IBD: THE ROLE OF PATHOLOGY IN DIAGNOSIS AND DISEASE MONITORING

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HISTOLOGICAL EVALUATION IS PIVOTAL

1. Initial Diagnosis
   • Is this IBD of something else?
   • What else might it be?

2. Classification and Characterisation of Disease
   • Which is it, Crohn’s or UC?
   • Indeterminate Colitis
   • Grading of disease (and prognosis)

3. Disease Monitoring
   • Effects of therapy
   • Remission and associated conundrums
   • Evaluation of dysplasia
1. Diagnosis: Is this IBD or Something Else?

- Infectious Colitides
- Microscopic Colitis
- Degenerative (and vascular) disorders
- IBS + idiopathic disorders
- Inflammatory Bowel Disease
1. DIAGNOSIS: IBD Vs OTHER COLITIDES

- Histological features that are most useful in separating IBD from other inflammatory processes are:
  - Crypt distortion, crypt atrophy, and basal plasmacytosis
  - Severe mononuclear cell infiltration (lymphoid follicles) and Paneth cell metaplasia distal to the splenic flexure.
  - In addition, mucosal eosinophilia is a common finding in active and quiescent disease
1. DIAGNOSIS: WHAT ELSE MIGHT IT BE?

- **Infectious colitis**, ischaemic colitis, diverticular-associated colitis, and intestinal vasculitis
- **Collagenous and lymphocytic colitis** may show distal Paneth cell metaplasia and basal plasmacytosis but the endoscopic exam is normal.
- **Intestinal vasculitis**
- **Radiation Colitis**
GASTROINTESTINAL TUBERCULOSIS

PATHOGENESIS

- *Mycobacterium tuberculosis* is the pathogen in most cases.
- *Mycobacterium bovis* in some parts of the world with no pasteurization of milk.
- *Mycobacterium avium intracellulare* has become a major pathogen in HIV patients.

*(Nial et al., 1997)*
Most active inflammation in submucosa.

- Bacillus in depth of mucosal glands
- Inflammatory reaction
- Phagocytes carry bacilli to Peyers Patches
- Formation of tubercle
- Tubercles undergo necrosis

*Portis (1953)*
PATHOLOGY

Submucosal tubercles enlarge

Endarteritis & edema

Sloughing

Accumulation of collagenous tissue

Thickening & Stenosis

Ulcer formation

(Howell & Knapton, 1964)
PATHOLOGY

Inflammatory process in submucosa penetrates to serosa

Tubercles on serosal surface

Bacilli reach lymphatics

Bacilli via lymphatics

Lymphatic obstruction of mesentery and bowel → Thick fixed mass

Regional lymph nodes
• Hyperplasia
• Caseation necrosis
• Calcification

(Boyed, 1943)
FORMS OF GI TB

- Ulceroconstrictive
  - 60% of patients
  - Highly virulent
  - Mostly small Intestinal

- Hypertrophic
  - 10% of patients
  - Chronic
  - Mostly Ileocoecal

- Mixed
  - 30% of patients

(Howell & Knapton, 1964)
2. WHICH IS IT, UC OR CROHN’S

- **UC**
  - Continuous, non segmental predominantly mucosal disease
  - Rectal involvement, sometimes patchy involvement of right colon and appendix
  - Lack of ileal involvement unexplainable as backwash ileitis

- **Crohn’s**
  - Fissuring ulcers
  - Transmural lymphoid aggregates
  - Granulomas unrelated to infection, crypt rupture or FBs
  - Ileitis or Colitis or both associated with segmental disease, rectal sparing, upper GI involvement

- **Indeterminate Colitis**
INDETERMINATE COLITIS

• IBD with overlapping pathological features of UC and CD so that a definitive diagnosis is difficult if not impossible
• Not a disease but an interim Pathologist’s diagnosis
• No pathognomonic or diagnostic criteria
• An interim position until further info (clinical, radiological or pathological) become available enough to allow a definite classification

MICROSCOPIC COLITIS

- Collagenous Colitis
- Lymphocytic Colitis
3. DISEASE MONITORING

- Assessment of Disease Activity
- Grading
  - Mild, Moderate or Severe
- Dysplasia
  - Flat Dysplasia
  - Polypoid Dysplasia
    - High-grade dysplasia
    - Low-grade dysplasia

1. Engesjø et al. Polypectomy may be adequate treatment for adenoma-like dysplastic lesions in chronic ulcerative colitis. *Gastroenterology* 117; 1288-1294 1999
CHALLENGES IN SSA

• Clinical
  • Not nearly enough Gastroenterologists
  • Dearth of endoscopy and imaging tools
  • Dismal medical records

• Laboratory
  • Other Path labs
    • Microbiology
    • Clinical chemistry
  • Histopathology
    • GIT Pathologists are few and far between
    • Pathology Training in IBD could do with some assistance
Thank you for listening