Microscopic Colitis

Laura Young, MD, PhD
May 11, 2005
Microscopic Colitis: What is it?

- Inflammatory condition of the colon in which the colonic mucosa appears normal under endoscopic and radiologic examination, but histologic examination reveals specific features
- Watery diarrhea-colitis syndrome
Microscopic Colitis: Two Types

- Lymphocytic colitis

- Collagenous colitis without lymphocytic infiltration of the surface epithelium
Microscopic Colitis: Epidemiology

- Disease first described in 1976
- Female predominance F:M ratio
  4.75 to 1 for collagenous colitis
  2.7 to 1, for lymphocytic colitis
- Mean age at onset of symptoms
  53 for collagenous colitis
  64 for lymphocytic colitis
Microscopic Colitis: Epidemiology

- Estimated annual incidence
  1.1 per 100,000 collagenous colitis
  3.1 per 100,000 lymphocytic colitis

- Microscopic colitis was diagnosed at a rate of 9.5 per 100 normal-looking colonoscopies performed in patients with watery diarrhea
Microscopic Colitis: Histology of Collagenous Variant

- Characterized by a thickened subepithelial collagenous band in the colonic mucosa that varies in thickness from 7 to as much as 100 μm (normal 1 to 7 μm more prominent in the rectum)
Collagenous colitis  High power view of a colonic biopsy from a patient with collagenous colitis. There is a thickened subepithelial collagenous band (arrow) associated with increased mononuclear cell infiltration and epithelial degeneration. Courtesy of Robert Odze, MD.
Collagenous colitis  Light micrograph of a colonic biopsy from a patient with collagenous colitis. The characteristic change is thickened subepithelial collagenous band in the colonic mucosa that stains in bright blue (arrows). Courtesy of Prof Dr G Herrmann, Frankfurt.
Microscopic Colitis: Histology of Lymphocytic Variant

- Characterized by a subepithelial lymphocytic infiltrate rather than excess collagen in the colonic mucosa
Lymphocytic colitis  Medium power view of a colonic biopsy from a patient with lymphocytic colitis shows intraepithelial and lamina propria lymphocytic infiltrate. Courtesy of Robert Odze, MD.
Microscopic Colitis: Histology

- 30 patients with chronic watery diarrhea and normal radiographic and endoscopic studies:
  * 6 showed lymphocytic colitis alone
  * 7 collagenous colitis alone
  * 17 showed a mixed form with both thickening of the collagenous plate and an increased number of intraepithelial lymphocytes
Microscopic Colitis: Pathology

- Pathogenesis is unknown—despite good description of the pathology
- Abnormal collagen metabolism
- Bacterial toxins
- NSAID use
- DM
Microscopic Colitis: Pathology

Collagenous colitis
- simvastatin
- lansoprazole
- ticlopidine

Lymphocytic colitis
- ticlopidine
- flutamide
- gold salts
- lansoprazole
Microscopic Colitis: Mechanism of Diarrhea

- Severity of diarrhea correlates with the inflammatory changes in the lamina propria not with collagen table thickening
- Hypothesized that diarrhea is caused by the inflammation
- Decreased absorption of sodium chloride accompanied by a component of active chloride secretion
- Collagen band acts as diffusion barrier
Microscopic Colitis: Clinical Presentation

- Nonbloody chronic watery (secretory) diarrhea of up to two liters daily
- Mainly intermittent, but is sometimes continuous or rarely consists of a single episode
- 4-9 watery stools per day
- If no colonic biopsy, most patients with microscopic colitis would be diagnosed with diarrhea-predominant irritable bowel syndrome
Microscopic Colitis: Clinical Presentation

- Accompanying symptoms variable
  * nausea
  * vague abdominal pain
  * fecal urgency
- Extraintestinal symptoms
  * arthralgia, arthritis, or uveitis
Microscopic Colitis: Differences Between the Two Types

- Collagenous variant tends to be more chronic
- Lymphocytic tends to resolve
- Progression from collagenous to lymphocytic not observed
Microscopic Colitis: Laboratory Findings

- Slight anemia
- Elevated ESR
- + Auto-antibodies (RF, ANA, ANCA, anti-mitochondrial antibody)
Microscopic Colitis: Prior to Colonoscopy

- CBC/ESR/Chemistries
- Stool Culture/Fecal WBC
- Stool electrolytes
- Celiac sprue
- TSH
Microscopic Colitis: Diagnosis

- Colonoscopy
- Severity of histologic changes declines from the proximal to the distal colon; thus, biopsies obtained from the right colon are optimal
- Several reports have shown that rectosigmoid biopsies alone would have missed the diagnosis of collagenous colitis in up to 40 percent of cases
Microscopic Colitis: Diagnosis

- Retrospective study of histological specimens from 56 patients:
  * highest diagnostic yield from transverse colon (83%) and right colon (70%)
  * lowest diagnostic yield from rectosigmoid (66%)
Microscopic Colitis: Treatment

- Large RCTs do not exist
- Reassure patients that this is not related to increased mortality or severe deterioration
- May be self-limiting
Stop potential offending meds

Loperamide

Sulfasalazine

Cholestyramine

Corticosteroids

Bismuth subsalicylate
Microscopic Colitis: Natural History of Disease after Treatment

- Very few prospective studies
- 37 patients with collagenous and 44 patients with lymphocytic colitis followed prospectively after diagnosis for an average of 37 months
  * 70% long-term cessation of diarrhea
  * 25-30% relapsed
- Microscopic colitis has not been associated with an increased risk of colorectal cancer
Microscopic Colitis: Surgery

- If all else fails
- Rarely indicated (ileostomy, sigmoidostomy, colectomy)
- Ileostomy may be the procedure of choice in older patients with resistant disease
 Clinicopathologic Features of Lymphocytic and Collagenous Colitis

<table>
<thead>
<tr>
<th>Clinical features</th>
<th>Lymphocytic colitis</th>
<th>Collagenous colitis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Median age and range, years</td>
<td>58 (55 to 77)</td>
<td>58 (41 to 84)</td>
</tr>
<tr>
<td>Female-to-male ratio</td>
<td>3:1</td>
<td>15:1</td>
</tr>
<tr>
<td>Type of diarrhea</td>
<td>Secretory</td>
<td>Secretory</td>
</tr>
<tr>
<td>Mean fecal weight, grams</td>
<td>712 (317 to 1269)</td>
<td>565 (246 to 1438)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pathologic features</th>
<th>Lymphocytic colitis</th>
<th>Collagenous colitis</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent of lamina propria space occupied by inflammatory cells (normal 47±2)</td>
<td>64</td>
<td>68</td>
</tr>
<tr>
<td>Types of inflammatory cells in lamina propria</td>
<td>Mainly plasma cells and neutrophils</td>
<td>Mainly plasma cells and neutrophils</td>
</tr>
<tr>
<td>Subepithelial collagen band (normal &lt;3.65 μM)</td>
<td>Normal</td>
<td>Abnormally thick</td>
</tr>
</tbody>
</table>

†Adapted from Lee, E, Schiller, LR, Vendrell, D, et al, Gastroenterology 1992; 103:1790.
References

- Uptodate, *Lymphocytic and collagenous colitis (microscopic colitis)*; Christoph F Dietrich, MD, Wolfgang F Caspary, MD