1. Inflammatory Bowel Disease I

Inflammatory Bowel Disease I

Laurence S. Bailen, MD
Tufts University School of Medicine
Division of Gastroenterology
Newton-Wellesley Hospital
2007

(c) 2007, Laurence S. Bailen, MD

2. Case Presentation

Case Presentation

• 36 yo white woman with right lower quadrant abdominal pain, diarrhea and weight loss
• Has pain in perianal area with drainage
• No other past medical history
• PE: No fever, Stable BP, HR
  – One oral aphthous ulcer
  – Mild fullness and tenderness in RLQ
  – Fistula opening on labia and perineum

(c) 2007, Laurence S. Bailen, MD
3. Inflammatory Bowel Disease

Inflammatory Bowel Disease

Ulcerative Colitis

Crohn’s Disease

Mucosal Ulceration in Colon

Transmural Inflammation

Ileitis

Ileocolitis

Colitis

(c) 2007, Laurence S. Bailen, MD

4. The Spectrum of IBD

The Spectrum of IBD

Indeterminate Colitis

UC

CD

(c) 2007, Laurence S. Bailen, MD
5. Epidemiology of IBD

Epidemiology of IBD

• 1-2 million IBD patients in the U.S.
• Equal incidence of ulcerative colitis and Crohn’s disease
• Approximately 10,000 new cases diagnosed annually*

(c) 2007, Laurence S. Bailen, MD

6. Epidemiology of IBD

Epidemiology of IBD

• Peak onset: 15 to 25 years of age
• Second peak incidence: 50 to 65 years of age
• Approximately equal between males and females
• Incidence increased in industrialized nations from 1970 to 1990

(c) 2007, Laurence S. Bailen, MD
7. Geographic Distribution of IBD

Geographic Distribution of IBD

8. Ethnic and Racial Incidence of IBD

Ethnic and Racial Incidence of IBD

(c) 2007, Laurence S. Bailen, MD
9. **IBD Interaction**

![IBD Interaction Diagram]

(c) 2007, Laurence S. Bailen, MD

10. **Environmental Triggers**

![Environmental Triggers Diagram]

(c) 2007, Laurence S. Bailen, MD
11. Familial Patterns of IBD

Familial Patterns of IBD

- 10-15% occurrence of IBD in relatives
- Strong concordance by disease category
- Genetic vs. environmental influences still unresolved

(c) 2007, Laurence S. Bailen, MD

12. Genetics of IBD

Genetics of IBD

- Specific genes better understood
- NOD2/CARD15 gene on chromosome 16 – identified by linkage studies
- NOD2/CARD 15 gene: encodes intracellular protein NOD2
  - Innate immunity through NF-κB mechanism
  - Involved in apoptosis
  - Involved in recognition of microbes
- Association of IBD with various MHC loci

(c) 2007, Laurence S. Bailen, MD
13. Inflammatory Bowel Disease

Inflammatory Bowel Disease

1. Antigen processing and presentation, activation of macrophages
   - Antibiotics
   - Folic acid

2. Antigen recognition, activation of CD4+ T cells
   - CyA
   - Tacrolimus
   - TNFα

3. Generation of Th1/Th2 response
   - IL-10

4. Production of proinflammatory cytokines
   - Anti-TNF antibodies
   - Thalidomide
   - Corticosteroids
   - IL-11

5. Recruitment, migration, and adhesion
   - Anti-ICAM-1 antibody
   - Anti-ICAM-1 antibody
   - TNFα

6. Inflammation and injury
   - Antioxidants
   - Corticosteroids
   - Anti-inflammatory

7. Repair and restitution
   - TNFα
   - IL-11
   - TNF

(c) 2007, Laurence S. Bailen, MD

14. Chronic Inflammation, Mediator Imbalance

Chronic Inflammation, Mediator Imbalance

(c) 2007, Laurence S. Bailen, MD
15. Ulcerative Colitis

Ulcerative Colitis

- 22 year old man complains of 5 weeks of small volume loose, bloody stool. He has urgency to move his bowels. He occasionally has crampy left lower abdominal pain that diminishes after a bowel movement. He has occasional low grade fevers.
  - What would you expect to see on colonoscopy?
  - What is he at risk for in the long term?

16. Ulcerative Colitis: Symptoms

Ulcerative Colitis: Symptoms

- Bloody diarrhea
- Urgency
- Abdominal pain (left-sided)
- Fever
- Nocturnal diarrhea
- Frequent small volume bowel movements
17. UC: Location and Extent

![Pie chart showing UC location and extent]

30% Proctitis
40% Distal/Left-sided Colitis
30% Extensive/Pancolitis

(c) 2007, Laurence S. Bailen, MD

18. Endoscopic Spectrum of Proctocolitis

Endoscopic Spectrum of Proctocolitis

Images not available due to copyright restrictions.

Mild          Moderate          Severe

(c) 2007, Laurence S. Bailen, MD
19. Chronic Ulcerative Colitis

Chronic Ulcerative Colitis

Image not available due to copyright restrictions.

20. Severe Ulcerative Colitis

Severe Ulcerative Colitis

Images not available due to copyright restrictions.
21. Ulcerative Colitis: Diagnosis

Ulcerative Colitis: Diagnosis

- Clinical history
- Exclude infection
- Endoscopic appearance
- Pathology
- Serologic testing

(c) 2007, Laurence S. Bailen, MD

22. Natural Course of UC

Natural Course of UC

See study where patients were followed for up to 25 years - Langholz E, et al. Gastroenterology. 1994;107:3-11
23. Ulcerative Colitis: Complications

Ulcerative Colitis: Complications
Toxic Megacolon

Image not available due to copyright restrictions.

24. Colorectal Cancer in Ulcerative Colitis

Colorectal Cancer in Ulcerative Colitis

Image not available due to copyright restrictions.
25. Ulcerative Colitis

Ulcerative Colitis

- 22 year old man complains of 5 weeks of small volume loose, bloody stool. He has urgency to move his bowels. He occasionally has crampy left lower abdominal pain that diminishes after a bowel movement. He has occasional low grade fevers.

- What would you most likely see on colonoscopy?
  - Erythema, punctate ulcerations, loss of vascular markings, friability
- What is he at risk for in the long term?
  - Colon cancer
- If he had a fever, severe abdominal pain, and distension what would be your immediate concern?
  - Toxic megacolon

(c) 2007, Laurence S. Bailen, MD

26. Crohn’s Disease

Crohn’s Disease

Image not available due to copyright restrictions.

(c) 2007, Laurence S. Bailen, MD
27. CD: Clinical Types

CD: Clinical Types

**Inflammatory**
- Pain
- Tenderness
- Diarrhea

**Obstructive**
- Cramps
- Distention
- Vomiting

**Fistulizing**
- Diarrhea
- Damage to skin
- Air/feces in urine
- Types
  - Enterocutaneous
  - Enterovesicular
  - Enterocutaneous

(c) 2007, Laurence S. Bailen, MD

28. Crohn's Disease

(c) 2007, Laurence S. Bailen, MD
29. Crohn’s Disease

Crohn’s Disease

- Ileitis
- “String Sign”

(c) 2007, Laurence S. Bailen, MD

30. Mucosal Disease: Crohn’s Disease

Mucosal Disease: Crohn’s Disease

< Normal ileum

Source: L. Bailen

(c) 2007, Laurence S. Bailen, MD
31. Crohn’s Disease: Endoscopy

Images not available due to copyright restrictions.

(c) 2007, Laurence S. Bailen, MD

32. Perianal Disease

(c) 2007, Laurence S. Bailen, MD
33. Distinguishing Features of CD

Distinguishing Features of Crohn’s Disease

- Granuloma
- Focal lesions
- Perineal disease
- Asymmetric involvement
- Small bowel involvement
- Skip lesions
- Fistulization
- Strictures
- Rectal sparing
- 20-30% without gross bleeding

(c) 2007, Laurence S. Bairen, MD

34. Natural Courses of CD – The Facts

Natural Courses of CD – The Facts

- Nearly 80% of patients require surgery within 20 years of onset
- Recurrence within 6 years of surgery: 90% endoscopic/radiologic, 58% symptomatic
- 20% of patients treated with steroids fail to respond after 1 year
- 36% of patients are unable to discontinue steroids due to rapid recrudescence


(c) 2007, Laurence S. Bairen, MD
Crohn’s Disease: Diagnosis

- Clinical history
  - Family history
- Physical exam
- Radiologic evaluation
- Colonoscopy with intubation of ileum
- Serologic testing

(c) 2007, Laurence S. Bailen, MD