Epiploic appendagitis masquerading as pulmonary embolism

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Received 13 February 2003; accepted 6 August 2003

Abstract

There has been recent interest in the radiological literature regarding the various clinical manifestations of epiploic appendagitis, which may mimic many acute abdominal and pelvic conditions. We present a case of appendagitis masquerading as pulmonary embolism; to our knowledge the first reported such presentation with primary thoracic symptoms and findings prompting an initial workup for suspected pulmonary thrombembolism. Radiographic findings, differential diagnosis and the pertinent literature are briefly discussed.

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Keywords: Epiploic appendagitis; Atelectasis; Pulmonary thrombembolism

1. Introduction

There has been recent interest in the radiological literature regarding the abdominal manifestations of epiploic appendagitis. The most common clinical manifestation is lower abdominal pain simulating diverticulitis, appendicitis and gynecologic disease in women. Since epiploic appendages are distributed throughout the colon, upper abdominal symptoms are possible. We report a case which presented with upper abdominal and lower thoracic symptoms, clinically difficult to distinguish from a primary pulmonary process and which prompted initial workup for pulmonary embolus.

2. Clinical case

Case report. The patient was a 49 year old white male with a 24 h history of sudden onset of severe left shoulder and left posterolateral flank pain. There was no associated nausea or vomiting. There was slight tenderness to deep palpation in the left upper quadrant and some discomfort over the left posterior chest with percussion. White Blood Cell count was 13,000 with a shift to the left. The patient’s temperature was 100.5°. There was no prior history of abdominal or pulmonary disease.

Initial chest X-ray demonstrated bibasilar atelectasis. An abdomen film revealed distension of the colon to the level of the proximal descending colon. A water-soluble contrast enema revealed no abnormality. An abdominal CT scan demonstrated a left pleural effusion and basal atelectasis (Fig. 1). A lung scan was low probability for pulmonary embolus. A bilateral lower leg extremity ultrasound was negative. Review of the CT scan showed inflammatory change in the fat of the left upper quadrant adjacent to the left hemidiaphragm and a small focus of oval fat surrounded by a rim of soft tissue in the region of the inflamed fat (Fig. 2). The patient was treated with broad-spectrum antibiotics and pain medication and became afebrile with a normal white count after three days. All symptoms completely subsided over several days. The discharge diagnosis was epiploic appendagitis of the splenic flexure causing sympathetic pleural effusion. The patient has remained asymptomatic with subsequent normal CT scan.

3. Discussion

Most authors believe that epiploic appendagitis is due to torsion and secondary thrombosis of the epiploic appendages, although some have considered the possibility of spontaneous venous or arterial thrombosis in the etiology [1,2]. It is a self-limited disease with a course of approximately one week, requiring only symptomatic treatment for pain [3]. The exact incidence is unclear, although recent use of CT scanning suggests that it is more common than previously suspected [3,4]. Epiploic appendagitis is most common from ages 25 to 50 years with no
sexual predilection. Patients complain of sudden onset of sharp abdominal pain, usually lasting less than one week [5]. Nausea and vomiting occur in approximately 20–40% [6]. Mild fever and elevation of WBC is usually present. There is often a disparity between the patients’ complaints of severe pain and the relatively benign clinical findings. There is usually only mild to moderate focal tenderness without clinical signs of peritonitis. A palpable mass is uncommon. Spontaneous resolution of the symptoms occurs within 1–2 weeks with no sequelae.

Classical CT findings of EA have been described as 1–4 cm oval or round mass of fat density surrounded by a hyperattenuating peripheral rim and often containing a central hyperattenuating focus, contiguous with the serosal surface of the adjacent colon [4,7,8]. Induration and thickening of the adjacent peritoneal lining and surrounding fat is usual present. Previous reports have documented approximately 90% of EA to be in the lower abdomen. Reports are varied as to the predominance of right lower versus left lower abdomen [9,10]. Only 10–15% if the cases have been reported occurring in the transverse colon, hepatic and splenic flexures [9,11,12].

There have been no cases reported of pulmonary manifestations of EA. Because of the proximity to the diaphragm, EA in the more superior aspects of the colon, especially the splenic flexure, would be more likely to cause pulmonary manifestations than the more frequently reported lower abdominal cases. This case presented with symptoms and initial radiological findings suggestive of a pulmonary process, either pneumonia or pulmonary embolus. The abdominal CT demonstrated the classical findings of EA with fat lucency, containing a central area of high attenuation, surrounded by a high attenuation rim and surrounding fat edema. With no other etiology for pulmonary disease in this patient, the inflammation arising from the splenic flexure appendagitis is believed to have resulted in irritation and inflammation of the left hemidiaphragm causing ‘sympathetic’ pleural effusion and secondary atelectasis.

Pleural effusions have been noted in 49% of patients undergoing abdominal surgery [13], 20% of patients with hepatic abscess [14], 80% of patients with subphrenic and upper abdominal abscesses (exclusive of the liver) [15], and 18% of patients with perinephric abscess [16]. The overwhelming majority of these ‘sympathetic’ pleural effusions are sterile. Various mechanisms of formation have been suggested including irritation of the diaphragm, direct passage across defects in the diaphragm, and the development of pleural fluid secondary to atelectasis caused by the upper abdominal process. Whatever the actual mechanism, processes in the upper abdomen produce pulmonary changes, including sterile effusions, in a large proportion of patients. This case is believed to be the first case of sympathetic effusion associated with EA.

References


Vincent Sites, MD initially attended Dartmouth Medical School, and completed his studies at Harvard Medical School. Initially, his two PGY years were devoted to internal medicine at St Luke’s Hospital center in NYC and at the Peter Bent Brigham in Boston, respectively. He then spent two years with the centers for disease control as an epidemiologist. He then completed a residency in diagnostic radiology at the Massachusetts General Hospital. He entered private practice as a general radiologist with subspecialty interest in angiography and interventional radiology. He joined the Lahey Clinic in 1996 and is presently the vice chairman of the Department of Radiology.

Christoph Wald, MD, PhD graduated from Bonn University Medical School in Germany and spent his postgraduate training at the University of Glasgow (1995–1997, Internal Medicine) and then University of Daesseldorf in Germany (1997–1998, Radiology) before transferring to the United States for radiology residency followed by a fellowship in Abdominal Imaging at the Lahey Clinic. He served as president of the Massachusetts Radiological Society and the American College of Radiology Resident Physician Sections as well as on the board of the Massachusetts Medical Society. Apart from his interest in Abdominal and Genitourinary Radiology, Dr Wald is the Director of the 3D Laboratory for Advanced Image Analysis and Virtual Surgical Planning at the Lahey Clinic and specializes in liver transplant imaging and surgical planning.

Francis Scholz, MD, FACR graduated from Georgetown University School of Medicine, interned at Boston City Hospital and did his residency at Lahey Clinic. After two years on staff at Brigham and Women’s Hospital, he joined the staff at Lahey Clinic in 1975 and has practiced there since, serving 10 years as Chairman from 1979 to 1989, and served as president of the staff association, member of the governing board, the board of trustees, and the board of overseers. He served as president of the Massachusetts Radiological Society and of the New England Roentgen Ray Society. He has written numerous papers and chapters in gastrointestinal radiology and has been a oral board examiner in gastrointestinal radiology for over 20 years.