Colon Polyps: Which ones matter?

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Disclosures

- Merck (speaker fee, melanoma surgery)
Acknowledgement

Shannon Shogryn, general surgery resident
Objectives

- Define the common polyps
- Define the polyp syndromes and their surveillance
- Identify the significance and surveillance of:
  - Adenomatous polyps
  - Serrated polyps
But first...... Polyps

- Adenomatous polyps
  - Tubular
  - Tubulovillous
  - Villous

- Hyperplastic Polyps
  - Hyperplastic/Serrated
  - Sessile serrated adenomas/polyps +/- dysplasia
  - Traditional serrated adenomas

- Hamartomatous Polyps

- Inflammatory Polyps
Polyp Syndromes
Familial Adenomatous Polyposis (FAP)

- “Carpet of polyps”
- APC gene mutation
  - Autosomal dominant
  - High de novo mutation rate
- Polyps after 10 years old
  - Annual colonoscopy starting 10-12 years old
- Most have colon cancer <40 years old
- Screening OGD in later years
Variations on FAP

- **Attenuated FAP**
  - Fewer polyps
  - Rectal/ left- sided sparing
  - Older age of onset

- **MYH-associated polyposis**
  - Recessive inheritance
  - Older age of onset
Hereditary Nonpolyposis Colon Cancer (HNPCC)

- Polyps but not polyposis
- Caused by a mutation in a DNA repair gene
- Colon cancer, one of several possible malignancies
  - endometrium, ovaries, stomach, small intestine, kidney, brain or liver
- Cancer screening beginning in 20’s
- Colonoscopy q 1-2 years
HNPCC: clinical criteria (3-2-1)

- Three or more family members with HNPCC-related cancers, one of whom is a first degree relative of the other two
- Two successive affected generations
- One or more of the HNPCC-related cancers diagnosed under age 50 years
- Familial adenomatosus polyposis (FAP) has been excluded
Others

- Peutz Jeghers Syndrome
  - Hamartomatous polyps, mostly small bowel
  - Wide variety of cancers possible
    - Breast, gastric, small bowel, pancreas, colon
  - Screening not standardized

- Juvenile Polyposis Syndrome
  - Multiple hamartomatous polyps
Non-polyp syndromes

IBD screening

- If colonic disease
- Pancolitis versus left-sided disease
- Colonoscopy every 1-3 years, starting 10 years after diagnosis (5-10 years later if only left-sided disease)
- Colon resection if any dysplasia found
Polyps found at colonoscopy

- Symptoms (change in bowel habit, bleeding, abdominal pain, anemia)
- Family history
Appropriateness of another C-Scope

- Risk of subsequent cancer
- Risk of the test
  - Bleeding: 1-2%
  - Perforation: 1: 500 - 1000
- Ability to act on the result (fitness for surgery)
## Surveillance Recommendations: Adenomas

<table>
<thead>
<tr>
<th>Number of Polyps</th>
<th>Surveillance interval (years)</th>
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<tbody>
<tr>
<td>None</td>
<td>10</td>
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<tr>
<td>1-2 tubular, &lt;10mm</td>
<td>5-10</td>
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<tr>
<td>3-10 tubular</td>
<td>3</td>
</tr>
<tr>
<td>&gt;10 adenomas</td>
<td>&lt;3</td>
</tr>
<tr>
<td>Large adenoma (&lt;10mm)</td>
<td>3</td>
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<tr>
<td>Villous adenomas</td>
<td>3</td>
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<tr>
<td>Adenoma with high grade dysplasia</td>
<td>3</td>
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</tbody>
</table>
Hyperplastic/Serrated Polyps

- “New but old”
- Evolving nomenclature and classification by pathology
- Concern for an association with colon cancer
- Common, particularly in distal colorectum
- Often flat and difficult to see
- Continuum of diminutive to large, varied pathology
Colon Cancer Risk


- 10,199 pts with first-time colonoscopies
  - Excluded pts <20yrs, FAP, HNPCC, IBD, previous colon resection
<table>
<thead>
<tr>
<th>Table 2. Analysis of Factors Predictive of Advanced Neoplasia</th>
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<tbody>
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NOTE. Multiple analysis includes age, gender, number of small adenomas, and the presence of large serrated polyps.

<sup>a</sup>Excluding histologically advanced adenomas.

<sup>b</sup>P < .0001.

- Retrospective review
  - 13 VA medical centres (1994-1997)
  - 3121 asymptomatic pts (age 50-75)
  - 1371 subsequent surveillance (F/U over 5.5 years post baseline)
<table>
<thead>
<tr>
<th>Findings on baseline CSP</th>
<th>Baseline CSP (n)</th>
<th>Subjects with follow-up CSP, n (%)</th>
<th>Advanced neoplasia on follow-up CSP, n (%)</th>
<th>OR (95% CI)</th>
<th>Any neoplasia on follow-up CSP, n (%)</th>
<th>OR (95% CI)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No neoplasia</td>
<td></td>
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</tr>
<tr>
<td>With proximal ND-SP</td>
<td>118</td>
<td>39 (33.1)</td>
<td>2 (5.1)</td>
<td>2.09 (0.44–9.87)</td>
<td>17 (43.6)</td>
<td>3.14 (1.59–6.20)</td>
</tr>
<tr>
<td>Without proximal ND-SP</td>
<td>1832</td>
<td>415 (22.6)</td>
<td>11 (2.7)</td>
<td></td>
<td>83 (20.0)</td>
<td></td>
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<tr>
<td>Small tubular adenoma</td>
<td></td>
<td></td>
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<tr>
<td>&lt;10 mm</td>
<td>842</td>
<td>634</td>
<td></td>
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</tr>
<tr>
<td>With proximal ND-SP</td>
<td>87</td>
<td>63 (72.4)</td>
<td>5 (7.9)</td>
<td>1.23 (0.46–3.28)</td>
<td>26 (41.3)</td>
<td>0.96 (0.57–1.63)</td>
</tr>
<tr>
<td>Without proximal ND-SP</td>
<td>755</td>
<td>571 (75.6)</td>
<td>36 (6.3)</td>
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<td>240 (41.8)</td>
<td></td>
</tr>
<tr>
<td>Advanced neoplasia</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>With proximal ND-SP</td>
<td>43</td>
<td>38 (88.4)</td>
<td>11 (28.9)</td>
<td>2.25 (1.02–4.96)</td>
<td>27 (71.1)</td>
<td>2.17 (1.03–4.59)</td>
</tr>
<tr>
<td>Without proximal ND-SP</td>
<td>286</td>
<td>245 (85.7)</td>
<td>36 (14.7)</td>
<td></td>
<td>127 (51.8)</td>
<td></td>
</tr>
</tbody>
</table>

CSP, colonoscopy.
Serated Polyposis Syndrome

WHO criteria

(i) at least 5 serrated polyps proximal to the sigmoid colon with 2 or more > 10 mm

(ii) any number of serrated polyps proximal to the sigmoid colon in a pt with a 1st degree relative with SPS

(iii) >20 serrated polyps of any size, distributed throughout the colon
Outstanding questions

- Association versus causation
- Molecular biology
- What polyps do we remove?
- How often do we re-scope?
### Surveillance Recommendations: Serrated Polyps

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<thead>
<tr>
<th>Number of Polyps</th>
<th>Surveillance interval (years)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Small hyperplastic polyps in sigmoid and rectum</td>
<td>10</td>
</tr>
<tr>
<td>Sessile serrated polyp &lt;10mm</td>
<td>5</td>
</tr>
<tr>
<td>Sessile serrated polyp &gt;10mm</td>
<td>3</td>
</tr>
<tr>
<td>Sessile serrated polyp with dysplasia</td>
<td></td>
</tr>
<tr>
<td>Traditional serrated adenoma</td>
<td></td>
</tr>
<tr>
<td>Serrated polyposis syndrome</td>
<td>1</td>
</tr>
</tbody>
</table>
Take Home Messages

- Some high risk groups can be easily identified in primary care clinic (HNPCC, colonic IBD)
- Polyp surveillance should be in the context of patient overall health
- Adenoma surveillance based on number, size and dysplasia
- Significance of serrated polyps unknown, but may warrant some surveillance. Recommendations likely to evolve in future years.