Clinical Vistas

An elderly man with sudden-onset shortness of breath and hydropneumothorax

An 87-year-old man was admitted to hospital for a work-up following a 3-week history of weakness and dizziness. He had experienced a 14-kg weight loss over the preceding 3 months. He denied abdominal or respiratory symptoms and fever, and the rest of his review of symptoms was unremarkable. His examination was normal except for some mild tenderness in the left upper quadrant. His leukocyte count was elevated (23.4 [normal 4–10] $\times 10^9$/L), with neutrophilia (87% neutrophils [normal < 75%]); his other blood counts were unremarkable. A chest radiograph was normal.

On day 2 of his admission, the patient suddenly became short of breath, and a chest radiograph revealed a left-sided hydropneumothorax (not shown). A CT scan of his chest (Fig. 1) revealed an air–fluid level and findings suggestive of empyema. The fluid drained by a chest tube was turbid and foul smelling. Cultures revealed gram-negative enteric organisms, including *Escherichea coli*, *Klebsiella* sp and *Enterococcus* sp consistent with colonic flora. A CT scan of the abdomen (Fig. 2) showed a large abscess in the upper left quadrant of the abdomen and colonic diverticulitis. A gastrograffin enema (Fig. 3) revealed the presence of a fistulous tract, connecting the colon with the left pleural space. The patient underwent emergent colectomy with transverse colostomy. Total parenteral nutrition and broad-spectrum antibiotic therapy were started. Unfortunately, the patient died before thoracic surgery could occur. The surgical pathology findings were consistent with diverticulitis; findings at autopsy ruled out neoplasm as a cause of his colopleural fistula.

DOI:10.1503/cmaj.051046

Colopleural fistula is exceptionally rare. It has occurred after traumatic rupture of the diaphragm,[1] strangulation of part of the colon through a congenital Bochdalek (diaphragmatic) hernia[2] and intra-abdominal surgery,[3] but it can be idiopathic.

Acute empyema resulting from the sudden rupture of an adjacent abscess or viscera usually presents acutely with hyperpyrexia, chest pain, dyspnea and hemodynamic instability consistent with septic shock. Chest radiography may demonstrate an air–fluid level in the lung, with CT imaging showing disease on both sides of the diaphragm. A colopleural fistula should strongly be suspected as the cause of acute empyema if the fluid removed by a chest tube contains colonic flora. The diagnosis can be confirmed by demonstration of the fistulous tract with the use of radiologic studies such as a gastrograffin enema.

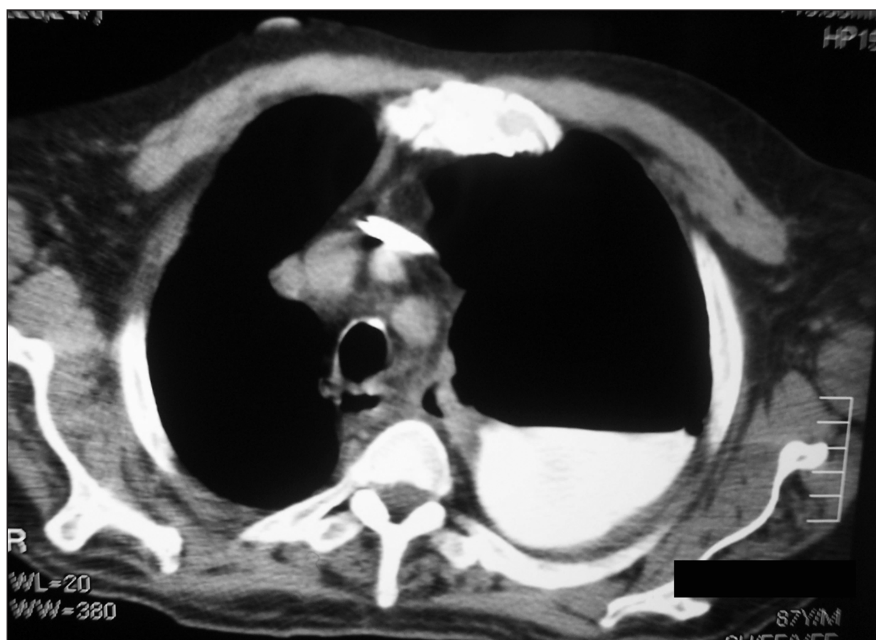

Fig. 1: Chest radiograph, showing air–fluid level.

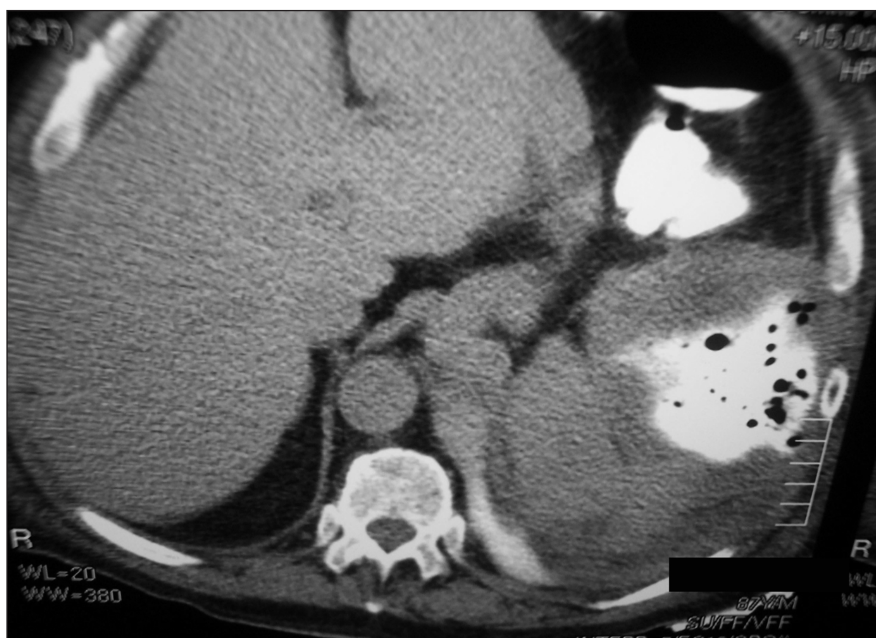

Fig. 2: CT scan of abdomen, showing large necrotic abscess.

© 2006 CMA Media Inc. or its licensors

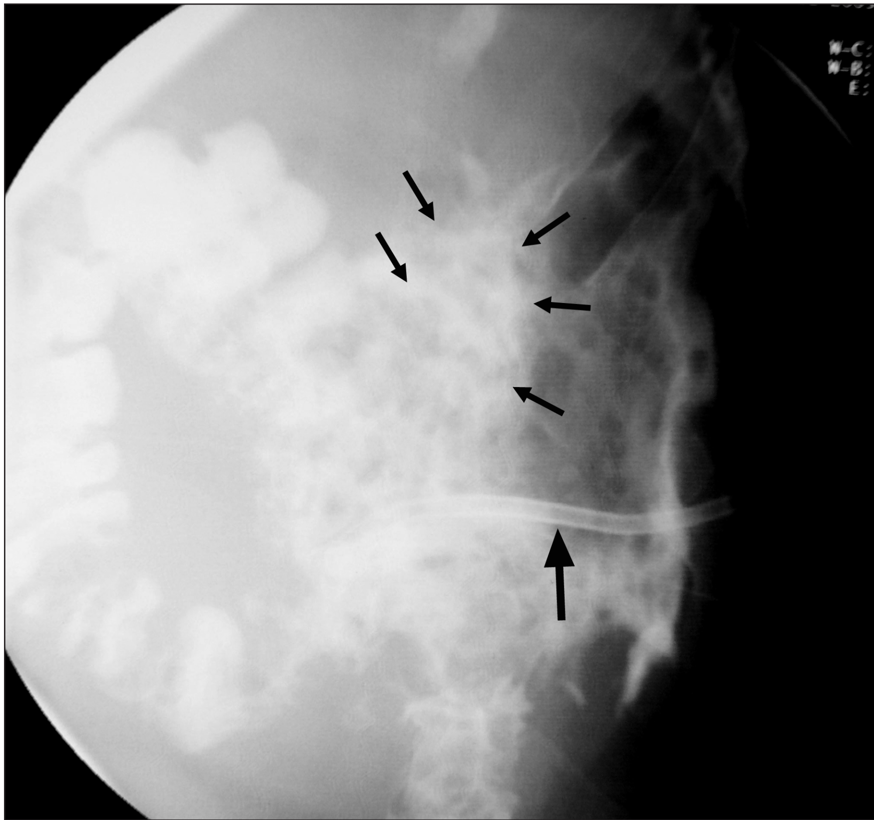

Fig. 3: Gastrograffin enema showing spillage of gastrograffin (small arrows) into pleura through colopleural fistula. Large arrow points to drain inserted in diverticular abscess.

Total parenteral nutrition for complete bowel rest, fluid replacement therapy, and aggressive prevention and treatment of sepsis are indicated in the treatment of colopleural fistula. However, urgent surgical intervention is often required.

Tajender S. Vasu
Jasjet Saluja
Department of Medicine
David Landsberg
Department of Critical Care
Robert Lenox
Division of Pulmonary and Critical Care
Department of Medicine
State University of New York Upstate Medical University
Syracuse, NY

REFERENCES

1. Reddy SA, et al. check authors Colopleural fistula presenting as tension pneumothorax in strangulated diaphragmatic hernia. Report of a case. *Dis Colon Rectum* 1989;32:165-7.
2. Sinha M, Gibbons P, Kennedy SC, et al. Colopleural fistula due to strangulated Bochdalek hernia in an adult. *Thorax* 1989;44:762-3.
3. Papagiannopoulos K, Gialvalis D, Dodo I, et al. Empyema resulting from a true colopleural fistula complicating a perforated sigmoid diverticulum. *Ann Thorac Surg* 2004;77:324-6.

Access

CMAJ is the only leading general medical journal that is free online. CMAJ.ca receives over 2 million hits per month of which two-thirds are from international readers.