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Title

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Permalink

<https://escholarship.org/uc/item/1xb6x27d>

Journal

Western Journal of Emergency Medicine: Integrating Emergency Care with Population Health, 15(7)

ISSN

1936-900X

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Publication Date

2014

DOI

10.5811/westjem.2014.9.23630

Supplemental Material

<https://escholarship.org/uc/item/1xb6x27d#supplemental>

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Peer reviewed

Ultrasound Distinguishes Ascites from a Large Ovarian Fluid-Filled Cyst

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Submission history: Submitted August 26, 2014; Revision received September 10, 2014; Accepted September 17, 2014

Electronically published October 10, 2014

Full text available through open access at http://escholarship.org/uc/uciem_westjem

DOI: 10.5811/westjem.2014.9.23630

[West J Emerg Med. 2014;15(7):831.]

A 51-year-old woman with Hepatitis C was referred to the emergency department (ED) for “massive ascites.” She reported increasing abdominal girth for six months with intermittent abdominal pain. An outpatient ultrasound performed two weeks prior to ED presentation was interpreted by a radiologist as “massive ascites, no masses within the abdomen” on the paper report the patient brought with her. In the ED, the patient was afebrile with normal vital signs. Her abdomen was distended with mild right upper quadrant tenderness.

The emergency physician performed an abdominal ultrasound expecting to find free intraperitoneal fluid; instead, a large, fluid-filled cystic structure was identified. Further evaluation of Morison’s pouch and the left upper quadrant also showed no intraperitoneal fluid outside of the cystic structure (Video). Computed tomography of the abdomen and pelvis demonstrated a large right adnexal mass (33 x 21 x 31cm) without evidence of ascites. The gynecology service scheduled the patient for outpatient surgery, which identified the cystic structure as benign mucinous cystadenoma.

Several conditions can cause abdominal distention and mimic ascites, including hepatosplenomegaly, bowel obstruction, large renal cysts, and pelvic masses.¹⁻⁴ The physical examination is of limited value, as it is neither sensitive nor specific for ascites.^{1,5,6} Therefore, bedside ultrasound can be instrumental in defining the presence and location of fluid in patients with abdominal distention. However, large cystic masses can be difficult to sonographically distinguish from ascites, as illustrated by the results of the initial outpatient ultrasound in this case. When assessing intraperitoneal fluid, it is essential to confirm that the fluid tracks along fascial planes into dependent areas (e.g., Morison’s pouch), as fluid encapsulated in a cyst will not behave in this manner. This case highlights the utility of emergency physician performed ultrasound in the evaluation of abdominal distention and the challenges of sonographically distinguishing free intraperitoneal fluid from fluid within a cyst.

Video. Sagittal and transverse ultrasound images of the pelvis performed with a phased array probe demonstrate a large anechoic fluid collection contained within a cyst. Coronal ultrasound images of the right and left upper quadrants revealed no free fluid in Morison’s pouch or around the spleen. Coronal and sagittal CT images of the abdomen and pelvis show a large right adnexal mass (33 x 21 x 31cm) with homogenous attenuation greater than water, but less than muscle, with no ascites.

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Conflicts of Interest: By the WestJEM article submission agreement, all authors are required to disclose all affiliations, funding sources and financial or management relationships that could be perceived as potential sources of bias. The authors disclosed none.

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