Short Report

Segmental Sigmoid Polyposis as a Colonoscopic Indicator of an Ileosigmoid Fistula in Crohn’s Ileitis

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Abstract

Background and aims: Ileosigmoid fistulas (ISFs) are frequently undiagnosed prior to surgery. This study was designed to describe a polyp or cluster of polyps limited to the sigmoid colon as a marker of ISF in patients with ileitis. This novel finding will increase a gastroenterologist’s opportunity to detect them preoperatively and their prognostic implication of worsening ileitis.

Methods: The medical records of patients with Crohn’s disease and ISF were reviewed to determine whether colonoscopy had revealed polyposis limited to the sigmoid colon and its frequency.

Results: Thirty-seven patients with Crohn’s ileitis complicated by ISF were identified from our database. Twenty had one or more sigmoid polyps without polyps elsewhere in the colon suggesting the site of fistula exit. Fifteen of the patients had ISF and five had ileorectal fistula (IRF). The fistula was detected by various means, including colonoscopy, sigmoidoscopy, small bowel X-ray series, barium enema, computed tomography, and magnetic resonance enterography. The ISF was generally diagnosed prior to the recognition and significance of the segmental polyps. These polyps were inflammatory or hyperplastic on pathologic review.

Conclusion: Most ISFs and IRFs are now found preoperatively by imaging and some are incidental surgical findings. The segmental sigmoid polyps that we describe should help the gastroenterologist to be suspicious of ISF. The polyps are a surrogate marker for the progression of the fistula and the underlying ileitis as they tend to appear after the fistula has matured and lead to increased intensity of medical therapy well before surgical intervention is required.

1. Introduction

The internal fistula is a common manifestation of Crohn’s disease (CD). A fistula is defined as a pathologic connection between two epithelial surfaces. Fistulas between the terminal ileum and the sigmoid colon have been described in up to 6% of all patients presenting with CD, in 3.3% of patients with ileitis and in 19% of all patients with internal fistulas.1,2 Clinical symptoms associated with ileosigmoid fistulas (ISFs) were proposed by Marshak,3 who demonstrated the radiological features (example in Figure 1), and subsequently the then current knowledge of this fistula was reviewed by Korelitz in a Festschrift honoring Marshak in the Mount Sinai Journal of Medicine.4

Historically, most ISFs were found at surgery.1,2 Subsequently many diagnostic methods including colonoscopy, small-bowel X-ray, barium enema, computed tomographic (CT) scan and magnetic resonance enterography (MRE) have demonstrated the ISF prior to surgery. However, many fistulas commonly are unsuspected preoperatively and still found incidentally at surgery. Concerns about ionizing radiation and improvements in magnetic resonance technology...
have prompted the increased use of magnetic resonance imaging of the small bowel as a radiation-free alternative to the gastrointestinal/small bowel X-ray. Making the diagnosis of the ISF before surgical intervention has a great advantage because it has now been shown that ISFs respond to both immunosuppressives and to biologicals.5,6

We now describe a novel entity of segmental sigmoid polyposis seen at colonoscopy as a possible prognostic marker of the presence of an ISF.

2. Methods
The records of 2898 patients with the diagnosis of inflammatory bowel disease (IBD) from our database at Lenox Hill Hospital between 1975 and 2014 were reviewed. Of the 1615 patients with CD, 37 had ileitis with an ISF or proximal IRF. Information was extracted from the medical records regarding patient demographics, duration and extent of CD, age at diagnosis, duration of disease prior to fistula diagnosis, and the presence of segmental sigmoid or rectal polyposis by colonoscopy. Polyposis elsewhere in the colon served to exclude the case and confirm its limitation to the sigmoid or rectum. Alphabetically consecutive patients with ileitis and no ISF or IRF were reviewed as controls to determine the presence or absence of sigmoid polyposis.

3. Results
Of 37 patients (18 men) with Crohn’s ileitis with ISF or IRF, 20 demonstrated the hallmark sigmoid/rectal polyposis at the fistula exit point. Fifteen of the patients had ISF and five IRF. The average age at CD diagnosis for these patients was 23 years. Patients had CD for an average of 9 years prior to the diagnosis of the fistula. The fistula was generally diagnosed an average of 4 years before the significance of the sigmoid polyposis was recognized. When these polypos were removed they proved to be inflammatory or hyperplastic on pathologic review. The polyps were noted either as a single polyp or in a cluster. Figure 2 shows 2 examples. The mode of diagnosis of the ISF

Table 1. Mode of diagnosis of ISF or IRF in 37 patients with Crohn’s ileitis from 1975 to 2014.

<table>
<thead>
<tr>
<th>Found at surgery</th>
<th>Found by imaging</th>
<th>Also found by lower endoscopy</th>
<th>Never surgery</th>
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<tr>
<td>Found at surgery</td>
<td>Found by imaging</td>
<td>Also found by lower endoscopy</td>
<td>Never surgery</td>
</tr>
<tr>
<td>6</td>
<td>31 GI/SI</td>
<td>2 GI/SI</td>
<td>17</td>
</tr>
<tr>
<td>17</td>
<td>8 BE</td>
<td>8 CT/MRE</td>
<td>6 CT/MRE</td>
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24 patients eventually had surgery, mostly for small bowel obstruction, but not because of ISF or IRF.

GI/SI, gastrointestinal or small intestinal X-ray series; BE, barium X-ray examination; CT/MRE, CT scan or magnetic imaging of the intestine.

![Figure 1. Ileosigmoid fistula demonstrated by Barium Enema X-ray Examination](image)

![Figure 2. 2 examples of segmental polyposis seen on Colonoscopy](image)
and IRF is shown in Table 1. These fistulas rarely served as the indication for surgery for its own sake without associated obstruction or other damaging fistulae.

In comparison, we present a control group of 37 consecutive patients with CD limited to the ileum who did not have ISF or IRF and who had colonoscopies to determine whether sigmoidal polyposis or any colonic polyposis was present. Among these 37 patients there was one with a rectal polyp and one with a cecal polyp but none with any polyps found in the sigmoid colon.

4. Discussion

We report a series of CD patients with ISF who demonstrate the unreported phenomenon of segmental sigmoid polyposis as a marker of its presence. Fistula development is common in CD and is often associated with an aggressive course. Fistulas between the diseased ileum and the sigmoid colon (or rectum) occur in 15–30% of all patients with internal fistulas. Diagnostic modalities have been historically poor at detecting ISF. One study, however, showed a preoperative diagnosis of the fistula in 69% of patients using a variety of modalities.

Numerous methods can be utilized to evaluate CD and all present relative advantages and disadvantages. Ileocolonoscopy is widely available and a common procedure performed in patients with CD. This new entity, which we call segmental sigmoid polyposis, adds to the ever-growing armamentarium to allow a gastroenterologist to better suspect and diagnose the ISF. Given the frequent coexistence of segmental polyposis, one should anticipate and attempt to diagnose an ISF on its recognition.

Localized inflammatory changes such as mucosal edema and friability have been described at the presumed fistula site in the sigmoid, whereas the adjacent colonic mucosa appears normal and uninvolved. The proposed chronology of this entity is as follows.

The diseased ileum develops deep ulcerations, which target the uninvolved sigmoid colon due to proximity. Once the fistulous tract has become established, the segmental polyposis occurs in the form of a hyperplastic or inflammatory polyp or clusters of polyps.

A causal relationship between ISF and worsening of the underlying ileitis is very likely and the gastroenterologist should be aware of the aggressive nature of a patient’s Crohn’s ileitis when the ISF is detected.

5. Conclusion

Our description of segmental sigmoid polyposis in CD as a coloscopic indicator should alert the gastroenterologist to the possible presence of a previously undiagnosed ISF as well as the likely progression of the primary ileitis and serve to increase the intensity of medical therapy.

References