

# Nonoperative Management of Acute Idiopathic Colonic Pseudo-Obstruction (Ogilvie's Syndrome)

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*In a four-year experience (35 episodes in 27 patients) with the use of medical and colonoscopic therapy for acute idiopathic colonic pseudo-obstruction, we have found that initial conservative measures followed by flexible colonoscopy in nonresponders are effective and safe. Contrary to previous reports, an initial nonoperative approach including colonoscopy is frequently successful and the outcome with this approach is not adversely affected even in the few patients who eventually require surgical decompression.*

(Fausel CS, Goff JS: Nonoperative management of acute idiopathic colonic pseudo-obstruction [Ogilvie's syndrome]. *West J Med* 1985 Jul; 143:50-54)

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Acute colonic pseudo-obstruction, first described in 1948 by Ogilvie,<sup>1</sup> is a nonmechanical dilatation of the colon often associated with severe illness or injury. Synonyms for the condition include Ogilvie's syndrome, colonic ileus, large intestinal colic and idiopathic large bowel obstruction. The dilatation involves the cecum and varying lengths of more distal colon. Often a "cutoff" of distention can be identified at the hepatic, splenic or sigmoid flexures. Cecal distention may become extreme (up to 20 cm or more) and result in perforation.

Because patients with acute colonic pseudo-obstruction usually are very ill, noninvasive treatment often is attempted in hopes of avoiding surgical intervention. However, cecal perforation is an understandably feared risk of such a conservative approach, so there are many proponents of emergency operation. This dilemma is intensified by inconsistencies in indications given for operation. There is no agreement on the maximal permissible distention of the cecum, and some<sup>2-4</sup> have advocated doing a surgical procedure immediately, whereas others<sup>5,6</sup> prefer a trial of conservative therapy first. In addition, it is important to differentiate true colonic obstruction from pseudo-obstruction although guidelines for surgical intervention in cases of true obstruction are also not well defined. A water-soluble contrast barium enema is probably the quickest and safest way to distinguish between true obstruction and pseudo-obstruction, though this can also be accomplished with colonoscopy.

As an alternative to operative decompression, Kukora and Dent<sup>7</sup> used colonoscopy with a flexible instrument. Since that small series (five patients) was reported in 1977, other reports have appeared, but only two are larger.<sup>8,9</sup>

In an effort to more precisely define the clinical course of acute colonic pseudo-obstruction and the response to and indications for various kinds of therapy (colonoscopic decompression in particular), we have reviewed our experience of four years.

### Patients and Methods

We have reviewed the courses of all patients referred to the Gastroenterology Service with possible acute colonic pseudo-obstruction and those of all other patients with that diagnosis in our institutions (University of Colorado Hospital and Denver Veterans Administration Medical Center [VAMC] from January 1, 1979, through December 31, 1982. Acute colonic pseudo-obstruction was diagnosed if the cecum was acutely dilated to more than 9 cm with or without varying degrees of small bowel dilatation on plain roentgenograms of the abdomen. Cases of true mechanical obstruction (luminal compromise by intrinsic lesions or by extrinsic compression) or toxic megacolon (colonic dilatation due to inflammatory disease) were excluded in all patients either by colonoscopic examination, contrast radiography or by clinical presentation and subsequent course. No patients had the syndrome of chronic idiopathic intestinal pseudo-obstruction.

Retrospectively, three levels of treatment were defined: level 1—nasogastric suction, rectal tube, enemas, correcting electrolyte disturbances and withdrawing narcotic therapy; level 2—level 1 plus colonoscopic decompression; level 3—operative decompression.

All patients were treated with some level 1 modalities (see Table 1) for varying periods of time before referral to the Gastroenterology Service. Patients in whom the cecal diam-

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OGILVIE'S SYNDROME

TABLE 1.—Patient Profile, Management and Outcome in 27 Patients (35 Episodes) With Acute Ogilvie's Syndrome

Patient	Age (yr)	Sex	Maximal Cecal Diameter (cm)	Diagnoses	Narcotic Treatment	Therapy					Cecal Size After Colonoscopy (cm)	Outcome
						Nasogastric Tube	Rectal Tube	Enemas	Colonoscopy	Surgery		
1	68	♂	13	Retropéritoneal hematoma, renal failure	Yes	Yes	Yes	Sodium phosphate-biphosphate (Fleet's Phospho-Soda)	No	No		Resolved in 3 days
2	23	♀	13	Cesarean section	Yes	Yes	Yes	No	No	No		Resolved in 2 days
3	75	♂	14	Prostate cancer	Yes	Yes	Yes	Soap suds ×3	No	Cecostomy		Resolved
4	48	♂	13	Multiple sclerosis	Yes	Yes	Yes	Fleet's ×2	No	No		Resolved
4*	48	♂	11	Recurrence in 2 days	No	Yes	Yes	Tap water	No	No		Resolved
5	60	♀	9.5	Hip fracture	Yes	Yes	No	No	No	No		Resolved
6	62	♀	14	Diabetic ketoacidosis, hypocalcemia	No	Yes	No	No	No	No		Resolved
7	60	♀	14	Cerebellar tumor	Yes	Yes	Yes	Meglumine diatrizoate (Gastrografin)	No	No		Resolved in 2 days
8	70	♂	11	Appendectomy, myocardial infarction	Yes	Yes	Yes	No	No	No		Resolved in 3 days
9	60	♂	12	Colchicine toxicity	No	Yes	No	No	Refused	No		Resolved in 5 days
10	78	♀	11	Hip fracture	Yes	Yes	No	No	No	No		Resolved in 2 days
11	67	♀	17	Lung cancer, mechanical ventilation	No	Yes	No	No	Not offered	Not offered		Perforation, death
12	56	♂	12	Leg fracture	Yes	Yes	Yes	No	No	No		Improved
12*	56	♂	14	Recurrence in 3 days	No	Yes	Yes	No	Yes	No	9	Resolved
13	46	♀	15	Hysterectomy, retroperitoneal hematoma	No	Yes	No	No	Yes	No		Resolved
14	61	♂	12	Metastatic cancer	Yes	Yes	No	No	Yes	No		Resolved, died of cancer
15	64	♂	12	Renal failure, mechanical ventilation	Yes	Yes	Yes	No	No	No		Improved
15*	64	♂	12	Recurrence in 2 days	No	No	No	No	Yes	No		Resolved
16	68	♂	12	Leg fracture	Yes	Yes	Yes	Tap water	Yes	No		Resolved
17	67	♂	12	Leukemia, prostate operation	No	Yes	Yes	No	Yes	Laparotomy		Colonoscopy failed, ischemic small bowel
18	69	♂	14	Lymphoma, mechanical ventilation	Yes	Yes	No	No	Yes	No		Resolved, died of sepsis
19	60	♂	12	Hip fracture	Yes	Yes	No	No	Yes	No	9	Improved
19*	60	♂	13	Recurrence in 1 day	No	Yes	No	No	Yes	No	9	Improved
19*	60	♂	12	Recurrence in 1 day	No	Yes	No	No	No	Cecostomy		Resolved
20	63	♂	12	Hypokalemia, hyponatremia	Yes	Yes	Yes	No	Yes	No	8	Resolved
21	73	♂	12	Lung cancer, sepsis	No	Yes	Yes	Tap water, Fleet's ×4	Yes	No		Resolved
22	61	♀	14	Metastatic cancer	Yes	Yes	Yes	No	Yes	No	7	Resolved
23	78	♂	14	Renal failure, mechanical ventilation	Yes	Yes	No	No	Yes	No	10	Improved
23*	78	♂	13	Recurrence in 2 days	No	Yes	No	No	Yes	No	6	Resolved, died of renal failure
24	67	♂	15	Leukemia, sepsis, mechanical ventilation, hyponatremia	No	Yes	No	No	Yes	No	8	Resolved, died of sepsis
25	57	♂	15	Renal failure, mechanical ventilation	No	Yes	No	No	Yes	No	8	Resolved, died of renal failure
26	80	♂	12	Leg fracture, renal failure	Yes	Yes	Yes	No	Yes	No	9	Improved
26*	80	♂	12	Recurrence in 1 day	No	Yes	No	No	Yes	Cecostomy		Colonoscopy failed, died of renal failure
27	76	♂	12	Stroke, sepsis, mechanical ventilation, renal failure	No	Yes	Yes	No	No	Laparotomy		No abnormalities at operation
27*	76	♂	12	Recurrence in 1 day	Yes	Yes	No	No	Yes	No	9	Resolved, died of renal failure

\*Same patient with recurrence.

eter equaled or exceeded 12 cm despite level 1 measures were deemed treatment failures and immediately had colonoscopic decompression with an Olympus TCF-2L flexible colonoscope. No specific bowel preparation preceded the procedure. An attempt was made to insufflate the smallest amount of air possible to visualize the lumen in the distal colon. When the ascending colon was reached, the colonoscope was slowly withdrawn while keeping the scope in the center of the lumen and using suction to remove the air and fluid contents. Colonoscopic success was defined as a decrease in the abdominal distention and a decrease in cecal diameter of more than 3 cm, as documented by a postprocedure plain roentgenogram of the abdomen. Eight cases (patients 1 to 8 in Table 1) were not referred to the Gastroenterology Service but were found by chart review. Review of these cases was felt to be important so as to better assess the natural history of conservatively treated acute colonic pseudo-obstruction uninterrupted by colonoscopic intervention at a predetermined cecal diameter.

## Results

### *Patient Profile*

There were 27 patients—20 men and 7 women—with 35 individual episodes of acute colonic pseudo-obstruction. The male predominance probably reflects the fact that most of the patients were seen at the Denver VAMC. Patients' ages ranged from 23 to 80 years (mean, 61 years). All patients had severe associated illnesses including cancer (nine), metabolic abnormalities (seven), respiratory failure requiring mechanical ventilation (seven), nongastrointestinal infections (eight), fractures (six) and drug toxicity (four).

### *Symptoms, Signs and Laboratory Tests*

The most common presenting symptom of acute colonic pseudo-obstruction was abdominal distention. The rapidity of onset of distention was variable, but no patient had a fulminant course (a few hours from onset to perforation) or perforation unaccompanied by recognized distention. Most patients had mild to moderate discomfort, but a few complained of more severe, crampy abdominal pain; most had constipation, although a small number presented initially with watery stools and continued to pass small amounts of flatus. Some patients had nausea but none vomited.

Physical examination in all cases showed massive abdominal distention. Usually there was mild to moderate tenderness and peritoneal signs were rare in uncomplicated cases; in one patient with ischemic small bowel and in one with cecal perforation, severe abdominal tenderness and signs of diffuse peritoneal irritation subsequently developed. Bowel sounds were variably diminished, normal or high pitched. Fifteen patients (56%) had low-grade fever that appeared to be temporally correlated with the presence of acute colonic pseudo-obstruction rather than the associated illness.

Laboratory tests were not helpful in making the diagnosis, although metabolic abnormalities often were present. Leukocytosis was frequently present but was not specific for acute colonic pseudo-obstruction.

### *Radiographic Studies*

In all cases, the diagnosis was suggested by the finding of colonic distention on radiologic examination of the abdomen (Figure 1). Cecal diameters ranged from 9 to 17 cm, with the

majority (26 cases) measuring from 12 to 14 cm. Other diagnoses considered in all cases included true colonic obstruction, ischemic colitis and toxic megacolon. Free intraperitoneal air was not found on any initial film and was detected only once on subsequent examination in a patient with terminal metastatic carcinoma whose initial cecal diameter was 17 cm (patient 11). Many patients had a relative "cutoff" of colonic air at the hepatic, splenic or sigmoid flexures, although some distal air was almost always present.

## Outcome of Therapy

All 35 episodes were initially managed for variable periods with level 1 treatment. Twelve episodes responded to level 1 treatment but there were three recurrences (see Table 1). One recurrence was successfully managed with level 1 treatment while the other two were treated successfully with colonoscopy (level 2). One other patient received level 1 therapy that was unsuccessful. This patient's cecum measured 17 cm at diagnosis and eventually perforated. No level 2 or 3 therapy was attempted because of the patient's terminal state from lung cancer.

Nine patients were successfully treated with colonoscopy when their cecal diameters equaled or exceeded 12 cm and had not responded to level 1 therapy during the first episode. In three patients colonoscopy was initially successful but recurrences developed. One patient (23) had a permanent resolution after a second colonoscopic decompression. Patient 26 had a second colonoscopy that was unsuccessful because of a large amount of sigmoid feces. During surgical intervention, splitting of the teniae coli was noted and a cecostomy was done. The third patient (19) had a second successful decompression, but was taken to surgery after a third recurrence one day later. During the operation, he was found to have splitting of the teniae coli and a localized area of necrosis with perforation of the cecum. A cecostomy was successfully carried out. One colonoscopic decompression was done after patient 27 had a recurrence one day after a laparotomy for cecal dilatation (no cecostomy was done). The colon remained decompressed after the colonoscopy until the patient died many days later of renal failure.

We found that gross decompression of abdominal distention could not be achieved until the colonoscope was passed beyond the hepatic flexure. Once the cecum was reached, a visible decrease in the abdominal girth would occur quickly when suction was applied through the colonoscope.

Five patients eventually had a cecostomy, all of which were considered successful in achieving colonic decompression. One was carried out in a patient (19) in whom colonoscopic decompression was initially successful but who had a recurrence. Two were done after unsuccessful attempts at decompression (one in a patient [26] with a recurrence) and the other two were performed after a brief attempt at level 1 therapy without considering colonoscopy.

There were no complications from the 19 colonoscopies. Only one patient (11) died in whom colonic pseudo-obstruction was considered a major contributing factor. The overall mortality rate from all causes in the series was 30%.

## Discussion

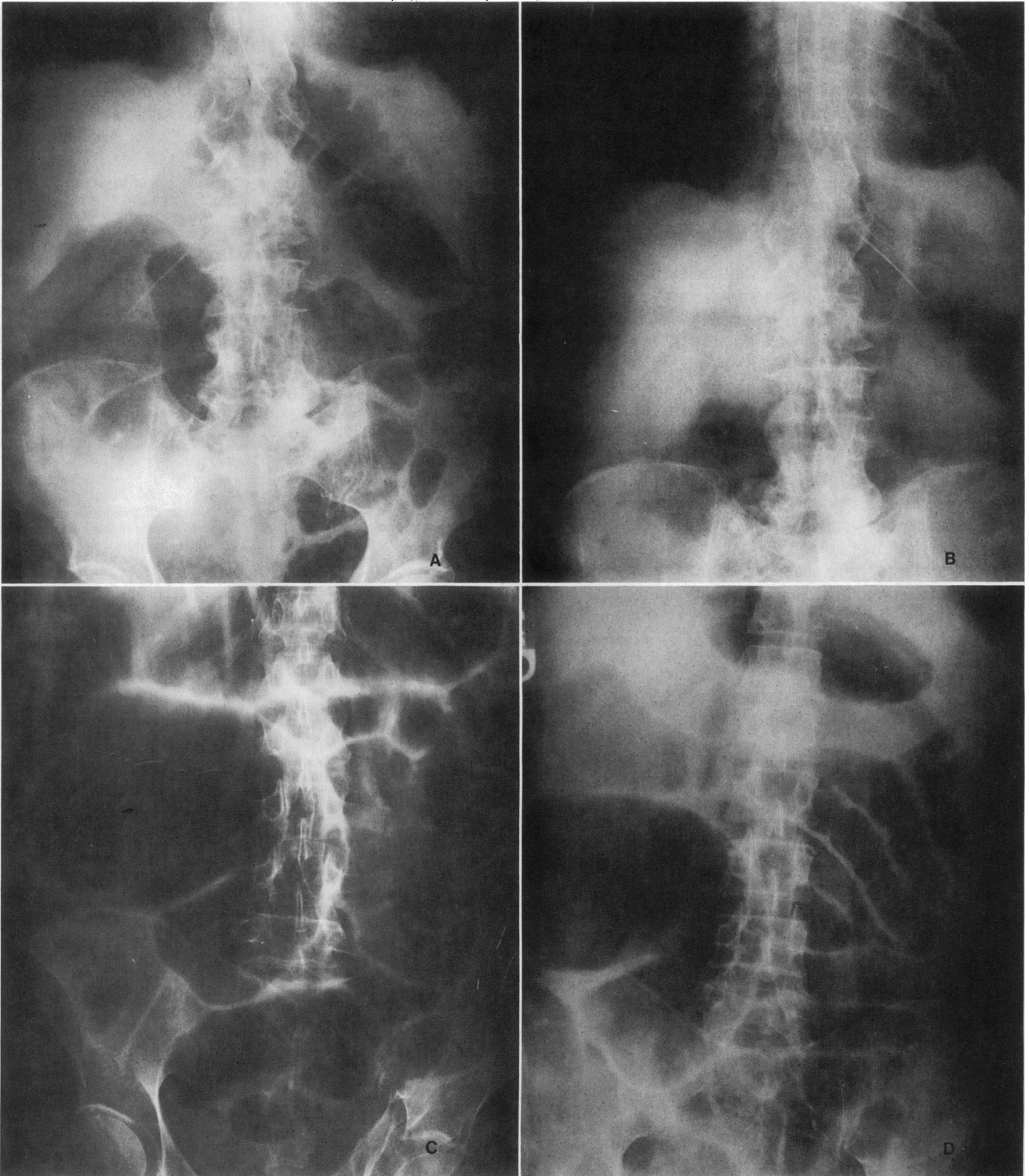
Acute colonic pseudo-obstruction has been considered a rare syndrome, but we found 27 patients with this condition in

four years at our two institutions. The condition also has been considered life-threatening, often requiring surgical intervention. In our experience, though, initial conservative therapy seemed to be effective or was unassociated with an adverse outcome. Moreover, the mortality rate attributable to pseudo-obstruction per se was low.

The major concern in acute colonic pseudo-obstruction is

cecal perforation, but this concern must be balanced by the high risk of cecostomy in an ill patient with an unprepared bowel. This risk naturally has led to considering colonoscopic decompression as an alternative form of treatment. From our experience with colonoscopy in this series, we conclude the following:

- Colonoscopic decompression can be accomplished in



**Figure 1.**—Representative abdominal roentgenograms of two patients before (A and C) and immediately after (B and D) successful colonoscopic decompression.

most cases of acute idiopathic colonic pseudo-obstruction with only moderate difficulty despite no cleansing of the colon.

- The procedure, if carefully carried out, is not hazardous.

- Contrary to other reports,<sup>8,9</sup> effective decompression of the colon often required passage of the colonoscope into the ascending colon.

- The use of colonoscopy may avoid an operation in patients with massively dilated cecums and thus reduce the mortality rate.

- In addition to achieving colonic decompression, full colonoscopy can make a diagnosis of acute colonic pseudo-obstruction definitive by excluding true obstructing lesions or mucosal lesions such as ischemia.

The issue of the maximal size of the cecum that should be permitted before intervening with colonoscopy is difficult to resolve. Various authors have recommended some form of intervention when the cecum reaches 9 cm,<sup>2,7,10,11</sup> 10 cm<sup>12</sup> or 12 cm<sup>3-5</sup> in diameter, but the basis for these recommendations is arbitrary. Only 42 cases of perforation due to acute colonic pseudo-obstruction have been reported in the English language literature.<sup>11</sup> Only four reports actually record a cecal diameter before perforation (20 cm, 16 cm, 15 cm, 14 cm). Others have reported smaller cecal size at the time of the diagnosis of perforation. Because perforation can effect significant decompression, we doubt the applicability of reports of cecal size measured at the time perforation is diagnosed. Furthermore, we have found that most patients with typical, uncomplicated, acute colonic pseudo-obstruction can tolerate a cecal diameter of 14 cm, at least temporarily. Obviously, it is better not to allow this degree of colonic distention to develop or to persist for prolonged periods, as local perforation of the cecum occurred in one of our patients whose cecum had reached 12 cm in diameter.

It is unlikely that a randomized trial of various forms of

treatment in cases of acute idiopathic colonic pseudo-obstruction will ever be done. Therefore, on the basis of our experience, we make the following recommendations for treatment of this condition: A trial of conservative measures—nasogastric suction, rectal tube, correction of metabolic abnormalities or discontinuation of medications that might interfere with bowel motility—is in order initially. If this approach is unsuccessful as assessed by abdominal films every 6 to 12 hours that show an increasing cecal diameter, or if the cecal diameter has reached 12 cm or more at the time of diagnosis, colonoscopy to decompress the colon should be done. Colonoscopy may have to be repeated in a select number of cases. A cecostomy should be done only if signs of possible perforation of the cecum—high fever, severe abdominal tenderness, referred rebound tenderness or loss of liver dullness—are present before colonoscopy can be done or if conservative therapy and colonoscopy are unsuccessful.

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