

Pneumoperitoneum in association with perforated appendicitis in a Brazilian Amazon woman. Case report

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SUMMARY: Pneumoperitoneum in association with perforated appendicitis in a Brazilian Amazon woman. Case report.

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Radiographic findings of free air in the peritoneal cavity secondary to perforation of a acutely inflamed appendix are extremely rare. It accounts for about 0-7% of all patients with pneumoperitoneum.

We report on a 58-years-old Brazilian Amazon woman presenting a 1-week history of abdominal pain, tenderness and distension associated with asthenia and without passage of stool or gas. Abdominal percussion revealed a tympanic sound located on the right hypocondrium. Plain chest radiography revealed a large amount of free air beneath the right leaf of the diaphragm.

The patient was taken immediately to the operation room and, during surgery, a gangrenous appendix with an apex perforation was verified. Appendectomy was performed as routinely.

The patient evolved with pneumonia and septic shock that responded well to intravenous antibiotics and vasoactive drugs. She was discharged to home on the twenty-first post-operative day in good clinical conditions.

This case highlights that perforated acute appendicitis is rarely associated with pneumoperitoneum, but it must be considered in the differential diagnosis of patients presenting right abdominal pain and free intraperitoneal air.

RIASSUNTO: Pneumoperitoneo associato ad appendicite perforata in un paziente dell'Amazzonia Brasiliana. Case report.

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Lo pneumoperitoneo, cioè la presenza di aria libera nella cavità peritoneale da perforazione di appendicite acuta, è rarissimo. Rappresenta dallo 0% al 7% di tutti gli pneumoperitonei.

Il caso qui discusso è quello di una paziente dell'Amazzonia Brasiliana, 58 anni d'età, con storia di dolori e distensione addominale da una settimana associati ad astenia e alvo chiuso a foci e gas. La percussione addominale ha evidenziato timpanismo localizzato nell'ipocondrio destro. La radiografia toracica ha rivelato una grande quantità di aria sotto la cupola destra del diaframma.

La paziente è stata portata immediatamente in sala chirurgica e, durante l'operazione, si è verificata la presenza di appendice gangrenosa con perforazione del tratto distale. L'appendicectomia si è svolta normalmente.

La paziente ha presentato nel post-operatorio polmonite e shock settico, che hanno risposto positivamente alla terapia. La paziente è stata dimessa in XXI giornata in buone condizioni cliniche. Questo caso rafforza la tesi che l'appendicite acuta perforata, anche se raramente associata allo pneumoperitoneo, dev'essere inclusa nella diagnosi differenziale in pazienti con dolori addominali nei quadranti destri e aria libera intraperitoneale all'esame radiografico.

KEY WORDS: Acute appendicitis - Pneumoperitoneum - Surgery.
Appendicite acuta perforata - Pneumoperitoneo - Chirurgia.

Introduction

Acute appendicitis is a common cause of nontraumatic abdominal emergency requiring surgery (1). Most

patients with typical clinical findings undergo immediate operation without preoperative imaging, but when diagnosis is uncertain because of atypical symptoms plain radiography is usually requested. However, less than 50% of patients show an abnormality on plain films and the most specific sign is the presence of an appendicolith (2). Radiographic findings of free air in the peritoneal cavity secondary to perforation of an acutely inflamed appendix are extremely rare. It accounts for about 0-7% of all patients with pneumoperitoneum (3-5).

The aim of the present report is to describe the ca-

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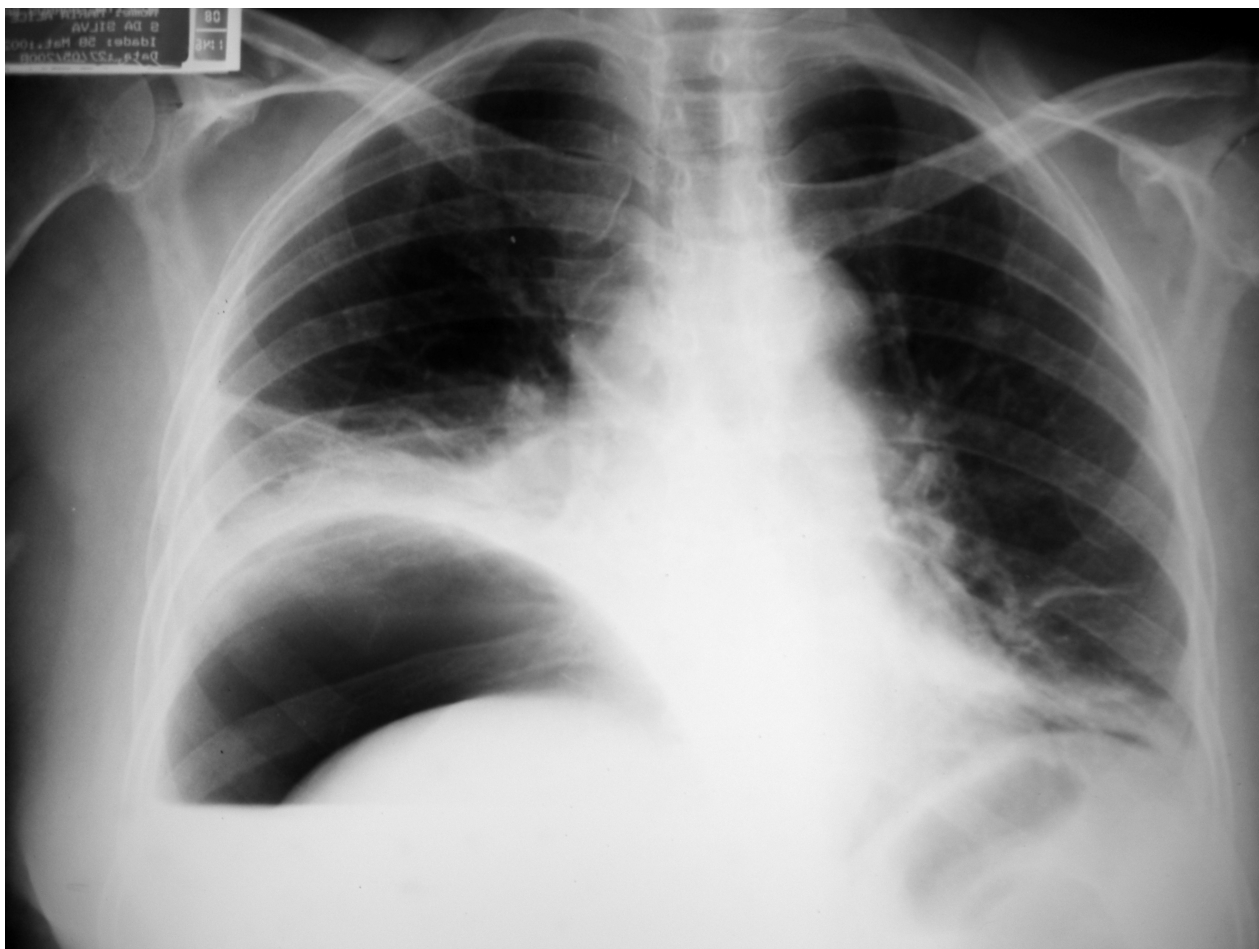


Fig. 1 - Plain chest radiography showing a large amount of free air beneath the right leaf of the diaphragm.

se of a Brazilian Amazon woman presenting pneumoperitoneum in association to perforated acute appendicitis.

Case report

A 58-years-old Brazilian Amazon woman was admitted with a 1-week history of abdominal pain, tenderness and distension associated with asthenia and absence passage of stool or gas. Her medical history was remarkable for type 2 diabetes mellitus, managed with glibenclamide 5 mg twice daily.

On physical examination, the patient was afebrile, markedly dehydrated and tender in the right lower abdominal quadrant. There was rebound tenderness and involuntary guarding. During abdominal percussion, a tympanic sound was identified on the right hypochondrium instead of liver dullness. Plain chest radiography revealed a large amount of free air beneath the right leaf of the diaphragm (Fig. 1).

The patient was immediately taken to the operation room where an exploratory laparotomy was performed. During surgery, a gangrenous appendix with a perforation on the apex was verified. Appendectomy was performed as routinely. After surgery, the patient

was admitted to the Intensive Care Unit and, on the third post-operative day, complicated with pneumonia and septic shock that responded well to intravenous antibiotics and vasoactive drugs.

She was discharged to home on the twenty-first post-operative day, in good clinical conditions.

Discussion

Acute abdominal pain unrelated to trauma is one of the most commonly found condition in patients admitted to the hospital emergency department. Acute appendicitis is the leading cause of right lower abdominal pain requiring surgery, however no clinical features, laboratory or imaging investigation are very sensitive or specific (6). The presence of a calcified and solitary appendicolith on plain radiography is referred as the most specific finding (2).

However, pneumoperitoneum is rarely found in cases of perforated appendicitis because the appendiceal lumen is usually obliterated central to the perforation,

and visceral walling off will tend to localize the process (8). It accounts for about 0-7% of all patients presenting pneumoperitoneum (3-5). According to Spensley et al. (1956) (9), radiographic findings of free air in the peritoneal cavity are usually caused by perforation of a peptic gastric or duodenal ulcer, but in 25-30% of cases it results from conditions other than ruptured peptic ulcer, such as perforated appendix, perforated sigmoid diverticulum, leakage of gastroenteric or ileotransverse colon anastomosis (7).

Guillemin, in 1923, published the first report on pneumoperitoneum associated with acute appendicitis (8, 10). Available studies indicate that significant mortality rates (13.5%) and increased postoperative complication exist when free intraperitoneal air is found in a patient with perforation of the appendix (4, 11).

However, whether immediate exploration and surgical cure are performed, the course of the disease and prognosis of the patient do not alter (12). Postoperative possible complications are infectious (parietal abscess, intraperitoneal abscess, enteric fistula, pneumonia, pseudomembranous colitis) or non-infectious (urinary retention, postoperative intestinal obstruction) (4). In the present report, the patient evolved with pneumonia and septic shock, on the third postoperative day, and responded well to intravenous antibiotics and vasoactive drugs.

In conclusion, this case highlights that perforated acute appendicitis is rarely associated with pneumoperitoneum, but it must be considered in the differential diagnosis of patients presenting right lower abdominal pain and free intraperitoneal air.

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