Acute Acalculous Cholecystitis as an Unusual Extrapulmonary Manifestation of COVID-19: Do We Need to Think Twice in Patients Presenting With Abdominal Pain in the COVID Times?

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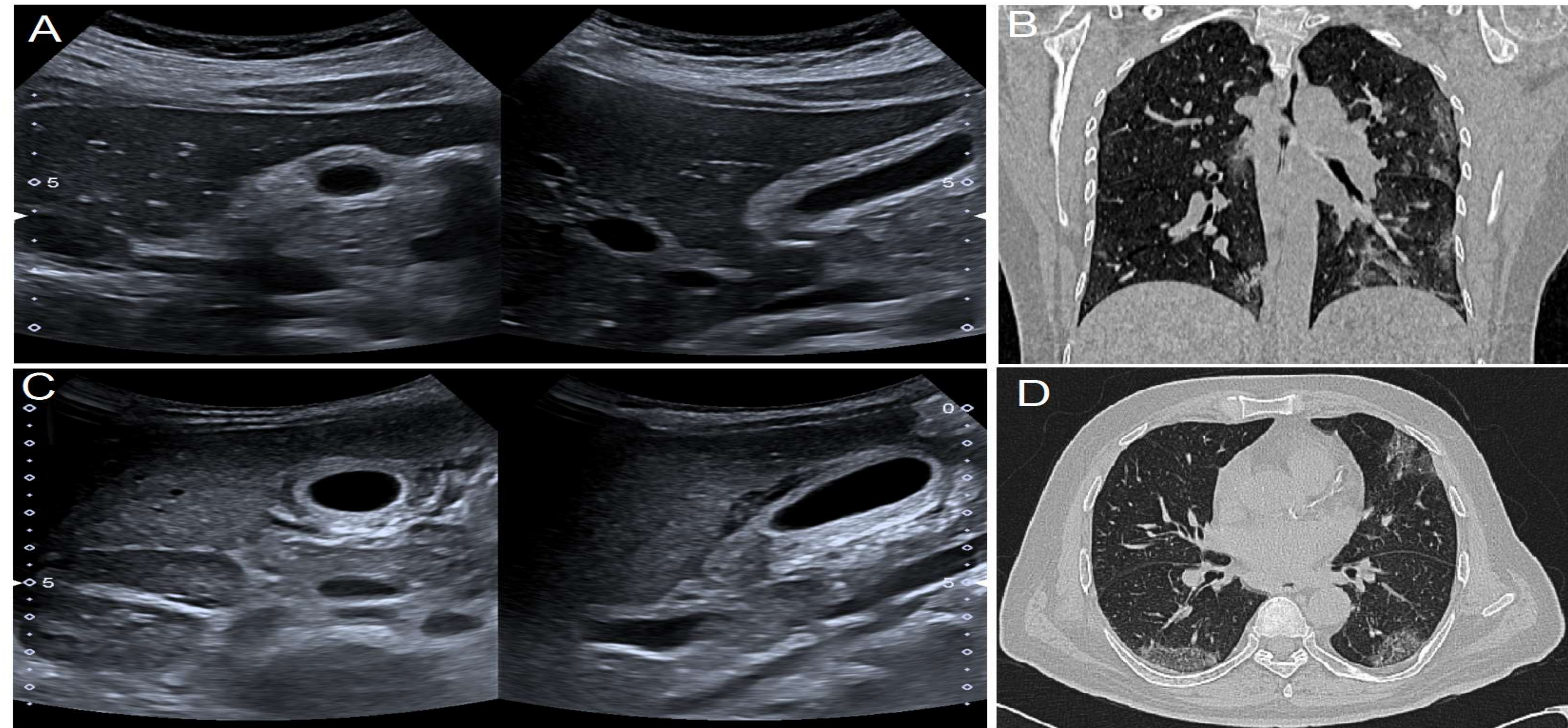
Introduction

The COVID-19 pandemic continues to pose a health challenge with emerging atypical presentations. It mainly affects the lungs, but patients may present with atypical gastrointestinal symptoms. COVID-19-related acute acalculous cholecystitis (AAC) remains exceedingly rare. We hereby report 2 unique patients who were admitted with AAC-related abdominal pain as the only clinical presentation of COVID-19.

Case Descriptions/Methods

Patient 1: A 41-year-old female presented to our hospital with severe, dull, right upper quadrant (RUQ) pain for 4 days. No other GI symptoms were noted. Clinical examination was positive for Murphy's sign. Laboratory studies revealed leukocytosis and elevated levels of inflammatory markers. Abdominal ultrasonography revealed gallbladder wall thickening and pericholecystic fluid, with no gallstones **(Figure 1, A).** After one day in hospital, she also developed a low-grade fever, dry cough, and mild shortness of breath. SARS-CoV-2 testing using RT-PCR via nasopharyngeal swab was positive. CT scan also confirmed COVID pneumonia **(Figure 1, B)**. She achieved complete recovery with piperacillin-tazobactam therapy, with no need for surgery. **Patient 2:** A 24-year-old previously healthy man came to our hospital for RUQ pain for 2 days. The dull, moderate pain radiated to his right shoulder. Physical examination showed RUQ tenderness. Murphy's sign was positive. Laboratory studies revealed an elevated white cell count and CRP level. Abdominal ultrasonography revealed marked gallbladder wall thickening and pericholecystic fluid collection, with no stones or sludge in the gallbladder fossa **(Figure 1; C).** CT chest findings confirmed viral pneumonia **(Figure 1; D).** Coronavirus testing with RT-PCR also came back positive. Treatment with meropenem and azithromycin achieved resolution of symptoms. The patient did not require surgery for AAC.

Figure 1: Imaging showing COVID-19-related acute acalculous cholecystitis



Discussion

The clinical association between AAC and COVID-19 remains fallible. We conducted a systematic review using terms: "acalculus cholecystitis" and "COVID-19," between inception and June 15, 2022. The search identified only 22 cases of COVID-19-related AAC. This article emphasizes that AAC can be the only clinical presentation of underlying COVID-19, with no pulmonary symptomology. Therefore, SARS-CoV-2 may be excluded before admission using RT-PCR and CT chest in patients presenting with biliary symptoms related to cholecystitis. As in our cases, it is imperative to know that these patients may not require surgical intervention for AAC.

Figure 1

Figure 1. A: Abdominal ultrasound showing thickened gallbladder wall, with pericholecystic fluid collection and no gallstones. **B:** CT chest revealing bilateral interstitial infiltrates. **C:** Ultrasonography abdomen showing gallbladder wall thickening, pericholecystic fluid collection, with no stones or sludge in the gallbladder fossa. **D:** CT chest showing bilateral, patchy, peripheral ground-glass opacities in the lungs.