

# Colonoscopic Decompression of Acute Pseudo-obstruction of the Colon

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The recent advances in technology have made it possible to decompress acute pseudo-obstruction of the colon with colonoscopy instead of celiotomy and cecostomy. Twenty-two patients who developed acute pseudo-obstruction of the colon and underwent colonoscopy were analyzed. The authors were successful in completely or partially decompressing the dilated colon in 19 of 22 patients. There were no complications. Acute pseudo-obstruction of the colon is usually secondary to intra- or extra-abdominal insult resulting in direct or reflex derangement of the sacral parasympathetic outflow. This causes a functional obstruction of the left colon. The goal of management is to prevent colonic perforation while treating the primary problems. Once the diagnosis has been made, colonoscopy should be attempted. Celiotomy should be reserved to cases in which colonoscopy is unsuccessful or in cases with perforation or impending perforation.

ACUTE PSEUDO-OBSTRUCTION of the colon is a condition in which the colon becomes massively dilated without apparent mechanical obstruction. The condition is secondary to intra- or extra-abdominal insult which causes a direct or a reflex disturbance of colonic motility, usually of the left colon. Untreated, the colon may eventually perforate resulting in high morbidity and mortality.<sup>1,2</sup> In the past, when dilatation of the colon had reached a dangerous size, cecostomy was the treatment of choice, but the morbidity was high.<sup>3,4</sup> In 1977 Kukura and Dent<sup>5</sup> introduced the use of colonoscopy to decompress the dilatation. This study analyzes the experience of 22 patients with acute pseudo-obstruction of the colon who underwent colonoscopy.

## Materials and Methods

From January 1978 to January 1982, 22 patients who developed acute dilatation of the large bowel were consulted for colonoscopic decompression (Table 1). There were 15 men and seven women with an average age of 56 years (range: 30–82). In 20 patients the dilatation was in the right and transverse colon, in one the dilatation was in the right, transverse, and descending colon, and

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in one the dilatation was in the right colon only. Colonoscopy was performed at bedside in 14 patients, seven in the colonoscopy room, and one in the operating room. None of the patients received any laxatives or enemas prior to the procedure. Only two patients required diazepam intravenous injection during the procedure.

## Results

The precipitating causes of acute pseudo-obstruction of the colon and the results of colonoscopic decompression are listed in Table 1. The dilated colon was successfully decompressed in 19 of 22 patients. The colonoscope was passed to the cecum in eight patients. In 11 patients, the scope was passed to the transverse colon or hepatic flexure; nevertheless, the dilated right colon could be completely or partially decompressed. Four patients developed recurrences requiring repeated colonoscopic decompression; two eventually required operative decompression. Of the three cases in which colonoscopy was unsuccessful, one had too much stool, one had a fixed colon from extensive intra-abdominal metastasis, and one had gangrene of the large bowel.

## Discussion

Numerous terms have been used in acute pseudo-obstruction of the colon: Ogilvie's syndrome, false colonic obstruction, pseudo-megacolon, pseudo-obstruction of the colon, paralytic ileus of the colon, adult megacolon without obstruction, adynamic ileus of the colon, functional obstruction of the colon, idiopathic large bowel obstruction, and hypokalemic ileus of the colon.<sup>6</sup> This plethora of terms attests to the uncertainty of the etiology. Basically, the sympathetic nerve of the colon inhibits colonic motility, whereas the parasympathetic nerve stimulates it. From this standpoint, it is difficult

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Submitted for publication: March 8, 1982.

TABLE 1. *Clinical Data and Results of Colonoscopic Decompression*

No.	Sex	Age	Precipitating Causes	Maximal Dilatation (cm)	Level of Colonoscope	Outcome
1	M	76	7 days after small bowel resection; on incentive spirometer	10 cecum	Trans colon	Resolved
2	M	69	5 days after aortic valve replacement; on incentive spirometer	11 cecum	Unsuccessful	Cecostomy
3	F	34	1 month after pancreatic transplant	9 trans colon	Trans colon	Resolved
4	M	68	3 days after suprapubic prostatectomy	16 cecum	Trans colon	Resolved
5	F	65	Infected pelvic hematoma from cystectomy and ileal conduit	8 trans colon	Trans colon	Resolved
6	M	38	Severe pneumonitis, respiratory failure; on respirator	12 cecum	Cecum	Resolved
7	F	57	Carcinoma of ovary with metastasis and ascites	11 cecum	Unsuccessful	Spontaneously Resolved
8	M	41	4 days after splenectomy; on incentive spirometer	14 cecum	Trans colon	Resolved
9	F	69	7 days after large bowel resection for colovaginal fistula	9 cecum	Trans colon	Resolved
10	M	62	Distension occurred during chemotherapy for lymphoma	13 cecum	Trans colon	Resolved
11	M	64	2 weeks after reexploration for postoperative bleeding secondary to retroperitoneal prostatectomy; sepsis; respiratory failure; on respirator	14 cecum	Trans colon	Recurred; colonoscopy repeated 3 times; finally required a transverse colostomy
12	M	59	7 days after hip fracture from a fall	11 cecum	Cecum	Resolved
13	M	69	2 days after ilioinguinal node dissection	10.5 cecum	Cecum	Recurred and repeated once
14	F	23	12 days after cesarian section	15 cecum	Unsuccessful	Celiotomy; resection of gangrenous colon; ileostomy
15	M	30	10 days after pancreatic transplant	10 trans colon	Cecum	Resolved
16	M	30	4 days after kidney transplant; urinary leakage	9.5 trans colon	Hepatic fixture	Recurred; celiotomy and intraoperative decompression
17	F	33	Kidney transplant; sepsis	7.5 trans colon	Cecum	Recurred but spontaneously resolved
18	M	66	14 days after rectal anastomosis with subclinical leak	9 trans colon	Cecum	Resolved
19	M	71	Prostatism; chronic pulmonary insufficiency; on continuous oxygen mask	18 cecum	Cecum	Resolved
20	M	82	2 days after transurethral resection of bladder tumor	13.5 cecum	Cecum	Resolved
21	F	78	4 days after per vaginal biopsy of pelvic tumor	10.5 cecum	Trans colon	Resolved
22	F	51	1 week after Marshall-Machetti procedure	14 cecum	Trans colon	Resolved

to accept Ogilvie's original assumption that loss of proximal sympathetic tone was responsible for colonic dilatation. The authors agree with Bachulis et al.<sup>7</sup> and Spira et al.<sup>8</sup> that the pathophysiology of acute pseudo-obstruction of the colon is more likely sacral parasympathetic derangement. Similar to Hirschsprung's disease, the dilated part of the colon is normal and the collapsed

part of the colon causes a functional obstruction. The authors use the term acute pseudo-obstruction to avoid confusion with chronic intestinal pseudo-obstruction which is an entirely different entity.<sup>9,10</sup>

As shown in Table 1, the primary causes of acute pseudo-obstruction of the colon in this series ranged from acute pneumonitis to intra-abdominal sepsis to hip

fracture. This is in agreement with the reports in the literature.<sup>6-8,11-13</sup> The diagnosis can usually be made by abdominal radiographs that show marked distension of the large bowel with variable amount of air in the small bowel. Occasionally, a gastrograffin enema is necessary to rule out colonic volvulus and other causes of mechanical obstruction. Typically, the "cutoff" of colonic gas (transition between dilated and collapsed colon) is near the splenic flexure, which accounts for 20 of 22 cases in this series.

The bowel distension in acute pseudo-obstruction of the colon is from swallowed air. The first step in management is to stop oral intake and to continuously decompress the stomach with nasogastric tube. Procedures that promote an increase in air-swallowing such as incentive spirometer or unnecessary oxygen mask should be discontinued. Acute pseudo-obstruction of the colon is self-limiting. The goal of management is to prevent colonic perforation while treating the primary problems. After successful decompression, a close follow-up with physical examination and daily abdominal radiographs is necessary until the patients can pass gas per rectum spontaneously. In the authors' experience, most patients spontaneously passed gas per rectum one to two days after the decompression. Recurrence tends to occur in cases in which the small bowel is also dilated with air. This can be explained by the current belief that the cause of acute colonic pseudo-obstruction is the disturbance in motility of the left colon.<sup>7,8</sup> The air in the small bowel can then move into the normal functioning right and transverse colon. When colonoscopic decompression is unsuccessful, a celiotomy should be done when the cecum has reached the critical size of 12 cm<sup>3,4,7</sup> or when there are signs and symptoms of perforation or impending perforation. A cecostomy is the procedure of choice to decompress the bowel. In cases in which perforation has occurred or the colon has become ischemic, resection should be done.

Colonoscopic decompression of acute pseudo-ob-

struction has proved to be safe and has a high rate of success. The procedure is somewhat more difficult than ordinary elective cases because usually the bowel is not as clean. As a rule, the lumen of the left colon collapses, requiring considerable amount of air insufflation to advance the colonoscope. There have been no complications in this series. One should no longer wait until the colon has dilated to the dangerous size. Once the diagnosis is made, colonoscopy should be attempted. However, it should be performed with caution. Unless the procedure is easy, it is not necessary to pass the scope into the cecum since the transverse and the right colon can be adequately decompressed with the colonoscope in the transverse colon. If bowel perforation or necrosis has occurred, colonoscopy is contraindicated.

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