UPPER ENDOSCOPY AND HISTOLOGY IN THE DIAGNOSIS OF PEDIATRIC INFLAMMATORY BOWEL DISEASE


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Background: Upper gastrointestinal (GI) endoscopy and biopsy has been recommended as part of the initial evaluation of children with suspected inflammatory bowel disease (IBD). It is known that upper GI tract inflammation can be found in both Crohn’s disease (CD) and ulcerative colitis (UC). However, criteria and classification of IBD of the upper GI tract is lacking. To date, specific upper GI tract histologic findings associated with CD include granulomas and focally enhanced active gastritis.

Aims: To perform a retrospective histologic review of biopsies collected at time of diagnosis from the upper GI tract of pediatric patients with known CD and UC to determine specific upper GI histologic features for differentiation of CD and UC.

Methods: Patients between 2 and 17 years diagnosed between 1998 and 2014 with either CD or UC were eligible for inclusion. All underwent both upper endoscopy and colonoscopy at time of diagnosis. A pathologist blinded to IBD diagnosis reviewed H&E slides of esophageal, antral, gastric body and duodenal biopsies taken at the initial assessment before treatment. From each site, these histologic findings were recorded: focal, multifocal or diffuse inflammation, superficial or deep inflammation, acute or chronic inflammation, focally enhanced gastritis, multinucleated giant cells and granulomas. Results were summarized as means. The Student’s t test and χ² test were utilized to compare difference between the two groups. p<0.05 was accepted as statistical significance.

Results: A total of 158 patients, 87 with CD and 71 with UC were included. Mean age was 11.5 years (range 2 to 17 years). CD patients were slightly older (mean age 12.2 vs. 10.8 years in UC, p=0.013). 59% of CD patients had ileocolonic disease and 79% had inflammatory disease. The majority of UC patients (69%) had pancolitis at diagnosis. Macroscopically normal upper GI endoscopy was present in 58/158 (37%) patients [41(26%) UC, 17(11%) CD]. Of the CD patients with grossly normal endoscopy, granulomas were present in 5/17 patients. 30%(n=26) of CD patients had upper GI granulomas (5% esophagus, 18% body, 30% antrum and 2% duodenum). Chronic inflammation (deep, superficial and focal) of the upper GI tract was present in a significantly higher proportion of CD patients than UC patients (94% vs. 78%, p=0.004, Figure 1). In the antrum, chronic deep and superficial inflammation were more common in CD than UC patients (deep-41% vs.7%, superficial-55% vs.18%, p<0.001). Focally enhanced gastritis was seen in only 3 patients (2 UC, 1 CD).

Conclusions: In addition to the presence of granulomas, chronic superficial or deep inflammation of the upper GI tract may be a diagnostic clue in making a diagnosis of CD. However, aside from granulomas, such features may also be present in patients with UC. Focally enhanced gastritis was not a prominent feature in CD patients.
Figure 1. Comparison of chronic inflammation characteristics found on upper GI biopsy in CD (n=87) and UC (n=71) patients

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