Long-Term Response to Subtotal Colectomy in Colonic Inertia

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The purpose of this study was to determine the long-term outcome of patients who had previously undergone subtotal colectomy for severe idiopathic constipation at the University of Florida between 1983 and 1987. In addition, we aimed to determine whether preoperative motility abnormalities of the upper gastrointestinal tract are more common among those patients who have significant postoperative complications after subtotal colectomy. We evaluated 13 patients who underwent subtotal colectomy for refractory constipation between 1983 and 1987 at the University of Florida. Preoperatively, all patients exhibited a pattern consistent with colonic inertia as demonstrated by means of radiopaque markers. Each patient was asked to quantitate the pain intensity and frequency of their bowel movements before and after surgery. In seven patients an ileosigmoid anastomosis was performed, whereas in six patients an ileorectal anastomosis was used. Abdominal pain decreased after subtotal colectomy. Patients with abnormal upper gastrointestinal motility preoperatively experienced greater postoperative pain than those with normal motility regardless of the type of anastomosis. In addition, the number of postoperative surgeries was similar in those patients with abnormal upper motility compared to those with normal motility. Overall, the total number of bowel movements per week increased from 0.5 ± 0.03 preoperatively to 15 ± 4.5 (P < 0.007) postoperatively. The results of our study suggest that patients with isolated colonic inertia have a better long-term outcome from subtotal colectomy than patients with additional upper gastrointestinal motility abnormalities associated with their colonic inertia. (J GASTROINTEST SURG 2002;6:738–744) © 2002 The Society for Surgery of the Alimentary Tract, Inc.

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Constipation is a common complaint that affects up to 34% of the general population. The severity and duration of symptoms are often varied with a subgroup of patients who are refractory to all medical therapy. Motility disturbances, drugs, metabolic and endocrine abnormalities, malignancies, pelvic outlet obstruction, and a host of other abnormalities may cause constipation and should be entertained in the initial diagnostic evaluation. In addition to fiber supplementation, treatment usually includes osmotic laxatives, misoprostol, colonic lavage solutions (i.e., Colyte), and prokinetic agents. Other agents such as colchicine have also been shown to be effective. A subgroup of patients with severe idiopathic constipation fail to respond to these initial treatment measures. These are often young women who have significant abdominal discomfort that interferes with their social activities and ability to work. Some patients may eventually require subtotal colectomy for relief of their obstructive symptoms. Subtotal colectomy is usually effective for severe constipation; however, some patients may have significant postoperative complications.

The purpose of this study was to determine the long-term outcome of patients who had extensive preoperative motility testing and underwent subtotal colectomy for severe idiopathic constipation at the University of Florida between 1983 and 1987. We chose to study patients who had surgery between 1983 and 1987 as they underwent extensive preoperative motility testing; silver staining on the myenteric plexus of the resected colon was performed in all of them. In addition, we aimed to determine whether preoperative motility abnormalities of the upper gas-
trointestinal tract were more common among those patients with significant postoperative abdominal pain and complications after subtotal colectomy. Finally, we compared postoperative results in those patients who underwent an ileosigmoid anastomosis vs. those who had an ileorectal anastomosis.

MATERIAL AND METHODS

We retrospectively evaluated 13 patients with a history of severe idiopathic constipation who had previously undergone subtotal colectomy between 1983 and 1987 at the University of Florida based on incapacitating symptoms of constipation, abdominal pain, and bloating. The studies were approved by the University of Florida Institutional Review Board and the Human Use Committee. Prior to colectomy, an extensive workup was performed to exclude diabetes mellitus, hypothyroidism, collagen vascular diseases, and systemic neurologic diseases. All patients underwent antroduodenal manometry before surgery to evaluate for motility disorders in the upper gastrointestinal tract. Patients were admitted to the Clinical Research Center after an overnight fast. Antroduodenal manometry was performed after an overnight fast. Gastroduodenal motor activity was measured with a semiconductor recording probe (Millar Instruments, Houston, Texas) that was placed into the small bowel perorally, under fluoroscopic guidance, such that the most proximal three ports (5 cm apart) were positioned in the antrum and the distal three ports (10 cm apart) were located in the duodenum with the most distal lead at the ligament of Treitz. Probe recordings were obtained for 24 hours.

Colonic transit was measured in all patients by asking them to swallow a capsule with 24 radiopaque rings (Sitz marker). Normal colonic transit was defined by passage of at least 80% of the markers within 5 days and all of the markers by day 7. Slow-transit constipation or colonic inertia was defined by retention of six or more markers throughout the left colon, or in both the right and left colon on day 5. A predominance of markers in the rectosigmoid colon was considered suggestive of pelvic outlet dysfunction. Preoperatively all of the patients exhibited a pattern consistent with colonic inertia with radiopaque markers noted throughout the colon. Anorectal manometry and defecography were performed in all patients to exclude pelvic floor abnormalities. After colectomy, colonic tissue was evaluated with the use of both conventional staining techniques and silver staining (courtesy of M.D.S.) to delineate myenteric plexus abnormalities.

Each patient was asked to quantify the severity of their pain on a scale of 0 to 10 (0 = none; 10 = most severe) and the frequency of their bowel movements during an office visit immediately before surgery. The severity of pain and frequency of bowel movements were documented in the patients’ medical records by the surgeon. During our follow-up study, patients were again asked to rate the severity of their pain and the frequency of their bowel movements. In addition, patients were also questioned regarding episodes of fecal incontinence and their overall satisfaction with the surgery.

Data Analysis

All results are expressed as mean ± standard error of the mean (SEM). Paired and unpaired t tests were used for all comparisons. The level of significance was selected as P < 0.05.

RESULTS

A total of 13 patients were studied, all of them women who initially developed constipation between the ages of 10 and 58 years (mean 22.9 ± 4.5 years). Preoperatively all patients had intractable constipation with a mean stool frequency of 0.5 ± 0.03 bowel movements per week. In addition, all patients reported severe abdominal pain and bloating. Most patients noted intermittent pain that was located in the midabdomen and pelvic region. None of the patients had a dilated small bowel on preoperative barium studies, and none had any radiographic evidence of small bowel air-fluid levels preoperatively to suggest chronic intestinal pseudo-obstruction. Subtotal colectomy was performed in patients between the ages of 26 and 67 years (46.2 ± 3.5 years). Seven patients underwent an ileosigmoid anastomosis, whereas six underwent an ileorectal anastomosis because of redundant sigmoid colon, as shown on a preoperative barium enema. All of the operations were performed by the same surgeon at our institution.

During the preoperative evaluation, a total of nine patients had abnormal 24-hour antroduodenal manometric findings that included abnormal propagation of activity fronts, bursts of nonpropagated phasic pressure activity, sustained incoordinated fasting pressure activity, and failure of a meal to induce a fed pattern. These findings have been previously described in patients with small bowel dysmotility and intestinal pseudo-obstruction. There were no small bowel motility abnormalities present that have been previously described in patients with mechanical bowel obstruction and/or adhesion disease. All patients had delayed colonic transit with a pattern consistent with