Title
Point-of-care Ultrasound Diagnosis of Emphysematous Cholecystitis

Permalink
https://escholarship.org/uc/item/1z78174b

Journal
Clinical Practice and Cases in Emergency Medicine, 4(1)

Authors
Al Hammadi, Fadwa
Buhumaid, Rasha

Publication Date
2020

DOI
10.5811/cpcem.2019.11.45337

Supplemental Material
https://escholarship.org/uc/item/1z78174b#supplemental

Copyright Information
Copyright 2020 by the author(s). This work is made available under the terms of a Creative Commons Attribution License, available at https://creativecommons.org/licenses/by/4.0/

Peer reviewed
Point-of-care Ultrasound Diagnosis of Emphysematous Cholecystitis

Fadwa Al Hammadi, MBBS*
Rasha Buhumaid, MBBS†

*Sheikh Khalifa Medical City, Department of Emergency Medicine, Abu Dhabi, United Arab Emirates
†Mohammed Bin Rashid University of Medicine and Health Sciences, Department of Emergency Medicine, Dubai, United Arab Emirates

CASE PRESENTATION

A 49-year-old male presented to the emergency department with abdominal pain and generalized weakness. The physical examination was positive for right upper quadrant tenderness and positive Murphy’s sign. Point-of-care biliary ultrasound revealed signs of emphysematous cholecystitis. Emphysematous cholecystitis is a rare biliary pathology with a high mortality rate. It differs from acute cholecystitis in many ways. It has unique ultrasound characteristics. This case highlights the use of point-of-care ultrasound to diagnose a rare biliary condition. [Clin Pract Cases Emerg Med. 2020;4(1):107–108.]

DISCUSSION

Emphysematous cholecystitis (EC) is diagnosed by the presence of gas in the lumen or the wall of the gallbladder in the setting of acute cholecystitis. It is a rare biliary pathology with a high mortality rate. EC differs from acute cholecystitis in many ways. It is more common in men and diabetics, and one third of the cases are not associated with cholelithiasis. It is thought to be due to an ischemic event followed by an infection with gas-forming bacteria.

The causative organism identified in this case is rare. The most common bacteria associated with this condition are Clostridium species, Escherichia coli, Klebsiella species, and anaerobic streptococci.

The appearance of EC on ultrasound differs depending on the amount of gas in the gallbladder. A small amount of gas will produce echogenic foci with reverberation artifact known as ring-down artifact. However, a large amount of gas will produce a band with posterior dirty shadowing.
Gas can also form multiple echogenic foci that move from the dependent to the independent area within the lumen of the gallbladder, also known as “effervescent gallbladder” or the “champagne” sign. Computed tomography is more sensitive and specific for the diagnosis of this condition. EC is a surgical emergency that is managed with intravenous antibiotics and cholecystectomy. Alternatively, percutaneous cholecystostomy is used in patients who are high risk for surgery.

Video. Point-of-care biliary ultrasound identifying gallstones (white arrow), pericholecystic fluid (red arrow), and gas in the gallbladder lumen (green arrow).

REFERENCES