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Ogilvie's Syndrome
Successful Management without Colonoscopy

ALAN F. SLOYER, MD, VINCENT S. PANELLA, MD, BARBARA E. DEMAS, MD, MOSHE SHIKE, MD, CHARLES J. LIGHTDALE, MD, SIDNEY J. WINAWER, MD, and ROBERT C. KURTZ, MD

We reviewed the clinical presentation, management, and outcome of 25 patients with Ogilvie's syndrome (acute colonic pseudoobstruction) at Memorial Sloan-Kettering Cancer Center from 1982 through 1985. All patients had cancer and severe associated medical problems. Abdominal x-rays uniformly showed cecal distension ranging between 9 and 18 cm. Twenty-four of the 25 patients were treated with conservative nonendoscopic management. One patient had an exploratory laparotomy for prophylactic cecostomy after only one day of conservative therapy. Of the 24 patients treated conservatively, 23 (96%) improved by both clinical and radiologic criteria in a mean of 3.0 days. The remaining patient died of multisystem failure not related to the acute colonic pseudo-obstruction. Colonoscopic decompression was not attempted in any of the 25 patients. There were no colonic perforations, and there were no pseudoobstruction-related deaths. This study questions the need for early endoscopic or surgical treatment in cancer patients with acute colonic pseudoobstruction.

KEY WORDS: acute colonic pseudoobstruction; management.

In 1948, Ogilvie described two patients who presented with signs and symptoms so strongly suggestive of colonic obstruction that exploratory surgery was performed despite the absence of obstruction on preoperative barium studies (1). In each case, the operation disclosed a normal, unobstructed colon associated with extensive malignant disease that involved the celiac axis and semilunar ganglion. The term Ogilvie's syndrome has since been applied to patients with rapid dilatation of the colon without a mechanical cause.

Acute colonic pseudoobstruction (ACPO) is an important clinical problem in patients with malignant disease at Memorial Sloan-Kettering Cancer Center (MSKCC). Recommendations for management of ACPO have included endoscopic colonic decompression and prophylactic surgery. However, the natural history of this syndrome is unclear in patients with cancer, and it is not known whether spontaneous resolution might commonly occur without endoscopic or surgical intervention. We have, therefore, reviewed the recent experience with Ogilvie's syndrome at MSKCC.

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From the Gastroenterology Service, Department of Medicine, Memorial Sloan-Kettering Cancer Center and Cornell University Medical College, and the Department of Medical Imaging, Memorial Sloan-Kettering Cancer Center, New York, New York.

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Address for reprint requests: Dr. Robert C. Kurtz, Gastroenterology Service, Memorial Sloan-Kettering Cancer Center, 1275 York Avenue, New York, New York 10021.

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TABLE 1. PRESENTING FEATURES OF COLONIC PSEUDOOBSTRUCTION (N = 25)

	Number of patients (%)
Abdominal distension	21 (84)
Abdominal pain	14 (56)
Constipation	8 (32)
Diarrhea	5 (20)

TABLE 2. MEDICAL CONDITIONS ASSOCIATED WITH COLONIC PSEUDOOBSTRUCTION (N = 25)

	Number of patients (%)
Chemotherapy/radiotherapy	15 (60)
Sepsis	11 (44)
Narcotics	10 (40)
Surgery	9 (36)
Renal failure	3 (12)
Hypercalcemia	2 (8)
Antibiotic-associated colitis	2 (8)

MATERIALS AND METHODS

The records of all MSKCC inpatients with the diagnoses of paralytic ileus, cecal perforation, intestinal perforation, abdominal distension, and colonic ileus were reviewed from 1982 through 1985. A total of 267 patients were identified. Of these, 25 (9.3%) patients met the diagnostic criteria of ACPO, and include all patients with this diagnosis seen by the gastroenterology and surgery departments during this time period. These 25 patients constituted our study population.

Acute colonic pseudoobstruction was defined as a selective or disproportionate gaseous distension of the colon in the absence of mechanical obstruction. The diagnostic criteria for ACPO included all of the following: (1) abdominal distension and tympany seen in a patient with severe underlying medical problems; (2) an abdominal x-ray demonstrating colonic dilatation with gas, with a cecal diameter of at least 9 cm; (3) the absence of differential air–fluid levels in the bowel on an upright film of the abdomen; and (4) the absence of mechanical obstruction as ruled out by either sigmoidoscopy and/or barium enema, exploratory laparotomy, or by the resolution of abdominal distension and colonic dilatation on subsequent abdominal x-rays.

Time to resolution was defined as the number of days after presentation of the ACPO that a reduction in size of the cecal diameter was first noted on x-ray, which subsequently continued to normality.

Life-table techniques (2) were used to depict the percent resolved by days with conservative management.

RESULTS

The mean age of the 25 study patients was 57.7 years. There were 21 men and four women. All the patients had a malignancy, including 17 patients with nongastrointestinal tract cancer, of which almost half were lung cancer. There were four patients with gastrointestinal tract cancer (pancreas, gallbladder, and stomach) and four patients with lymphoma or leukemia. The major presenting clinical features are shown on Table 1. All of our patients had severe associated medical problems (Table 2).

Abdominal x-rays (Figure 1A) uniformly showed colonic distension out of proportion to small bowel dilatation, with the right side of the colon affected more than the left side. The mean cecal diameter was 11.7 cm, with a range of 9–18 cm. Mechanical obstruction was excluded by sigmoidoscopy and/or barium enema in 10/25 patients. One patient had an exploratory laparotomy for prophylactic cecal decompression when his cecal diameter reached 15 cm. No mechanical obstruction was identified. In the remaining 14 patients, obstruction was ruled out on a clinical basis by subsequent resolution of the pseudoobstruction with conservative nonendoscopic therapy.

Of the 25 patients in the study population (Table 3), 24 were treated with conservative management alone. Conservative management included one or more of the following: nothing by mouth (NPO), nasogastric suction, gentle enemas, rectal tube, decrease in narcotic dosage, and treatment of underlying sepsis. Of the 24 patients treated conservatively, 23 (96%) improved by both clinical and radiologic criteria (Figure 1B). The mean time to improvement was 3.0 days (range 1–27 days). Seventy percent of the patients resolved within two days of conservative therapy; 93.7% resolved within six days of conservative therapy (Figure 2). The median time until resolution was 1.6 days. One patient died of multisystem failure and, although no autopsy was performed, there was no clinical evidence of bowel perforation. The surgically treated patient had only one day of conservative therapy prior to laparotomy. Colonoscopic decompression was not attempted in any of the 25 patients. There were no colonic perforations, and there were no pseudoobstruction related deaths in our 25 patients.

DISCUSSION

The fear of impending colonic perforation is central to the question of the need for or timing of either surgical or colonoscopic decompression in ACPO. Cecal perforation is an uncommon compli-

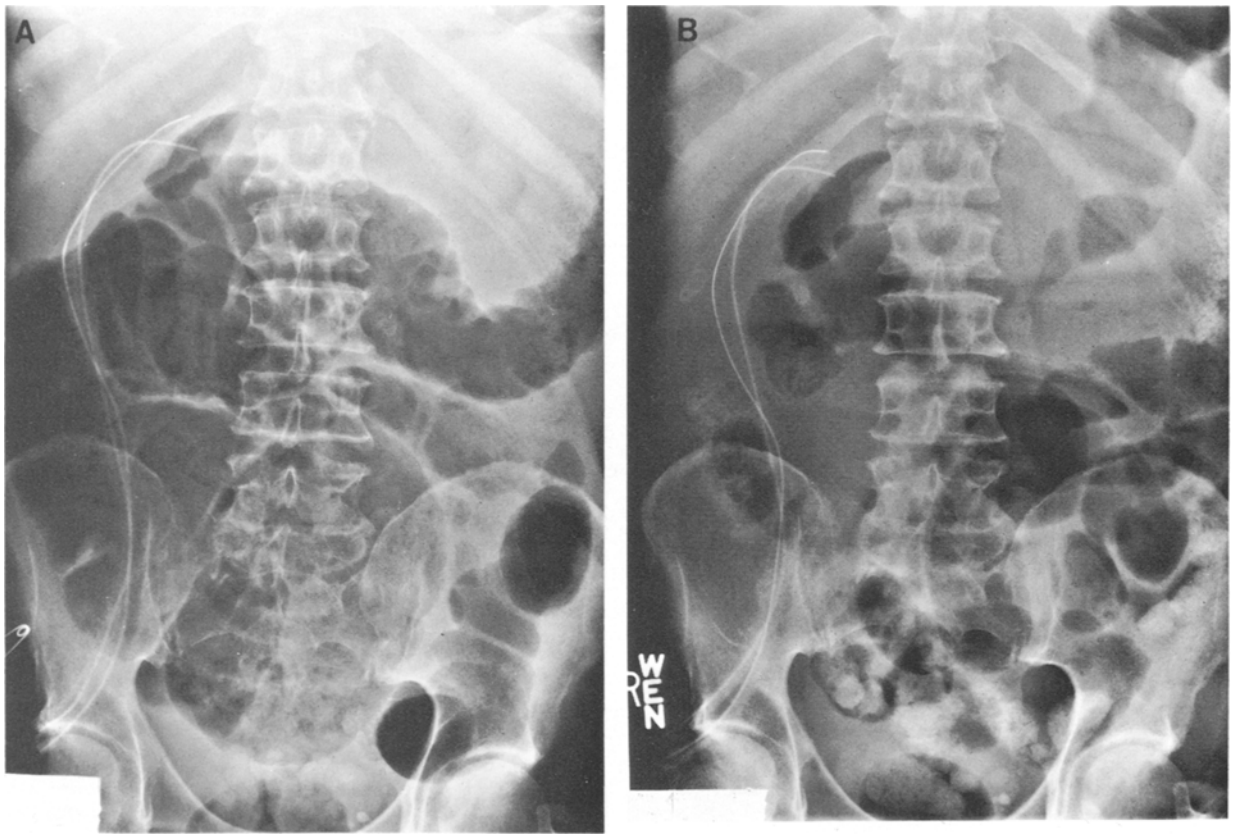

Fig 1. Radiograph of the abdomen. (A) Acute colonic pseudoobstruction in a 58-year-old patient with gallbladder cancer. The cecal diameter is 17 cm. (B) Resolution of the pseudoobstruction after three days of nonendoscopic, conservative management.

cation of pseudoobstruction, ranging from 0 to 13.5% (3–6). No study, to date, has identified predictive factors for perforation in ACPO. Several retrospective series have empirically recommended early surgical or colonoscopic decompression if the cecal diameter exceeds 9–12 cm (7–11). However, Johnson and Rice (3) studied 37 patients with ACPO and concluded that incidence of perforation does not correlate with the diameter of the cecum. There have been case reports of cecal diameters as large as 25 cm treated conservatively with resolution of the pseudoobstruction (4). In the series of Johnson and Rice, only the duration of the cecal distension correlated with perforation. The mean duration of

TABLE 3. MANAGEMENT OF COLONIC PSEUDOOBSTRUCTION (N = 25)

	Number of patients (%)
Conservative	24
Improved*	23 (96)
Unrelated death	1 (4)
Surgery (prophylactic)	1
Perforations	0

*Mean time to improvement = 3.5 days; range = 1–27 days.

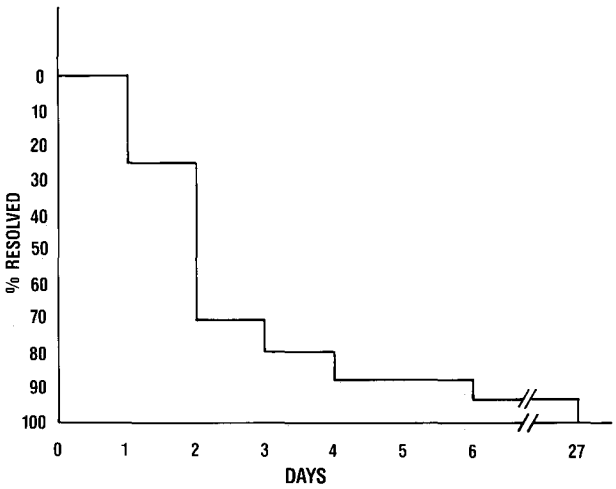

Fig 2. Time to resolution of acute colonic pseudoobstruction in patients having nonendoscopic, conservative management. Seventy percent of the cases resolved within two days of conservative management. Median time to resolution was 1.6 days.

TABLE 4. COLONOSCOPIC DECOMPRESSION OF PSEUDOOBSTRUCTION

Reference	*Patients* (N)	*Initial success*	*Ultimate success*	*Spontaneous resolution*	*Colonoscopic complication*	*Colonoscopic death*	*Surgery*
Nivatvongs et al, 1982 (12)	22	15 (68%)	16 (73%)	2 (9%)			4 (18%)
Strodel et al, 1983 (13)	44	27 (61%)	32 (73%)	3 (7%)	2 (5%)		9 (20%)
Bode and Beart, 1984 (14)	22	15 (68%)	17 (77%)	1 (5%)	1 (5%)	1 (5%)	3 (14%)
Nakhgevany, 1984 (15)	10	9 (90%)	9 (90%)				1 (10%)
Totals	98	66 (67%)	74 (76%)	6 (6%)	3 (3%)	1 (1%)	17 (17%)

cecal distension in those patients who perforated was 6.4 days, compared with 2.0 days in those who did not.

There are no prospective studies evaluating the management of ACPO. There have been several retrospective studies that suggest benefit of colonoscopic decompression in the management of these patients (12–15). Table 4 summarizes the four largest series. There is a combined total of 98 patients in these four studies. Each patient had at least one attempt at colonoscopic decompression. The success rate is 74%, which includes 15 (15%) patients in which two or more attempts at colonoscopy were required before decompression was achieved. Seventeen patients (17%) required surgical decompression despite one or more attempts at colonoscopy. In six patients (6%), the colonic dilatation resolved spontaneously after a failed colonoscopy. Three (3%) patients had a complication of colonoscopy, including colonic perforation and cardiac arrest.

These series are weighted in favor of colonoscopy, as they only reported on those patients referred for colonoscopy. Information on those patients with ACPO who were not referred for colonoscopy during the same period at each reporting institution would be useful. It is unclear if and for how long conservative therapy was tried prior to colonoscopy, and what precise clinical criteria constituted a failure of conservative management necessitating endoscopy. Only the series of Strodel et al (13) included duration of conservative therapy (mean 2.6 days) prior to attempted colonoscopy and pre- and postprocedure mean cecal diameters of 12.7 and 8.7 cm, respectively. These studies do not demonstrate that successful colonoscopic decompression changes the course of ACPO when compared to conservative nonendoscopic management alone. In addition, one must consider that colonoscopy performed in this setting has a morbidity (3%) and mortality (1%) that is considerably higher than colonoscopy in patients without colonic pseudoobstruction (0.2 and 0.06%) (16).

Several studies of ACPO have been reported that are not biased toward colonoscopic decompression (Table 5). Wanebo et al (17) studied 23 patients and operated on them if cecal diameter was 12 cm or larger. Nine patients went to surgery, and four died postoperatively. Of those not operated on, 12 of 14 patients resolved with conservative management alone. Meyers (5) studied nine patients with ACPO. Six of seven patients treated conservatively resolved. Bachulis and Smith (6) reported on 35 patients with ACPO. Nine patients went to surgery, of which five were for prophylactic decompression and four for perforation. In three of these patients, bowel perforation was the initial presenting feature of their ACPO. Twenty-two (85%) of the 26 patients in the nonoperative group resolved with conservative management alone. Eight of the nine patients who required surgery did not receive prior optimal conservative treatment for a minimum of two days. Baker et al (4) reviewed 11 patients, all of whom were treated nonoperatively. Ten of 11 (91%), including those with cecal diameters ranging from 14 to 25 cm, resolved with conservative management alone in a mean time of less than two days. Johnson and Rice (3) reported 37 cases of ACPO. Eight patients went to surgery for prophylactic decompression. Twenty-two of 29 patients (76%) treated conservatively rapidly resolved (mean of two days). Two patients underwent attempts at colonoscopic decompression, and one suffered a bowel perforation as a result.

Including our group of 25, there are 140 patients in these combined series. Twenty-nine patients were in the surgically treated group, of which 25 (86%) had a prophylactic surgery. One hundred eleven patients were treated without surgery. Of these, 95 (86%) patients had resolution of the pseudoobstruction with conservative therapy alone.

TABLE 5. MANAGEMENT OF COLONIC PSEUDOOBSTRUCTION

		Surgery				No surgery					
Reference	*Patients (N)*	*Patients (N)*	*Cecal diameter (cm)*	*Prophylactic decompression*	*Perforation*	*Patients (N)*	*Cecal diameter (cm)*	*Resolved*	*Colonoscoped*	*Perforation*	*Unrelated death*
Wanebo, et al, 1971 (17)	23	9	>12	9	—	14	9–12	12		0	2
Meyers, 1977 (5)	9	2	14–18	2	—	7	8.5–17	6		1	
Bachuli and Smith, 1978 (6)	35	9	7–17	5	4	26	8–15	22	2	0	2
Baker et al, 1979 (4)	11	0		—	—	11	10–25	10		1	
Johnson and Rice, 1985 (3)	37	8		8	—	29		22	2	5	
Present study	25	1	15	1	—	24	9–18	23		0	1
Totals	140	29 (21%)		25	4	111 (79%)		95	4	7	5

None of these patients received attempts at surgical or colonoscopic decompression. Seven patients (6%) had bowel perforation. However, they were followed for an average time of over seven days with conservative therapy prior to the perforation. Five patients (5%) died of causes unrelated to colonic pseudoobstruction, and four (4%) were treated with colonoscopic decompression. One of these patients had a cecal perforation during colonoscopic decompression.

A summary of the available data shows that the incidence of perforation correlates with the duration of cecal distension but not with the diameter of the cecum. Overall endoscopic success was 75%; however, resolution with conservative nonendoscopic management alone was 86%. The complication rate of colonoscopy in pseudoobstruction was high at 3%, with a mortality rate of 1%. This is significantly greater than colonoscopy in patients without ACPO (16). The majority (96%) of our patients with cancer and colonic pseudoobstruction improved rapidly with conservative nonendoscopic therapy alone. We had no colonic perforations and no pseudoobstruction related deaths.

Acute colonic pseudoobstruction represents a spectrum of disease. In our patient population, as in Ogilvie's original description, all patients had cancer. We were able to lower the dose of pain medication and treat the underlying sepsis in some cases. This may be more difficult to do in other subsets of patients with ACPO, such as those with severe burns or trauma. Our study demonstrates that the initial management of ACPO should be directed toward eliminating or reducing those factors known to contribute to this problem. We do not feel that early endoscopic or surgical treatment is necessary in cancer patients with acute colonic pseudoobstruction. We can conclude from other studies that if the acute colonic pseudoobstruction does not respond to conservative measures, or worsens during the initial period of management, one may consider colonoscopic decompression prior to surgical intervention.

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REFERENCES

1. Ogilvie H: Large-intestine colic due to sympathetic deprivation: A new clinical syndrome. Br Med J 2:671–673, 1948
2. Kaplan EL, Meier P: Nonparametric estimation from incomplete observations. J Am Stat Assoc 53:457–481, 1958
3. Johnson CD, Rice RP: The radiographic evaluation of gross cecal distension. Am J Radiol 145:1211–1217, 1985
4. Baker DA, Morin ME, Tan A, Sue HK: Colonic ileus: indication for prompt decompression. JAMA 241:2633–2634, 1979
5. Meyers MA: Colonic ileus. Gastrointest Radiol 2:37–40, 1977
6. Bachulis BL, Smith PE: Pseudo-obstruction of the colon. Am J Surg 136:66–72, 1978
7. Spira IA, Wolff WI: Gangrene and spontaneous perforation of the cecum as a complication of pseudo-obstruction of the colon: report of three cases and speculation as to etiology. Dis Colon Rectum 19:557–562, 1976
8. Wojtalik RS, Lindenauer SM, Kahn SS: Perforation of the colon associated with adynamic ileus. Am J Surg 125:601–606, 1973
9. Gierson ED, Storm FK, Shaw W, Coyne SK: Caecal rupture due to colonic ileus. Br J Surg 62:383–386, 1975
10. Macmanus Q, Krippaehne WW: Diastatic perforation of the cecum without distal obstruction: Case report and review of the literature. Arch Surg 112:1227–1230, 1977

11. Nanni G, Garbini A, Luchetti P, Ronconi P, Castagneto M: Ogilvie's syndrome (acute colonic pseudo-obstruction): Review of the literature (October 1948 to March 1980) and report of four additional cases. Dis Colon Rectum 25:157–166, 1982
12. Nivatvongs S, Vermeulen FD, Fang DT: Colonoscopic decompression of acute pseudo-obstruction of the colon. Ann Surg 196:598–600, 1982
13. Strodel WE, Nostrant TT, Eckhauser FE, Dent TL: Therapeutic and diagnostic colonoscopy in nonobstructive colonic dilatation. Ann Surg 197:416–421, 1983
14. Bode WE, Beart RW: Colonoscopic decompression for acute pseudo-obstruction of the colon. Am J Surg 147:243–245, 1984
15. Nakhgevany KB: Colonic decompression of the colon in patients with Ogilvie's syndrome. Am J Surg 148:317–320, 1984
16. Macrae FA, Tan KG, Williams CB: Towards safer colonoscopy: A report on the complications of 5000 diagnostic or therapeutic colonoscopies. Gut 24:376–383, 1983
17. Wanebo H, Mathewson C, Conolly B: Pseudo-obstruction of the colon. Surg Gynecol Obstet 133:44, 1971