

Ischemic colitis during asthma attack

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Ischemic colitis is a well-defined clinical, radiologic, and pathologic entity. The diagnosis of ischemic colitis is greatly aided by a high degree of suspicion of a possible vascular origin in older patients, particularly in those with congestive heart failure, myocardial infarction, hemorrhage, sepsis, cardiac arrhythmias, dehydration, significant valvular disease, or administration of vasoconstrictive agents.¹ A few cases have been reported of apparent ischemic colitis in young patients, some of them while taking contraceptive pills.² We describe 2 cases of younger women with ischemic colitis during asthma attack whose hemodynamics were stable throughout the clinical course.

CASE REPORTS

Patient 1

A 42-year-old woman was admitted to a local hospital with an acute exacerbation of asthma on November 5, 1996. On admission, widespread polyphonic wheezes were audible. Admission blood gas analysis showed slight hypercapnia (PaCO_2 , 47 mmHg) and acidemia (pH, 7.30) and moderate hypoxemia (PaO_2 , 59 mmHg). In spite of treatment with 30% oxygen administered through a face-mask, nebulized salbutamol, theophylline infusion, and dexamethasone, her condition rapidly deteriorated. She was intubated, and artificial ventilation was started. On the seventh day after admission, sedation was stopped, and she was weaned from mechanical ventilation. However, she had sudden, severe, colicky pain the left side of her abdomen and bloody diarrhea soon after weaning. She was admitted to Tohoku University Hospital.

The patient's temperature was 37.8° C, and her pulse rate was regular. Her blood pressure was 126/76 mmHg. The left side of the abdomen was tender, but there was no palpable mass or sign of peritonitis. Peripheral white blood cell count was $19.3 \times 10^9/\text{L}$, with 94% neutrophils. Other hematologic and blood chemical values were normal, as were the values for prothrombin and partial-thromboplastin times. There was no glycosuria, and no pathogens were

isolated from stools or urine. Sigmoidoscopy showed edematous and granular mucosa and stenotic lumen with a longitudinal ulcer above the rectosigmoid junction. The rectum had a normal mucosa

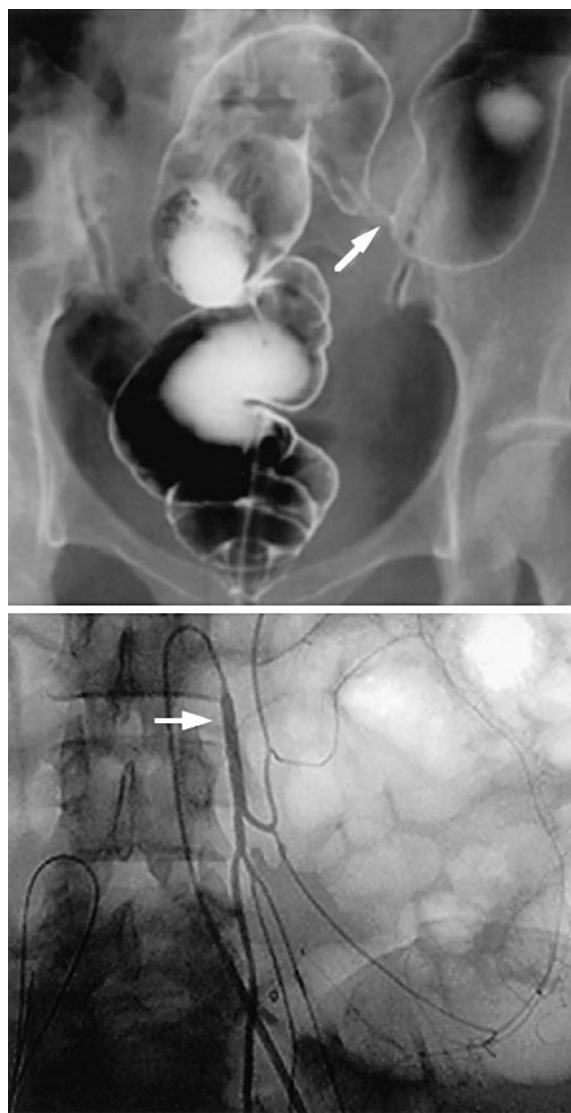


FIG 1. Barium enema study (*top*) and inferior mesenteric artery angiography (*bottom*) in patient 1. Barium enema film shows narrowing of the sigmoid colon (*arrow*). Angiography shows normal origin of the inferior mesenteric artery (*arrow*).

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and vascular pattern. Multiple biopsy specimens were obtained, and microscopic examination of the biopsy specimens revealed edematous colonic mucosa with the ulcer. Repeated barium enema examinations consistently showed a narrowed segment of the sigmoid colon (Fig 1, *top*). An angiogram performed in the prone position showed normal origins of the coeliac axis and the superior and inferior mesenteric arteries (Fig 1, *bottom*). No abnormality of the distal branches or of the marginal artery was seen. The affected colon was resected surgically on March 3, 1997. A review of sections of the rejected specimen showed the mucosal ulcer and submucosal edema with infiltration of lymphocytes and plasma cells, which is consistent with ischemic colitis. Her asthma was well controlled, and she had no recurrence of abdominal symptoms thereafter.

Patient 2

A 31-year-old woman who had asthma since childhood was admitted to the hospital on March 21, 1997. She felt slight chest tightness with wheeze followed by pain the left lower side of the abdomen and bloody diarrhea. Widespread polyphonic wheezes were audible. Blood gas analysis showed slight hypoxemia (PaO_2 , 72 mmHg) and normal PaCO_2 (41 mmHg). Her pulse rate was regular, and her blood pressure was 112/68 mmHg. Sigmoidoscopy showed edematous mucosa with a longitudinal ulcer in the distal portion of the descending colon. The biopsy specimens from the affected colon showed mucosal edema with mononuclear cell infiltration compatible with ischemic colitis. Other diseases, such as ulcerative colitis, Crohn's Disease, and bacterial colitis, were ruled out according to the clinical and histopathologic examinations. The abdominal pain and tenderness settled within 2 days without specific treatment.

DISCUSSION

The clinical course and the radiologic and histologic features in these 2 patients were typical of ischemic colitis. However, there was no clinical or chemical evidence of heart disease, arteriosclerosis, or portal hypertension as a cause of embolic or thrombotic occlusions. Widespread vascular disease, such as polyarteritis, migratory

thrombophlebitis, collagen disease, and other vasculitides were unlikely on the basis of clinical and laboratory data. Intraabdominal sepsis and the vascular occlusion that may follow abdominal operations⁴ were excluded with certainty. Finally, the patients' hemodynamic state was stable, and they never received drugs⁵ that may cause ischemic colitis, such as digitalis, vasopressin, nor-epinephrine, contraceptives, or a cleansing enema throughout the clinical course. However, in a significant number of cases, no recognizable cause is detected, and our patients may merely belong to this group.⁴

Except for the asthma attack, the lesions of the colon were not associated with factors known to result in vascular injury in these cases. Although it is uncertain whether asthma attack is really a factor in ischemic colitis, platelet-activating factor and cytokines that are released during asthma attack may be involved in the pathogenesis of inflammatory bowel disease, including ischemic colitis.⁶ This is the first report of ischemic colitis during asthma attack. Physicians should keep this association in mind.

REFERENCES

1. Bynum TE, Jacobson ED. Vascular disorder of the large bowel. In: Kirsner JB, Shorter RG, editor. *Disease of the colon, rectum, and anal canal*. Rochester: Mayo Foundation; 1988. p 537-48.
2. Cotton PB, Thomas ML. Ischemic colitis and the contraceptive pill. *Br Med J* 1971;3:27-8.
3. DeMuth WE, Fitts WT, Patterson LT. Collective review: mesenteric vascular occlusion. *Int Abstr Surg* 1959;108:209-23.
4. Longo WE, Ballantyne GH, Gusberg RJ. Ischemic colitis: patterns and prognosis. *Dis Colon Rectum* 1992;35:726-30.
5. Banks RO, Gallavan RH, Zinner MJ, Bulkley GB, Harper SL, Granger DN, et al. Vasoactive agents in control of the mesenteric circulation. *Fed Proc* 1985;44:2743-9.
6. Nassif A, Longo WE, Mazuski JE, Vernava AM, Kaminski DL. Role of cytokines and platelet-activating factor in inflammatory bowel disease. Implications for therapy. *Dis Colon Rectum* 1996;39:217-23.