Acute diverticulitis of the cecum

CHARLES D. COFFMAN, D.O.
Springfield, Pennsylvania

Unlike diverticula of other parts of the colon, diverticulum of the cecum usually is single. Diverticulitis of the cecum is rare and often is misdiagnosed as acute appendicitis, with discovery of its true nature only at laparotomy. Since cancer of the cecum and terminal ileitis also are possibilities, right hemicolectomy may be advisable. In some cases, however, simple inversion or excision of the lesion may be adequate treatment.

Inflammatory disease of a diverticulum of the cecum is a rare condition, to be differentiated from acute appendicitis. The surgical literature contains few articles on this subject, and textbooks usually mention it only in passing.

I shall present an illustrative case and summarize current knowledge of this disease.

The pathologic anatomy of diverticula of the cecum is not the same as that of diverticula of the rest of the colon. A diverticulum of the cecum is usually solitary, while there characteristically are multiple diverticula in other locations in the colon. Both longitudinal and circular muscle layers can be involved in disease of the cecum, but muscle layers are not affected in diverticula of the rest of the colon. Diverticula may occur in all locations of the colon, but I wish to limit my discussion to solitary diverticula of the cecum. Involvement of muscle layers in the cecum is suggestive of a congenital origin of this condition.

The pathologic process which takes place in this condition begins with stasis, which leads to inflammation and infection, which in turn leads to necrosis and perforation. The signs and symptoms closely resemble those of acute appendicitis, for obvious reasons.

The diverticulum is usually located on the medial wall of the cecum close to the junction of the ileum and the cecum. It often contains a fecalith. This probably provides the mechanism of excitation of the inflammatory process.

Simple solitary ulcers of the cecum are probably another manifestation of this disease and may be a source of hemorrhage of the right side of the colon. The condition seems to affect patients less than 40 years of age as a rule, and there seems to be no predilection with regard to sex.

Prior to operation, the diagnosis is usually acute appendicitis, and the true nature of the disease process is not appreciated until laparotomy is undertaken. This condition usually is suspected only when there is a history of previous appendectomy, when the surgeon has had experience with this condition, or when a barium enema suggests it.

At operation, the surgeon often elects to perform a right hemicolectomy because of difficulties in distinguishing the disease from carcinoma of the cecum, appendiceal abscess, terminal ileitis, or other rare conditions. If it is possible to palpate the ostium of the diverticulum through the opposite wall or if visualization is adequate for a diagnosis, simple inversion (especially if the problem is encountered during another operation) or limited excision of the lesion is adequate if this is technically feasible. Resection of the bowel is necessary only when the lesion is extensive and difficult to deal with.

The following case is illustrative.

Report of case
A 37-year-old man was admitted to the surgical service on February 1, 1982, with a preoperative diagnosis of acute appendicitis. The patient gave a history of pain in the right lower quadrant of the abdomen for 4 days. Pain had begun in the periumbilical area and migrated to the lower right quadrant. The patient had not experienced nausea or vomiting, but had mild anorexia only. The pain had increased in intensity over the few days prior to admission. The past medical history included insulin-dependent diabetes and angina pectoris.

Physical examination showed him to be suffering acute abdominal pain. His temperature was 98.8 F., the pulse rate 80, the respiratory rate 18, and the blood pressure 130/70 mm Hg. There was pain at McBurney's point, with rebound tenderness. No discrete mass was palpated, and neither Lloyd's sign nor Murphy's sign was present. There was no hernia or surgical scar. There was a positive psoas sign on the right. Rectal examination showed no masses; the stool was brown, and sphinc-
ter tone was normal.

The impression at the time of admission was of acute appendicitis (questionably retrocecal), with gallbladder disease to be ruled out.

The complete blood count at admission showed 15,400 leukocytes and 4,570,000 erythrocytes per cubic millimeter. The differential count showed 86 percent segmented cells, 9 percent band forms, 3 percent lymphocytes, and 2 percent monocytes. The hemoglobin content was 12.8 grams/100 ml. and the hematocrit 38.9 percent. Urinalysis showed from 20 to 30 leukocytes and from 1 to 4 erythrocytes per high-power field. X-ray study of the chest and abdomen showed nothing remarkable, and a sonogram of the gallbladder was normal.

The patient was taken to the operating room for a laparotomy and appendectomy. The abdomen was opened by a right paramedian incision, and a large mass was seen in the area of the cecum, with thickening of the mesentery and inflammatory changes. The appendix was visualized and appeared normal. A presumptive diagnosis of carcinoma of the cecum was made, and right hemicolectomy was decided on. When the colon was mobilized from the lateral peritoneal reflection, a retrocecal abscess cavity was opened. Material for cultures was taken from this area and showed Escherichia coli, Proteus mirabillis, and β-hemolytic streptococci. Right hemicolectomy was accomplished with no further event, and anastomosis was completed with staples. The patient's peritoneal cavity was irrigated copiously with physiologic solution of sodium chloride and Keflin. Two Penrose drains were placed in the operative site and brought out through lateral stab wounds. The abdomen was closed in layers, the skin wound being left open for later closure.

Postoperatively, the patient was treated by routine measures, which included intravenous feeding, nasogastric suction, and antibiotic medication.

The wound was closed secondarily while the patient was still in the hospital, and the patient did well postoperatively. The pathologist's report showed diverticulosis of the cecum and colon, with acute and chronic diverticulitis of the cecum and abscess formation. The appendix and terminal portion of the ileum showed nothing remarkable. The mesenteric lymph nodes showed immunoblastic hyperplasia. The patient was discharged on the eleventh postoperative day.

Comment

The reported case of acute diverticulitis of the cecum was similar to those reported by others. Treatment depends on the extent of the abnormality discovered at surgery and can vary from simple inversion to right hemicolectomy.

Usually, the patient presents with an acute surgical condition of the abdomen, and exploration always is indicated.


Accepted for publication in December 1982. Updating, as necessary, has been done by the author.

Dr. Coffman is a resident in general surgery at Metropolitan Hospital, Springfield Division, Springfield, Pennsylvania. Edward A. Gottfried, D.O., FACOS, is resident trainer.

Dr. Coffman, Metropolitan Hospital, Springfield Division, Sprouil and Thomson Roads, Springfield, Pennsylvania 19064.
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**INDICATIONS**

**Hypertension**

The efficacy of propranolol in the treatment of hypertension; it may be used alone or used in combination with other antihypertensive drugs. Beta blockade may interfere with the glaucoma screening test. Withdrawal of propranolol may be associated with rebound hypertension. Therefore, a gradual withdrawal of propranolol is recommended in patients on chronic therapy. Antihypertensive therapy should be continued at the same time. The added catecholamine-depleting drugs such as guanethidine or reserpine may lead to a return of increased intraocular pressure.

**Hyperthyroidism**

There is no evidence of significant drug-induced toxicity. There were no drug-related deaths or serious adverse effects in over 100 patients on propranolol who had no previous evidence of asthma or who developed asthma on propranolol. In patients with asthma, propranolol may cause bronchospasm.

**Cardiovascular**

Cardiovascular: bradycardia; congestive heart failure; intensification of AV block; angina pectoris, syncope, palpitations, and dyspnea on exertion.

**Central Nervous System**

Lightheadedness; mental depression manifested by insomnia, lethargy, weakness, fatigue, reversible mental depression progressing to catatonia, visual disturbances; hallucinations; an acute reversible syndrome characterized by disorientation for time and place, short-term memory loss, emotional lability, slurred speech, and disorientation.

**Respiratory**

Bronchospasm.

**Gastrointestinal**

Nausea, vomiting, epigastric distress, abdominal cramping, diarrhea, constipation, masticator arterial thrombosis, hemorrhagic colitis.

**Allergic**

Pharyngitis and angioedema, erythematous rash, fever combined with arthralgia, myalgia, conjunctivitis, pruritus.

**Auto-Immune**

Diabetes, glomerulonephritis, amyloidosis, systemic lupus erythematosus.

**Hypersensitivity**

Hypersensitivity reactions to propranolol have been reported, including anaphylaxis, angioedema, and urticaria.

**Hypothyroidism**

In patients with hypothyroidism, propranolol may exacerbate the symptoms of hypothyroidism. Therefore, propranolol should be administered with caution in patients with known hypothyroidism.

**Hypokalemia**

It is possible that propranolol may cause hypokalemia, especially in patients receiving diuretic therapy. Therefore, the potassium level should be monitored in patients on long-term propranolol therapy.

**Hypertension**

In patients with hypertension, propranolol may cause hypotension, especially in patients with impaired renal function.

**Hypertrophic Cardiomyopathy**

Propranolol should be used with caution in patients with hypertrophic cardiomyopathy, as it may exacerbate the symptoms of hypertrophic cardiomyopathy.

**Arrhythmias**

In patients with arrhythmias, propranolol may cause bradycardia, AV block, or asystole. Therefore, propranolol should be administered with caution in patients with known arrhythmias.

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