

A woman with right lower quadrant pain

James D. Collins, MD

This 64 year-old woman came to the medical center outpatient clinic with a 3-month history of right lower quadrant pain unrelated to eating and relieved somewhat by bowel movements. She had experienced no change in bowel or urination habits. She said she had no fever, night sweats, pruritus, or adenopathy. She had been treated for tuberculosis several years earlier and had had a hysterectomy when she was 37. Her allergic history, medications, and family history were unremarkable.

On examination, her vital signs included temperature, 98.2°F; pulse, 82 beats per minute; respiratory rate, 18 breaths per minute; and blood pressure, 135/78 mm Hg. Examination findings of the head and neck, thorax, and extremities were unremarkable. In the abdominal examination, an ill-defined right lower quadrant mass with guarding and rebound tenderness to deep palpation was detected. The patient had no pain on internal rotation of the hips or pain on the right side when pressing on the left (Rovsing's sign). Pertinent laboratory results included a white blood cell count of 3,800/mL and electrolyte levels and urinalysis within normal limits.

Posterior and lateral chest radiographs (not shown) were positive for parenchymal scarring reflecting old granulomatous disease and calcifications consistent with her history of tuberculosis, although coccidioidomycosis was considered. Results of an inferior vena cavogram, intravenous pyelogram, and liver and spleen scans were all normal.

An anteroposterior radiograph of the abdomen displayed concretions (coproliths) in the region of the appendix (Figure 1) and radiolucent filling defects marginating the cecum. Radiographs after a barium

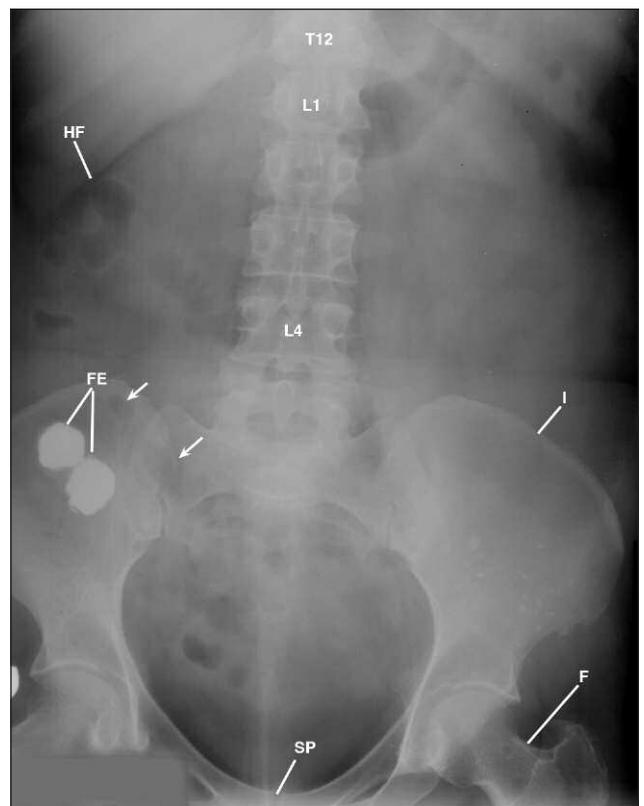


Figure 1 This anteroposterior (AP) supine plain radiograph of the abdomen displays two dense fecaliths (FE) or coproliths over the region of the cecum. No free air is displayed. F = femoral neck; HF = hepatic flexure; I = iliac crest; L1 and L4 = first and fourth lumbar vertebrae; SP = symphysis pubis; T12 = twelfth thoracic vertebra.

enema displayed barium in the cecum and fibrous attachments to the cecal wall that were probably enteroliths (Figure 2, page 00). No abnormality was visible on abdominal ultrasound (not shown).

Exploratory surgery discovered a firm, inspissated, stone-like mass of feces in the cecum, which was excised. Palpation of the cecum revealed a fibrous stricture that admitted one finger (but not two) into the

Dr. Collins is professor, department of radiology, David Geffen School of Medicine at UCLA. Dr. Quan is professor of family medicine, department of family medicine, David Geffen School of Medicine at UCLA. He is also editor in chief of *Family Practice Recertification*.

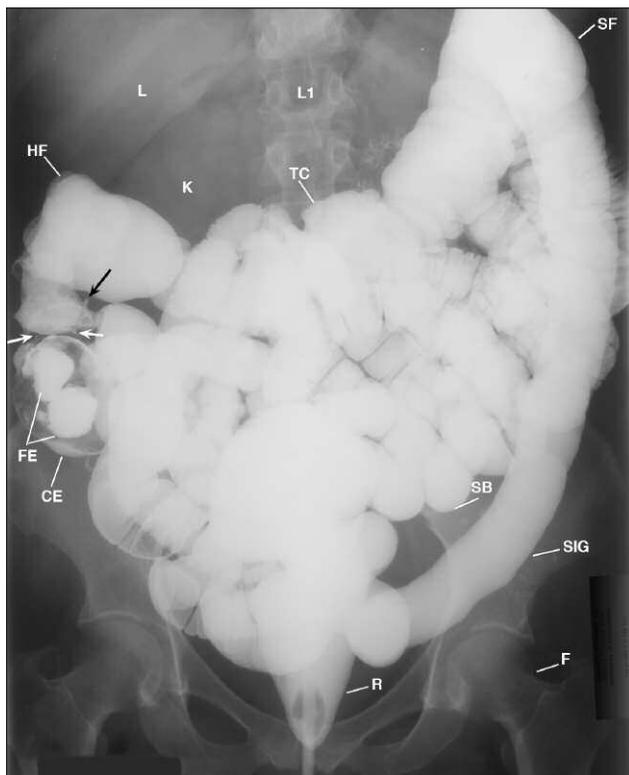


Figure 2 This anteroposterior supine postbarium radiograph of the abdomen displays a small amount of barium in the cecum (CE) enhanced by the lucency of bowel gas marginating a mucosal stricture (white arrows), which is the likely cause of two densely calcified fecaliths (FE). Barium in the small bowel demonstrates a small diverticulum of the terminal ileum (black arrow). F = femur; HF = hepatic flexure; K = kidney; L = liver; L1 = first lumbar vertebra; R = rectum; SB = small bowel; SF = splenic flexure; SIG = sigmoid colon; TC = transverse colon.

upper part of the cecum. This stricture, which prohibited passage of the fecalith, was almost certainly a factor in the inflammatory process. An incision was made through the longitudinal muscle fibers of the colon (anterior taenia coli) to divide the stricture. The appendix, described as normal, was removed. The pathology report described a spherical 5-cm mass of brown, rock-hard material containing the two calcified fecaliths (Figure 3).

Discussion

The diagnosis of appendicitis is based on a thorough history and physical examination. Symptoms include fever, moderate-to-severe right lower abdomen tenderness on palpation, loss of appetite, nausea, vom-

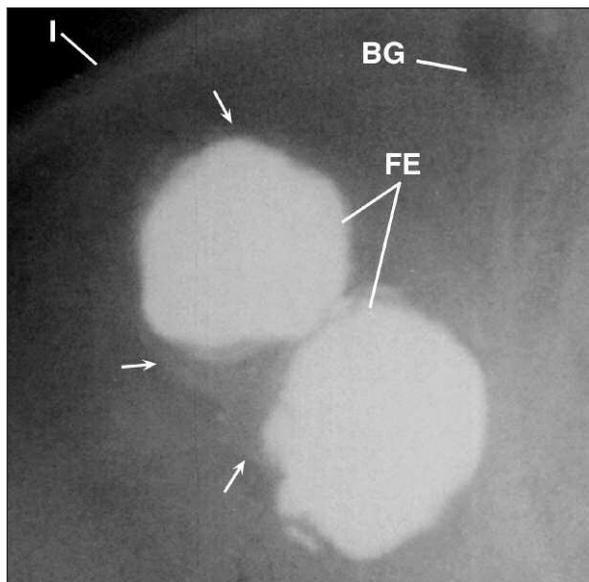


Figure 3 This enlarged image of the fecaliths (FE) displays the fibrous bands (arrows) that adhere the fecaliths to the mucosal surface of the cecum. BG = bowel gas; I = iliac crest.

iting, constipation or diarrhea, inability to pass gas, and abdominal swelling. Since a ruptured appendix may lead to peritonitis and abscess, a baseline anteroposterior abdominal radiograph should be obtained to evaluate for landmark abnormalities. A coprolith (fecalith) in the region of the appendix occurs in about 5% of patients with appendicitis and warrants surgical exploration. Barium enemas are contraindicated if free air is detected in the abdomen on plain films.

With the inflammatory changes of peritonitis, rebound tenderness and guarding are common, and the pain can be localized to one small area between the front of the right hip bone and the umbilicus (McBurney’s point). A perforated appendix is not likely to occur before 24 hours after symptom onset—but is much more likely after 48 hours or more. Chronic pain as in this patient seldom signifies perforation.

Take-home message

Appendicitis should be ruled out in patients with abdominal pain and symptoms such as nausea and vomiting, loss of appetite, and low-grade fever. Plain radiographs can readily display such underlying conditions as fecaliths. Strictures will be visible on postbarium radiographs, a cost-effective approach to the diagnosis of appendicitis. **FPR**