sensitivity for SB CD

Solem, GIE, 2008

* P > 0.05 CE compared with other SB modalities
** P > 0.05 CE compared with other SB modalities (trending toward significant for SBFT)
Specificity for SB CD

Ileocolonoscopy: Activity Index

- CDEIS, Mary et al, Gut 1989
  - Aim: “Elaborate and validate a CDEIS”
  - Authors forgot that a “simple” index would be preferable

CDEIS, 1989

9 Possible Mucosal Lesions
1. Pseudopolyp
2. Healed ulceration
3. Frank erythema
4. Frankly swollen mucosa
5. Aphthoid ulceration
6. Superficial or shallow ulceration
7. Deep ulceration
8. Non ulcerated stenosis
9. Ulcerated stenosis

Measured across 5 segments: rectum, left/sig, transverse, right, ileum

Constructed and compared against a global physicians assessment (10 cm Likert scale)

Activity

Results

- High degree of correlation (r=0.81-0.96)
- High degree of reproducibility
- High degree of annoyance of use
- CDEIS=12 x # segments with deep ulcerations + 6 x # segments with superficial ulcerations + Average surface area involved in cm + Average surface area with ulcerations in cm + 3 x presence of non-ulcerated stenosis + 3 x presence of ulcerated stenosis

Mary et al, Gut 1989

There’s Something About Mary (1998)

- “Unless, of course, somebody comes up with 6-Minute Abs. Then you’re in trouble, huh?”
- Attempt to come up with “6 minute abs” for CDEIS

Mary et al, Gut 1989
“Simple” Endoscopic Score for Crohn’s Disease
SES-CD, 2004

- Same 5 segments
- 4 variables per segment, all 0-3 score

<table>
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<tr>
<th>Size of ulcers</th>
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<td>Aphthous</td>
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<td>Very large (&gt;2 cm)</td>
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<td>&gt;30%</td>
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<td>&gt;75%</td>
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<tr>
<th>Narrowings</th>
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<td>Multiple, can be passed</td>
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<tr>
<td>Cannot be passed</td>
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Daperno, et al, GI Endoscopy, 2004

Actuarial analysis of symptomatic recurrence in patients stratified according to severity of endoscopic lesions


Endoscopic activity associated with prolonged remission in follow up of “Top-Down” study

Baert. Gastroenterology 2010

Fewer abdominal surgeries with endoscopic healing independent of treatment arm in a series of patients receiving IFX

Schnitzler, IBD 2009

Endoscopic Healing Associated Inversely Associated with Colectomy Rate in UC

Dysplasia Surveillance
Current ACG Surveillance Guidelines 2010
(Secondary Prevention)

- **Who:**
  - Left-sided or pan-UC more than 8-10 years (exception: PSC and UC - start immediately)

- **Technique:**
  - Random biopsies every 10 cm of mucosa; at least 33 biopsies
  - Extra focus on nodules, masses, strictures

- **How often:**
  - q 6 months-2 years

- **Outcome (reviewed by second pathologist):**
  - High-grade dysplasia: colectomy
  - Low-grade dysplasia: consider colectomy
  - Indefinite dysplasia: increase surveillance
  - Atypia or indeterminate: treatment of active disease, repeat colonoscopy and biopsies

British Society Guidelines 2010

**Suggest Chromoscopy, Incorporate Inflammation**

- Screening colonoscopy at 10 years (preferably in remission, pancolonic dye-spray)

Suggested Surveillance Strategy

- **No Dysplasia**
- **Indefinite Dysplasia**
- **Low-grade Dysplasia**
- **High-grade Dysplasia**

**Problems with the Current Surveillance Guidelines**

- No prospective evidence of mortality benefit (or even CRC benefit)
- Low rates of observer agreement in histopathologic interpretation
- No risk stratification based on multiple variables (e.g., inflammation and PSC, etc.)
- No adjustment for improved technology or understanding of natural history
- Uncertainty around when to perform surgery (LGD)

The Limitations of Random Biopsies

- Surface area of colorectum: 1578.1 ± 301.0 cm²
- Surface area of biopsy forceps: 2.2-5 mm²
- Recommended "at least 33 biopsies"
- Percent surface area with this approach: 0.05%-0.1%
Prospective Studies Comparing Chromoendoscopy to White Light

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<th>N</th>
<th>Method</th>
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<td>165</td>
<td>MB</td>
<td>3-fold (lesions)</td>
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<td>Hurlstone et al (2004)</td>
<td>162</td>
<td>IC</td>
<td>4-fold (lesions)</td>
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<td>Rutter et al (2004)</td>
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<td>IC</td>
<td>4.5-fold (lesions)</td>
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<td>Hurlstone et al (2005)</td>
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<td>IC</td>
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<td>Kiesslich et al (2007)</td>
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<td>MB and EM</td>
<td>4.75-fold (lesions)</td>
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<td>Marion et al (2008)</td>
<td>102</td>
<td>MB</td>
<td>1.5 fold (patients)</td>
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But Does Detecting “More Dysplasia” Matter? (How Much Are We Missing?)

- Mount Sinai Surveillance Database
- 1183 dysplasia surveillance examinations of patients with extensive UC
- # of cases with CRC without prior dysplasia?
  - 1 (0.085%)
  - The old system wasn’t all that bad

Needed with Advanced Endoscopic Techniques

- Longitudinal studies
- Agreement of end-points worth achieving
  - Dysplasia Yield?
  - Cancers?
  - Cancer mortality/morbidity?
  - Cost?
  - Intervals between colonoscopies?

Modern Guide to LGD Management (2013)

1. Expert review of pathology slides
2. Discussion with patient re: possibility of synchronous cancer (0-20%)
3. Consultation with a colorectal surgeon
4. Repeat colonoscopy
   1. Excellent Prep
      2. High Def or Chromo
5. CLEAR THE COLON OR REMOVE THE COLON
   1. Surgery for incomplete lesion removal
   2. Repeat colonoscopy in 3-6 months for complete removal or no lesion identified
   3. Surgery if non-targeted biopsies positive for dysplasia

Is the Curve Changing with Surveillance?

- Progression to advanced neoplasia

Has Colitis-Related CRC Declined in Importance?

<table>
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<tr>
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<th>95% CI</th>
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<tr>
<td>Copenhagen, Denmark1</td>
<td>1.05</td>
<td>0.56-1.79</td>
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<tr>
<td>Olmsted, MN, USA2</td>
<td>1.1</td>
<td>0.4-2.4</td>
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2. Jess, Gastro 2006;130:1039–1046