

POCUS Case Conference

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Clinical presentation

83F with h/o of afib, cholelithiasis/choledocolithiasis c/b cholecystitis in 2015 s/p lap chole and CBD stent placement, hypothyroidism who presents with acute on chronic abdominal pain.

Unclear for how long diffuse abdominal pain that over the last 2 weeks has been worse in intensity, seen by PMD who Rx stool softener. Normal stools, occasionally constipated, subjective fevers at home.

Clinical presentation

- In the ED VST 38, HR 60-70, SBP 100-120s, Sat >95% on RA.
- P.E: Abd diffusely tender, distended, no rebound or guarding, Murphy's sign negative.

Labs

WBC **14.3**/Hb13.4 (MCV 95.6)/Hcto 38.0/Plt 275

131 | 97 | 14

-----< 109 Ca: 10.0 Mg: 1.5 AG:11.0

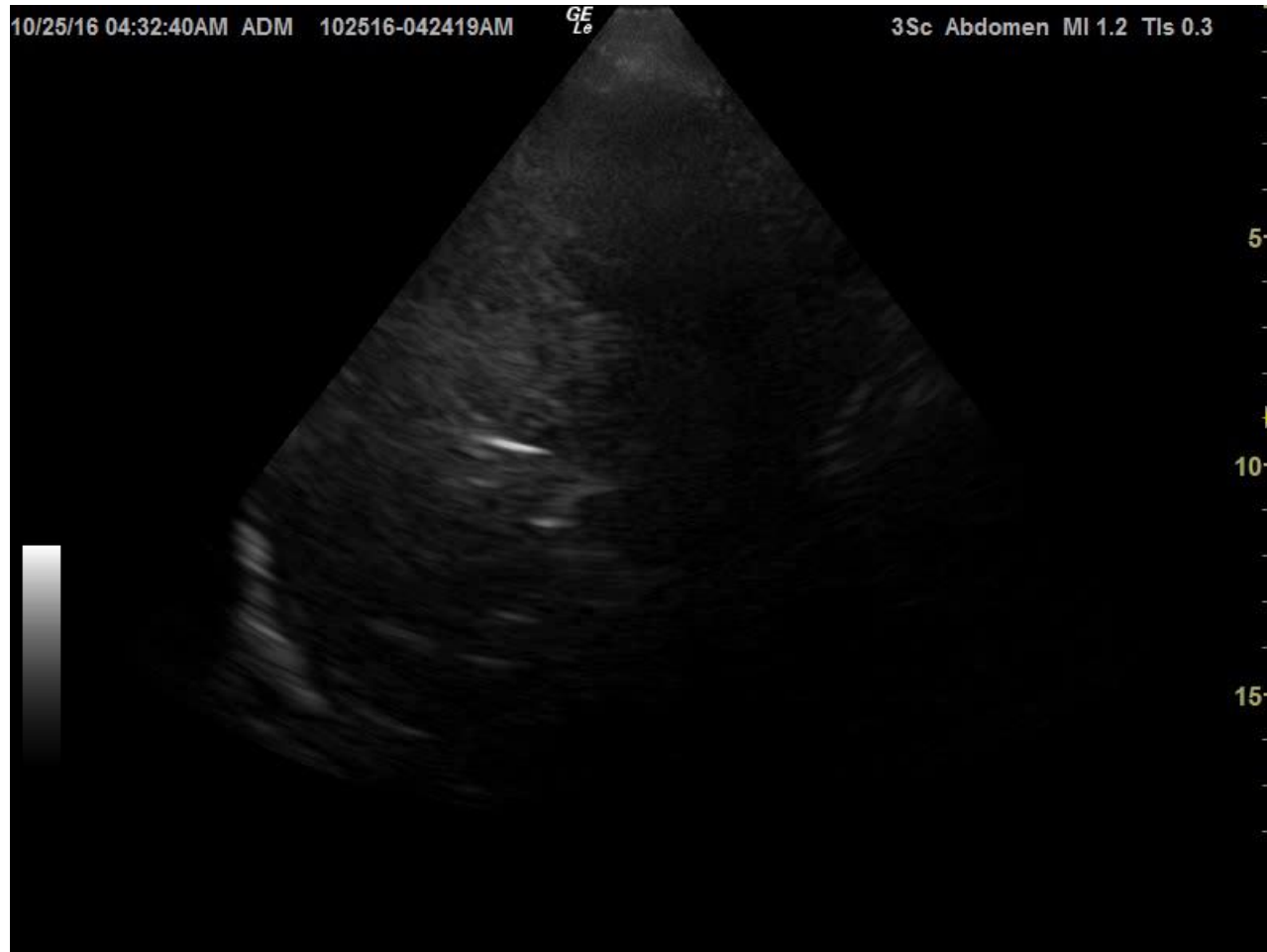
5.1 | 23 | 0.75

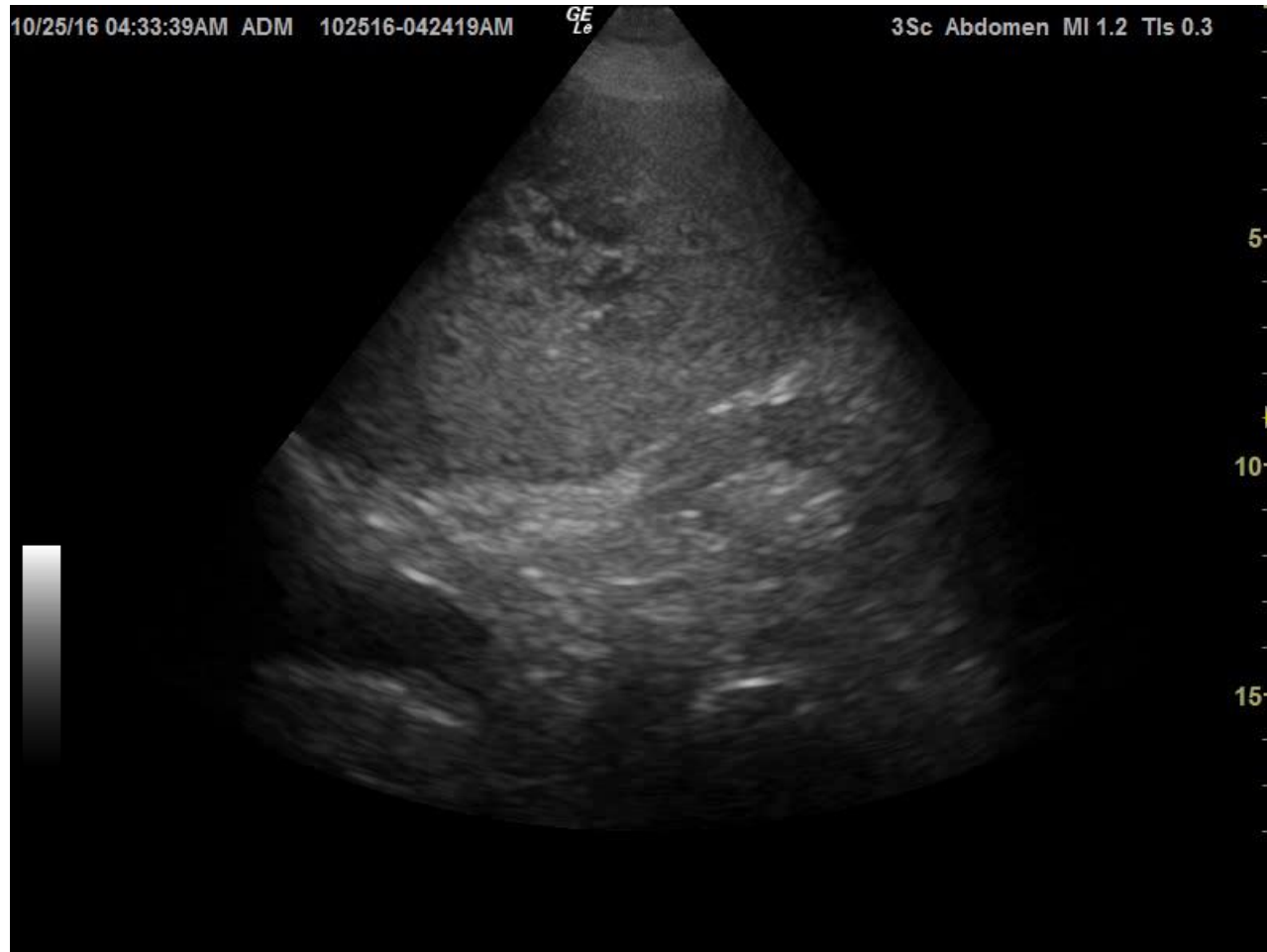
Prot: 6.5 / Alb: 2.7 / Bili: 1.1 / Dir: 0.6 / AST: **48** / ALT: 53 / AlkPhos:
282



US









US description

- **Amebic:** Hypoechoic focal hepatic lesion, single (60%), most commonly located in the posterior part of the right lobe, without an appreciable rim or capsule.
- **Pyogenic:** More variable in shape and irregular walls. Often multiple, involving both lobes of the liver, and some show areas of marked echogenicity due to gas bubbles

POCUS and diagnosis of liver abscesses

- No published data other individual case descriptions on the use of POCUS to diagnose amoebic and other liver abscesses is available*
- POCUS protocols to screen the liver using 3–4 scan positions, including an intercostal and epigastric approach appear feasible, but will need validation in further studies.

*Elia F, Campagnaro T, Salacone P, Casalis S, 2011. Goal-directed ultrasound in a limited resource healthcare setting and developing country. *Crit Ultrasound J* 3: 51– 53.

BÉLARD AND OTHERS

POINT-OF-CARE ULTRASOUND IN TROPICAL MEDICINE

Review Article: Point-of-Care Ultrasound Assessment of Tropical Infectious Diseases—A Review of Applications and Perspectives

Sabine B elard,* Francesca Tamarozzi, Amaya L. Bustinduy, Claudia Wallrauch, Martin P. Grobusch, Walter Kuhn, Enrico Brunetti, Elizabeth Joekes, and Tom Heller



FIGURE 4. (A) Right longitudinal upper quadrant view: amebic liver abscess posteriorly in the right lobe of the liver, presenting as a round hypoechoic lesion with hyperechoic debris and without a clearly discernable wall. (B) Right longitudinal upper quadrant view: pyogenic liver abscess presenting as an irregularly shaped, hypo- to anechoic lesion, containing hyperechoic gas bubbles with posterior acoustic shadowing.

Summary of reported experiences of POCU assessment of tropical infectious diseases

Disease (protocol)	Population	Clinical symptoms	US findings	Suggested action	Evidence	Reference
TB (FASH)	Africa (particularly southern Africa), Asia, and South America with high HIV/TB coinfection prevalence	Fever	Enlarged hypoechoic lymph nodes	Do sputum smear exam	Well described and widely used in South Africa	11-13,127
		Weight loss	Micro-abscesses in spleen and/or liver	Start empirical TB treatment		
		Cough	Pleural effusion	Test for HIV if not done previously and treat accordingly		
		Abdominal symptoms (diarrhea, pain, and abdominal distension), shortness of breath	Pericardial effusion			
		Hypotension	Ascites			
Echinococcosis (FASE)	Sheep farming populations, South America, Middle East, eastern Europe, The Mediterranean, Central Asia, China, east Africa	Symptoms depend on cyst's size, number, and organ affected	Appearance depends on cyst stage (WHO-IWGE)	Stage-specific treatment of liver CE (WHO-IWGE)	FASE implemented in Argentina	33-36,40,43
		Jaundice	CE1: anechoic with double wall			
		Right upper quadrant pain	CE2: honeycomb appearance, adjacent anechoic daughter vesicles contained in the "mother" cyst's wall			
		Most cases have few or no symptoms	CE3a: anechoic with "lily sign" (detached endocyst)			
			CE3b: daughter vesicles within a solid matrix of the "mother" cyst			
			CE4: inhomogeneous content with visible hypoechoic folded endocyst ("ball of wool" sign)			
CE5: same as CE4 with calcified wall						
Amebic liver abscess	Worldwide in tropical countries	Fever	Hypoechoic, but not anechoic, round homogenous liver lesion => amebic abscess?	Start antibiotic e.g., metronidazole treatment	Individual descriptive studies only	46,48,49
		Right upper quadrant abdominal pain	Differentials:	Amebic serology		
			a) Lesion containing gas, irregular shape => pyogenic abscess?	In imminent rupture, US-guided aspiration		
			b) Central calcification => abscess due to brucellosis?	Brucella serology		
			c) Noninfectious lesion, e.g., necrotic tumor			

Accuracy of point of care ultrasound to identify the source of infection in septic patients: a prospective study

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Table 1 Identified septic sources

	No.	%
Respiratory infections	79	39.5
Pneumonia	79	39.5
Abdominal infections	39	19.5
Cholecystitis	13	6.5
Cholangitis	11	5.5
Appendicitis	6	3.0
Diverticulitis	6	3.0
Intra-abdominal abscesses	3	1.5
Urosepsis	46	23.0
Urinary tract infections (UTI)	29	14.5
Hydronephrosis/Pyelonephritis	17	8.5
Endocarditis	2	1.0
Joint abscesses	1	0.5
Musculoskeletal abscesses	2	1.0
Hepatic abscesses	1	0.5
Meningitis	2	1.0
Other	6	3.0
Total identified	178	89.0
Unidentified septic source	22	11.0
Total	200	100.0