Ileostomy for Granulomatous Ileocolitis

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SINCE the original description of regional ileitis by Crohn, Ginzburg, and Oppenheimer in 1932,[1] granulomatous disease of the intestinal tract has come to be recognized as an inflammatory disease which may involve any segment of the gastrointestinal tract. Almost 30 years elapsed, however, before granulomatous disease of the colon became an established entity.[2, 6]

Surgical therapy of granulomatous disease is usually confined to patients with either pure regional ileitis, ileocolitis, or pure granulomatous colitis. The principles of surgical management of this group of diseases has been either bypass of the lesion with complete exclusion or resection. Ileostomy is usually avoided because of the mechanical problems introduced by a small bowel stoma, and the risk of recurrence of the granulomatous process either at the stoma or higher in the gastrointestinal tract.

This report describes the authors' personal series of patients in which ileostomy was performed in managing the complications of granulomatous disease of the intestinal tract, and defines the indications and results. It includes patients with pure ileitis, ileocolitis, and pure granulomatous colitis.

Indications

This series includes 17 patients, seven men and ten women, whose ages ranged from 17 to 56 years. The indications for operation are listed in Table 1. It should be noted that several patients had more than one indication for operation.

Seven patients were at the end stage of fulminating disease characterized by severe weight loss, fever, anemia, and hypoproteinemia. All of this group were taking large doses of corticosteroids.

Seven patients had perianal complications, including multiple perianal fistulae, deep fissures, and ischio-rectal abscesses; but in only one was this the only indication for operation.

Case Reports

Several cases are reported which demonstrate major indications.

Case 1. *Perforation:* J. K., Unit #701730 (Fig. 1), a 42-year-old man, had ileitis involving the terminal ileum for six years with an ileosigmoidal fistula. He was admitted with generalized peritonitis due to perforation of a mesenteric abscess into the free peritoneal cavity. An end ileostomy was performed proximal to the diseased ileal segment. The distal cut end of ileum was brought out as a mucous fistula and the peritoneal cavity was drained.

Five months later, the defunctionalized, diseased terminal ileum and adjacent cecum were resected, and the fistula to the sigmoid closed. Intestinal continuity was restored by ileo-ascending colostomy. The patient remains well more than 1 year after the last operation.

Comment: Three patients with perforations had pure ileitis with perforations of mesenteric abscesses and peritonitis, rather than free perforations of the bowel wall. Immediate resection would have required anastomosis in the presence of diffuse peritonitis and unprepared bowel, and the need to open an infected small bowel mesentery and retroperitoneal space.

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TABLE 1. *Indications*

Total Patients 17	
Perforation of Abscess	3
Obstruction	2
Retroperitoneal Abscess &/or Hydroureter	2
Perianal Complications	7
Fulminating Disease	7
Failure of Previous Surgery	2

When the perforation is in the wall of small bowel, we concur with the established surgical principle of immediate resection and anastomosis. In the three patients in this group intestinal continuity was restored. All remain well to date.

Case 2. *Obstruction:* D. H., Unit #078870 (Fig. 2), a 30-year-old woman had three previous resections for granulomatous ileocolitis, eventuating in removal of the distal ileum and almost the entire colon with ileosigmoidostomy. She had also had one previous episode of intestinal obstruction requiring laparotomy for lysis of adhesions. The patient was admitted with complete small bowel obstruction which did not respond to long tube decompression.

At laparotomy, the obstruction was found to be due to a short segment of recurrent ileitis in the small bowel immediately proximal to the ileosigmoidostomy. Ileostomy was performed proximal to the diseased segment with creation of a mucous fistula distally.

Three months later, the area of recurrence was resected and a new ileoproctostomy formed. The patient is now well.

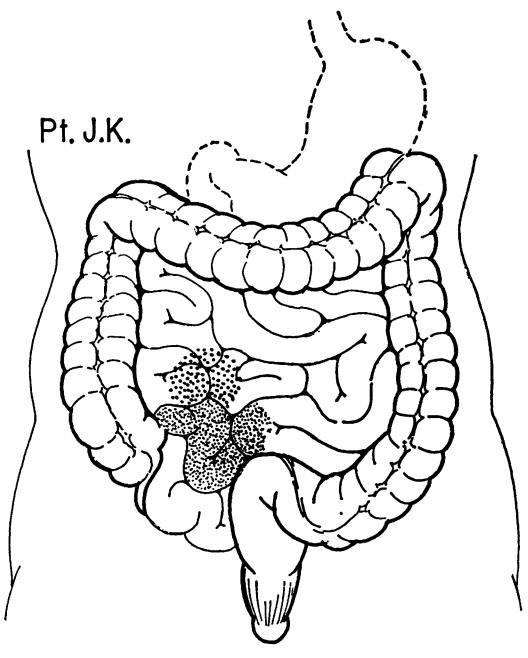

FIG. 1. Perforation of mesenteric abscess.

Comment: Intestinal obstruction is a relatively frequent complication of ileitis. While it appears occasionally in the acute phase of the disease due to edema, it is more common in the late phase due to healing with cicatrization of all layers of the bowel wall. Although episodes of acute obstruction are frequent and recurrent, they almost always respond to long tube decompression.

In this patient, ileostomy permitted immediate relief of obstruction without the need for anastomosis of obstructed, distended, unprepared bowel. Ileostomy did not preclude subsequent elective resection and restoration of intestinal continuity.

Case 3. *Retroperitoneal Abscess and Hydroureter:* R. Z., Unit #338956 (Fig. 3), a 20-year-old woman with ileitis for many years, was admitted with a large retroperitoneal abscess pointing over the right sacro-iliac joint. The disease was known to involve the terminal ileum with a sigmoidal fistula, although there was no intrinsic colonic disease. She had high fever, leucocytosis, and tachycardia. An intravenous pyelogram demonstrated a right hydroureter and hydronephrosis as a result of obstruction from the abscess.

Shortly after admission, the abscess was drained through a posterior extraperitoneal incision. Forty-eight hours later, ileostomy was performed. The patient improved dramatically, with prompt cessation of fever, and reduction in the size of the hydroureter and hydronephrosis.

Six months later the diseased, defunctionalized terminal ileum and cecum were resected; and the sigmoid fistula closed. Two weeks later the ileostomy was taken down and continuity restored by ileo-ascending colostomy. The patient remains well 2 years after the last operation.

Case 4. S. H., Unit #313562 (Fig. 4), a 19-year-old woman, had granulomatous disease involving the terminal ileum, the entire colon, and the rectum. There were multiple perianal and rectovaginal fistulas. She was acutely ill on admission, febrile and cachetic, with a large perisigmoid ab-

scess and left hydronephrosis and hydroureter. A completely diverting double-barreled ileostomy was performed as a first stage procedure with immediate improvement in her general condition. Subsequently subtotal colectomy, and later abdominoperineal resection of the rectum, and several revisions of the ileostomy for mechanical difficulties were performed. Perianal and rectovaginal fistulas continued to drain until the colon and rectum were removed. At present the ileostomy functions well. She returned to school, graduated from college and at present is a graduate student.

Comment: These two patients demonstrate a complication of granulomatous disease recently described by Present *et al.*[4] Obstructive hydronephrosis and hydroureter secondary to retroperitoneal inflammation and abscess may require drainage to relieve the ureteral obstruction as in patient R. Z. Simple drainage of the obstructing abscess, however, without diversion of the intestinal stream, leads to an almost certain fecal fistula through the drainage site. Ileostomy has the advantage of prompt and total fecal diversion without need for mobilizing the bowel in the area of the abscess.

Case 5. ***Perianal Disease:*** **J. M., Unit #744552 (Fig. 5), a 47-year-old man, underwent ileocolic resection with ileotransverse colostomy for ileitis 7 years before the present admission. He now entered the hospital with multiple perianal fistulas. At least one fistula was "horseshoe" shaped, and the tracts were deep to the anal sphincters at several locations. The patient was unable to work because of severe perianal pain, although he had no diarrhea.**

At operation, a short segment of recurrent disease was found in the ileum immediately proximal to the anastomosis. Ileostomy was performed with exclusion of the recurrent disease. Since operation, perianal sinuses continue to drain but much less than before. He has gained weight, is pain-free, and has returned to full employment. No direct operation on the fistulas has yet been undertaken.

Comment: Perianal complications occur in more than 60% of patients with granulomatous disease of the intestine. The incidence is particularly high when there is associated involvement of the rectum.

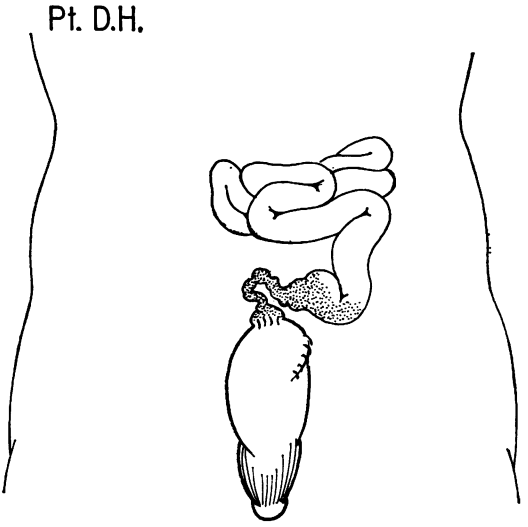

FIG. 2. Obstruction.

Direct operation on perianal fistulas almost invariably fails if the underlying intestinal disease is not dealt with. The sites of drainage of abscesses and fistulectomies develop typical gaping defects, with heaped up weeping granulations at the margins, and incontinence frequently follows.

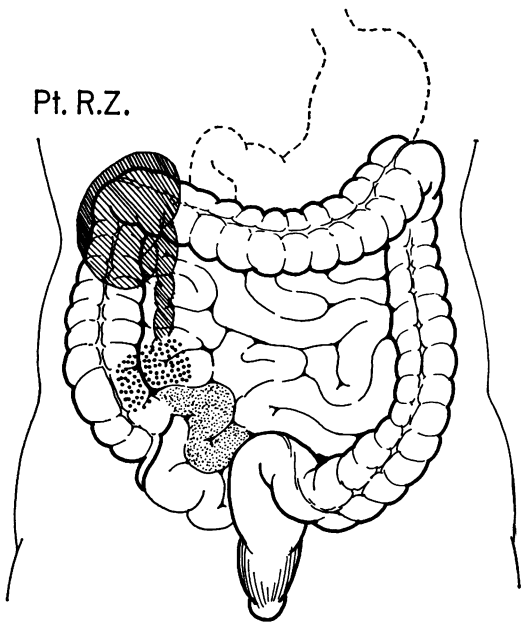

FIG. 3. Retroperitoneal abscess—right hydroureter.

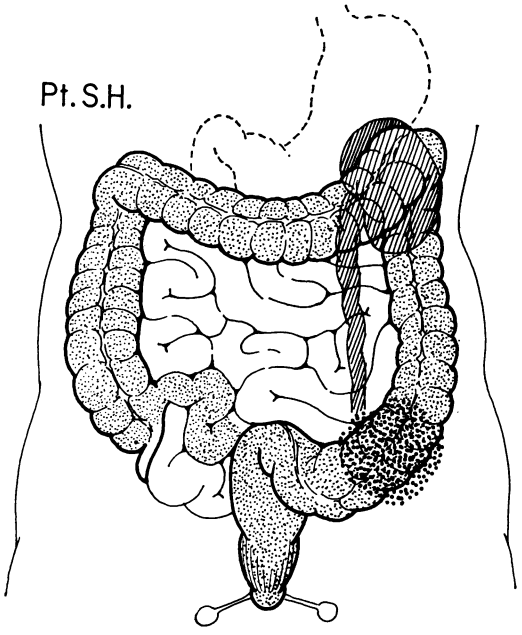

FIG. 4. Retroperitoneal abscess—left hydroureter.

In this patient any attempt at local operation upon the perianal suppuration would almost certainly have resulted in incontinence, as well as failure of healing.

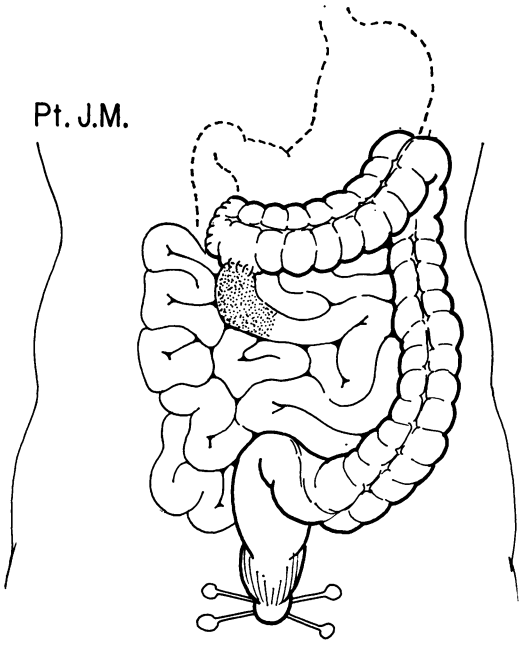

FIG. 5. Perianal disease.

The patient will still require some local operative treatment, but it is hoped that there will be resolution of the inflammatory and suppurative process, so that limited operation may be undertaken. Also, at the time of operation, diversion of the fecal stream will provide for better healing. Thereafter, it should be possible to resect the recurrent diseased tissue and reestablish intestinal continuity.

Case 6. *Fulminating Disease:* M. S., Unit #319401 (Fig. 6), a 20-year-old man, was admitted with disease involving the terminal ileum, transverse colon and sigmoid. There were multiple perianal fistulas, but the indication for operation was weight loss of more than 100 pounds in 3 years. This weight loss progressed despite intensive medical therapy, both to improve nutrition and control the underlying disease.

Ileostomy and subtotal colectomy were performed. Postoperatively the patient doubled his weight in 6 months. He is now working full time. His rectum remains in place, but restoration of intestinal continuity is uncertain because of perianal disease.

Comment: The courses were fulminating in seven patients. In all, profound weight loss was dominant, and prompt postoperative weight gain has been an indication of the effectiveness of therapy. In universal ulcerative colitis, it is often pointed out that the toxic course of the illness is not reversed until the diseased colon is removed. This is in contrast to granulomatous ileocolitis, where simple diversion of the fecal stream may reverse many of the systemic aspects of the illness. Truelove, Ellis, and Webster,[5] and more recently Oberhelman and associates[8] have emphasized this distinction.

In patient M. S. resection of the diseased ileum and colon were simultaneous with ileostomy. A number of patients, however, had marked weight gain, loss of fever, improvement of appetite, and return of a sense of well being after ileostomy even though the disease segment remained *in situ*. This was true even though large doses

of corticosteroids were discontinued after ileostomy.

Surgical Procedures and Results

Table 2 summarizes the surgical procedures in 17 patients, and results of operation to date.

Thirteen patients had ileostomies alone as the first procedures. Four had ileostomies and subtotal colectomies performed simultaneously. Review of the subsequent course of these 17 patients reveals several interesting features:

1. Of the four patients undergoing subtotal colectomies and ileostomies, two had abdominoperineal resections performed subsequently, and in two the rectums are still present. One patient died early after abdominoperineal resection from an undiagnosed liver abscess. This was the sole operative mortality. The second patient remained well for 2 years after abdominoperineal resection, at which time she developed an abdominal wall abscess. Drainage of the abscess disclosed a fistula leading to the stoma. The terminal ileum was resected and the ileostomy stoma transferred. Pathological examination showed recurrent ileitis. This patient remains well without evidence of further recurrence for 4 years.

Two patients on whom one stage ileostomies and subtotal colectomies were performed have their rectums still in place. One is in excellent health. The other developed short bowel syndrome and recurrent ileitis in the stoma which required resection and revision.

2. Thirteen patients had ileostomies alone as the first surgical procedure. Six of these have had diseased segments resected and intestinal continuity restored, including three who had perforations of mesenteric abscesses. All these patients had disease localized to the small bowel, without colonic involvement.

Three patients had subsequent total colectomies. All had extensive colonic and rectal disease.

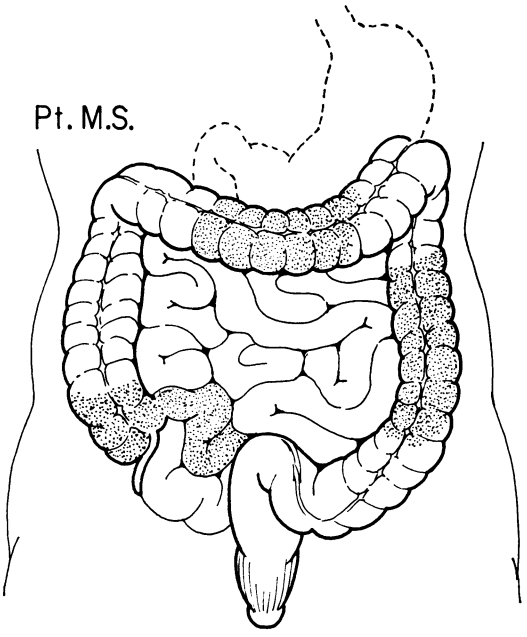

FIG. 6. Fulminating disease.

Four patients have had no further operations. Two refused operation; although both have diseased colons *in situ*, they are asymptomatic, well nourished, taking no medication, and functioning normally.

Two patients developed malignant neoplasms in defunctionalized colon at the site of persistent ileo-colo-vesical fistulas. One died with a mixed mesodermal tumor of the rectosigmoid with hepatic metastases, 12 years after the first symptoms of ileitis, and 6 years after ileostomy. The other patient developed adenocarcinoma of

TABLE 2. *Surgical Procedures*

Ileostomy and Subtotal Colectomy		4
Subsequent abdomino-perineal	2	
Death (liver abscess)	1	
Ileitis in stoma	1	
Rectum remains	2	
Ileitis in stoma	1	
Ileostomy Alone		13
Restoration of continuity planned or or accomplished	6	
Subsequent total colectomy	3	
No further operation	4	

the sigmoid 17 years after the first symptoms of ileocolitis, and 2 years after ileostomy.

In both latter patients the malignant neoplasms appeared many years after the onset of granulomatous disease, and in both the lesions were found adjacent to ileo-colo-vesical fistulas. It is speculative whether granulomatous disease, or the mechanical or irritant effect of the fistulas was related to these neoplasms.

Summary and Conclusions

1. Ileostomy has a place in the management of granulomatous disease of the small and large bowel. Indications for its use are perforation of mesenteric abscess, obstruction, retroperitoneal abscess, perianal suppuration, fulminating disease, and failure of previous operations.

2. The advantage of ileostomy is that it provides prompt diversion of the fecal stream without the need for resection and anastomosis in the presence of peritonitis, obstruction, infection, or severe systemic illness.

3. When the disease is limited to the ileum, or when the distal colon or rectum is normal, and there is no perianal suppuration, staged resection of the diseased intestine and restoration of intestinal continuity may be anticipated.

4. When restoration of continuity is not feasible, resection of the diseased segment may be carried out simultaneously with or subsequent to the ileostomy.

5. Two patients developed recurrent ileitis in the stoma.

6. Two patients developed malignant tumors in defunctionalized colon at the site of ileo-colo-vesical fistulas.

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