Ultrasound Conference

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From the Red Service…

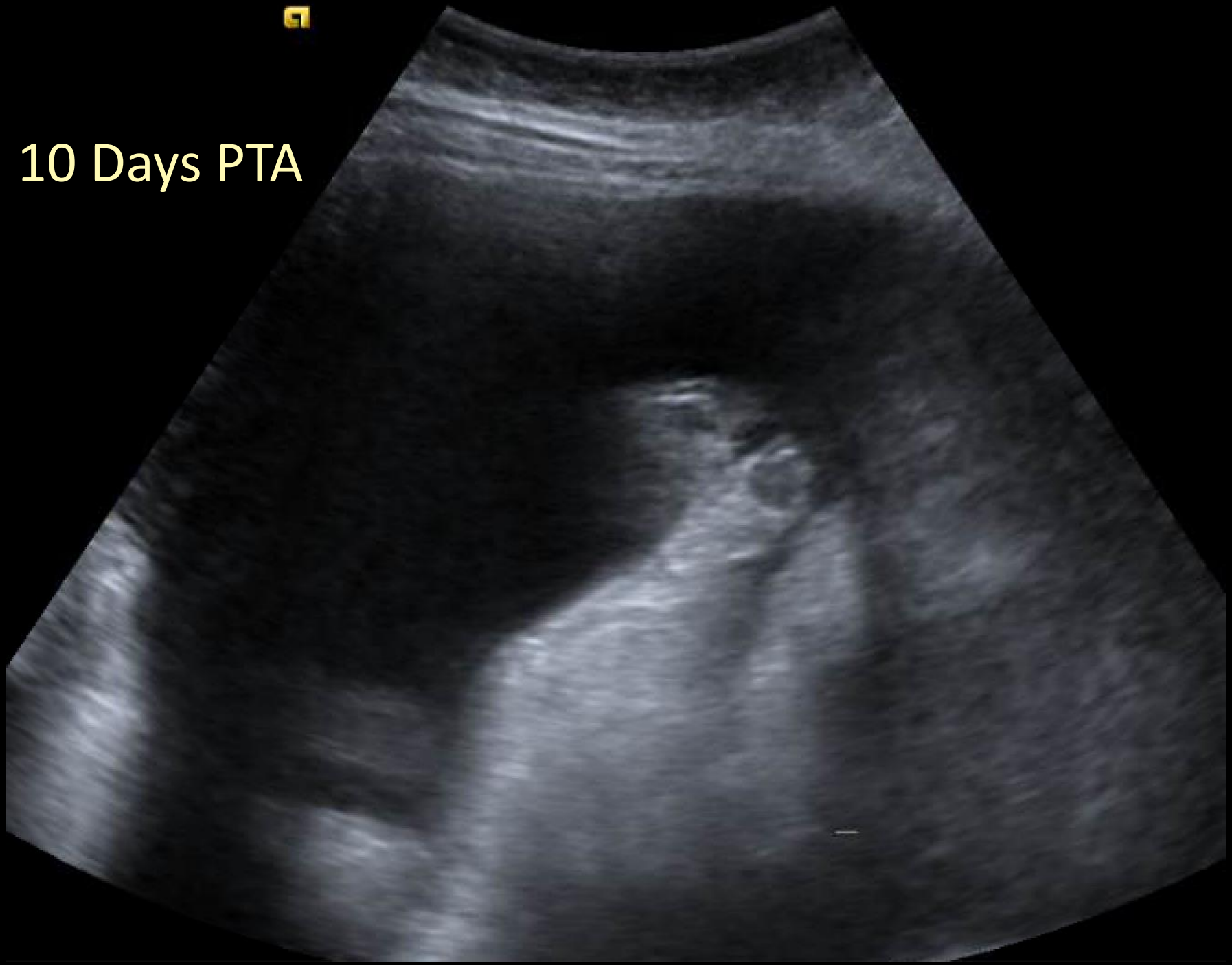
59-year-old woman with cholangiocarcinoma with diffuse liver involvement admitted with abdominal pain and nausea

Diagnosed one year prior on chemotherapy with complications including recurrent cholangitis, portal vein occlusion and recurrent ascites

History of Present Illness

Recurrent cholangitis necessitated percutaneous biliary drain placement and multiple ERCP/biliary stent placement and she had multiple large volume paracenteses for her ascites

Two months prior to admission, CT imaging showed progression of liver lesions, a new large pleural effusion and peritoneal enhancement concerning for carcinomatosis


10 Days PTA

History of Present Illness

Two days of worsening pain, shortness of breath, abdominal distension and subjective fevers at home

ED vitals: afebrile with HR in 120s

Uncomfortable appearing with cachexia, decreased left sided breath sounds, abdominal distension and diffuse abdominal tenderness.

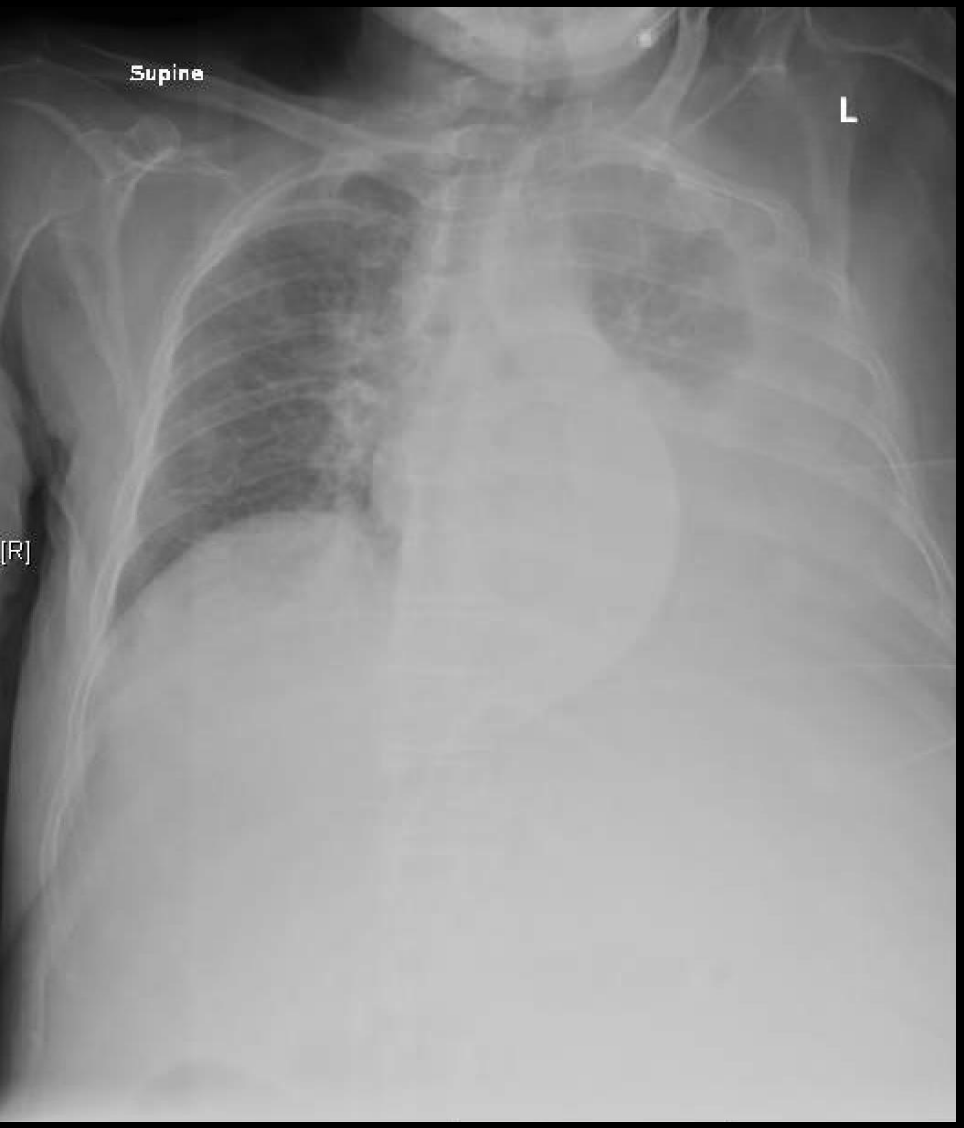
Labs

White count 25
Lactate 5
Tbili 3.6
Dbili 1.7
AST 56
ALT 26
Alkphos 280
Albumin 2.3

Paracentesis

White count: 1890
89% Neutrophils
Protein 1.3
Albumin 1.0

Gram Stain: negative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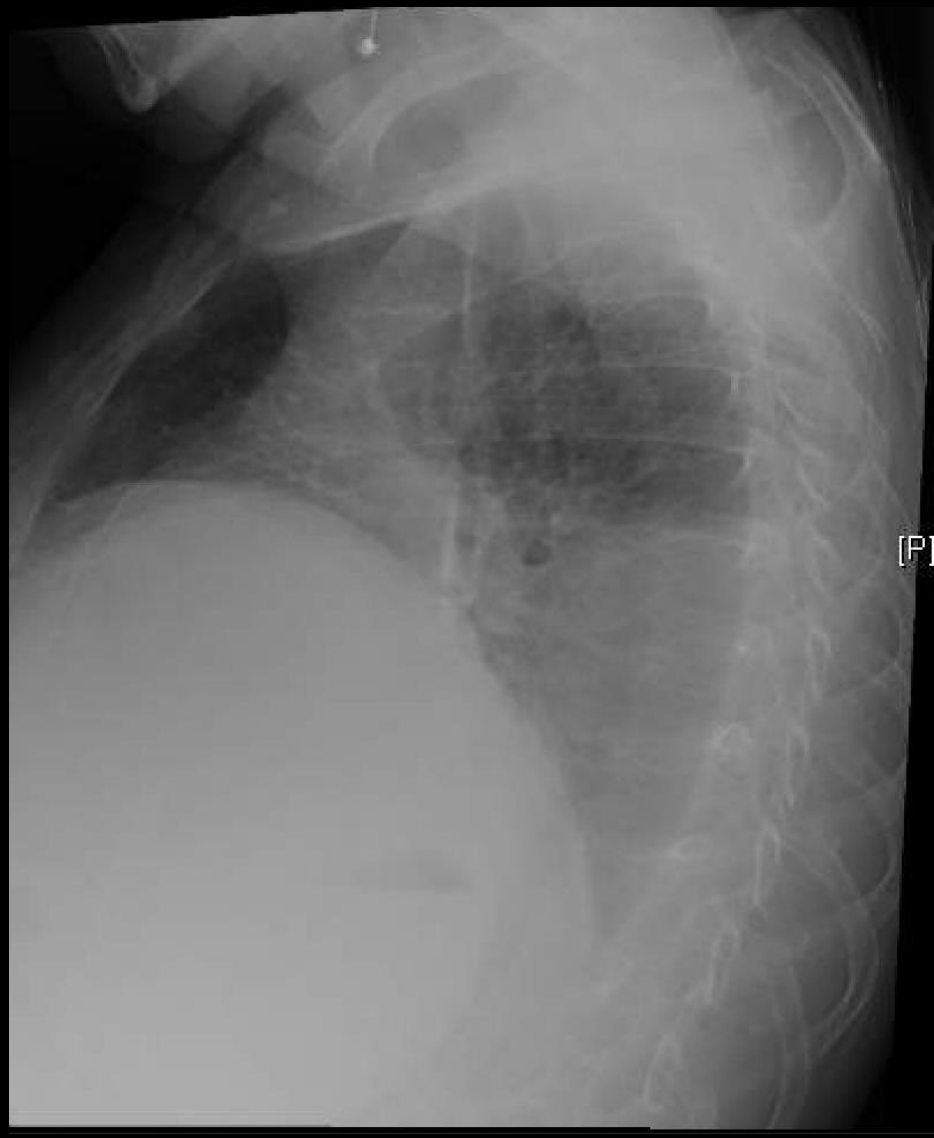
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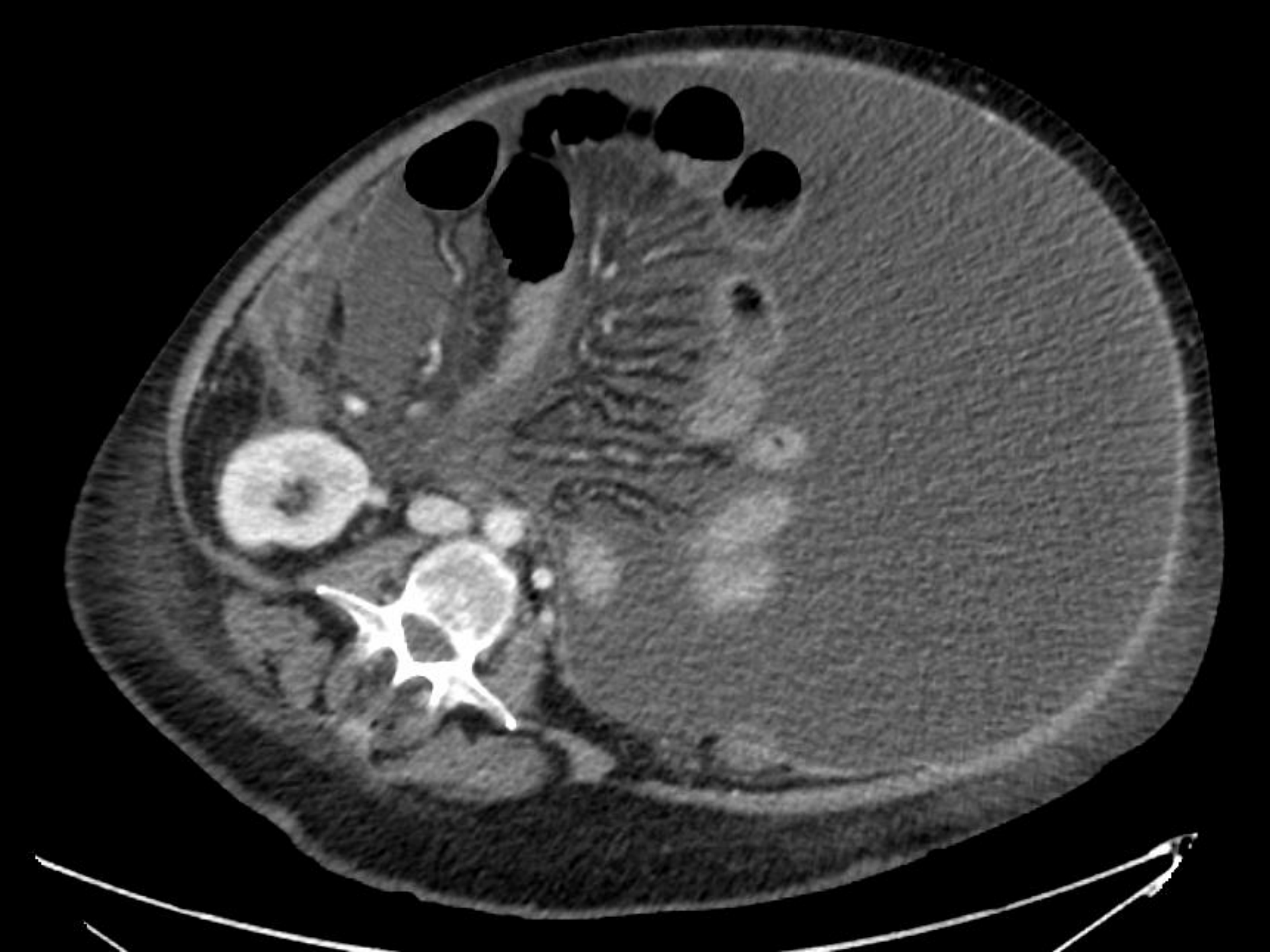

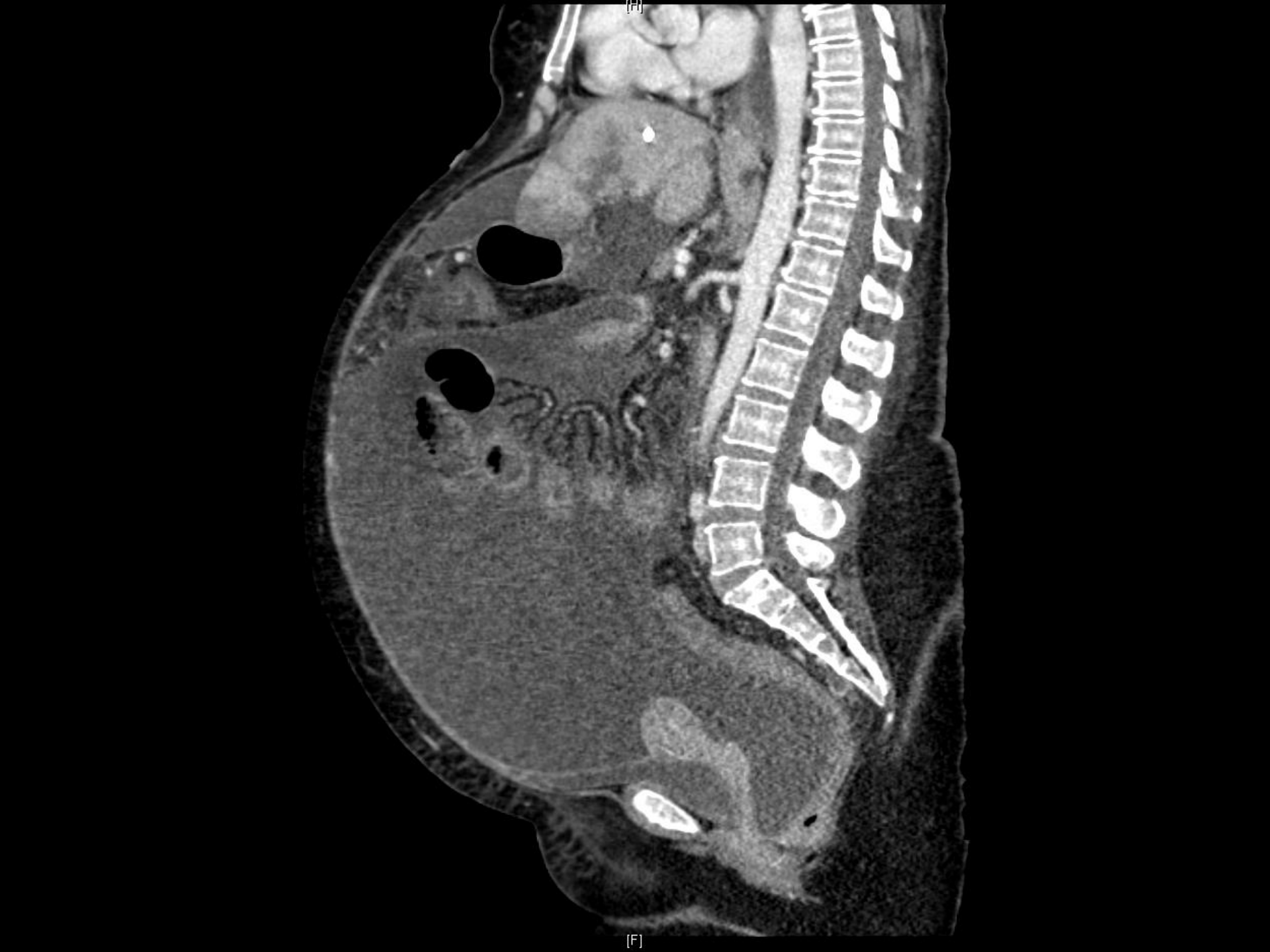
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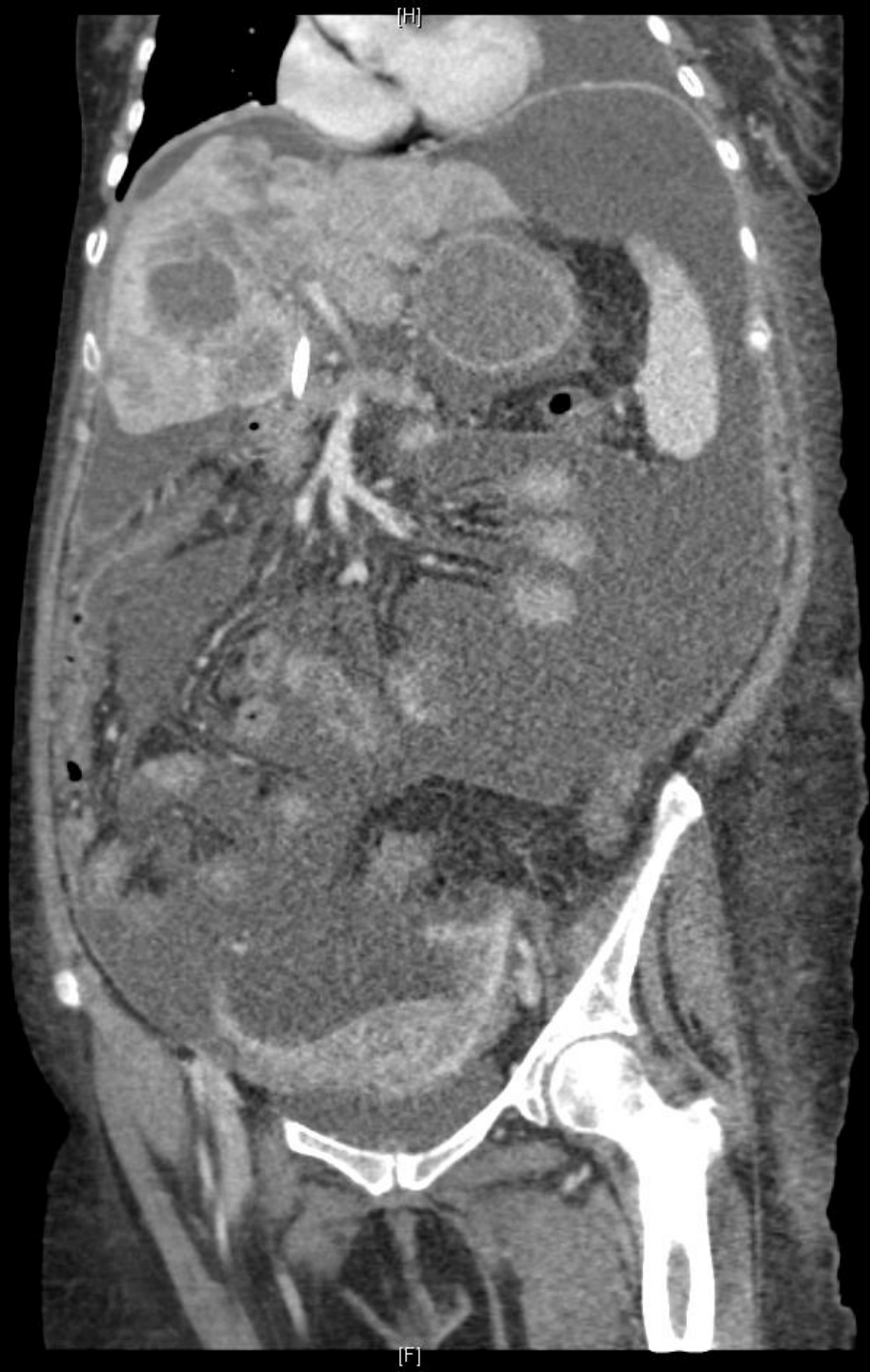
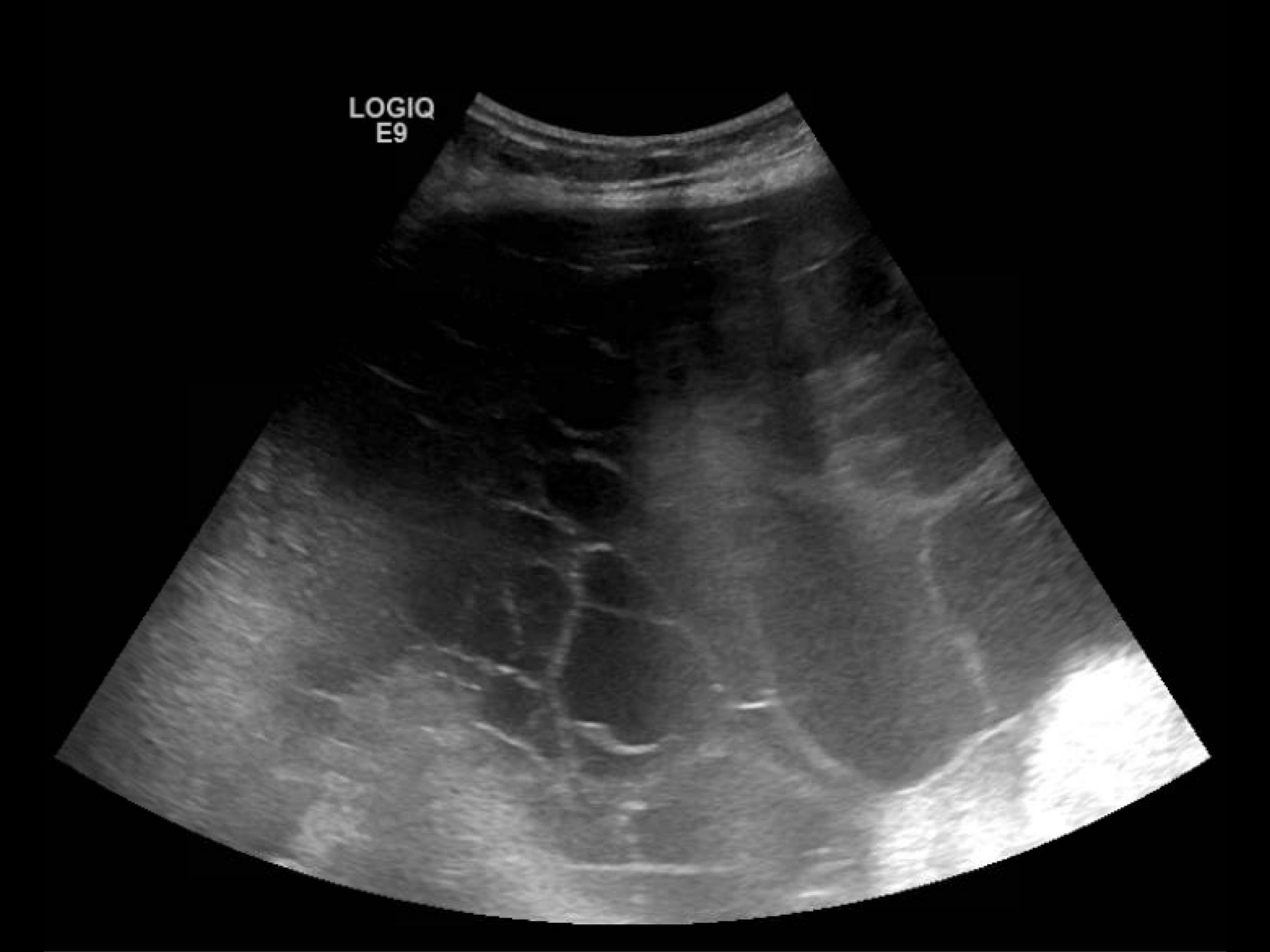
"Scattered areas of enhancement and thickening of the peritoneal lining, suggesting infectious/inflammatory ascites"

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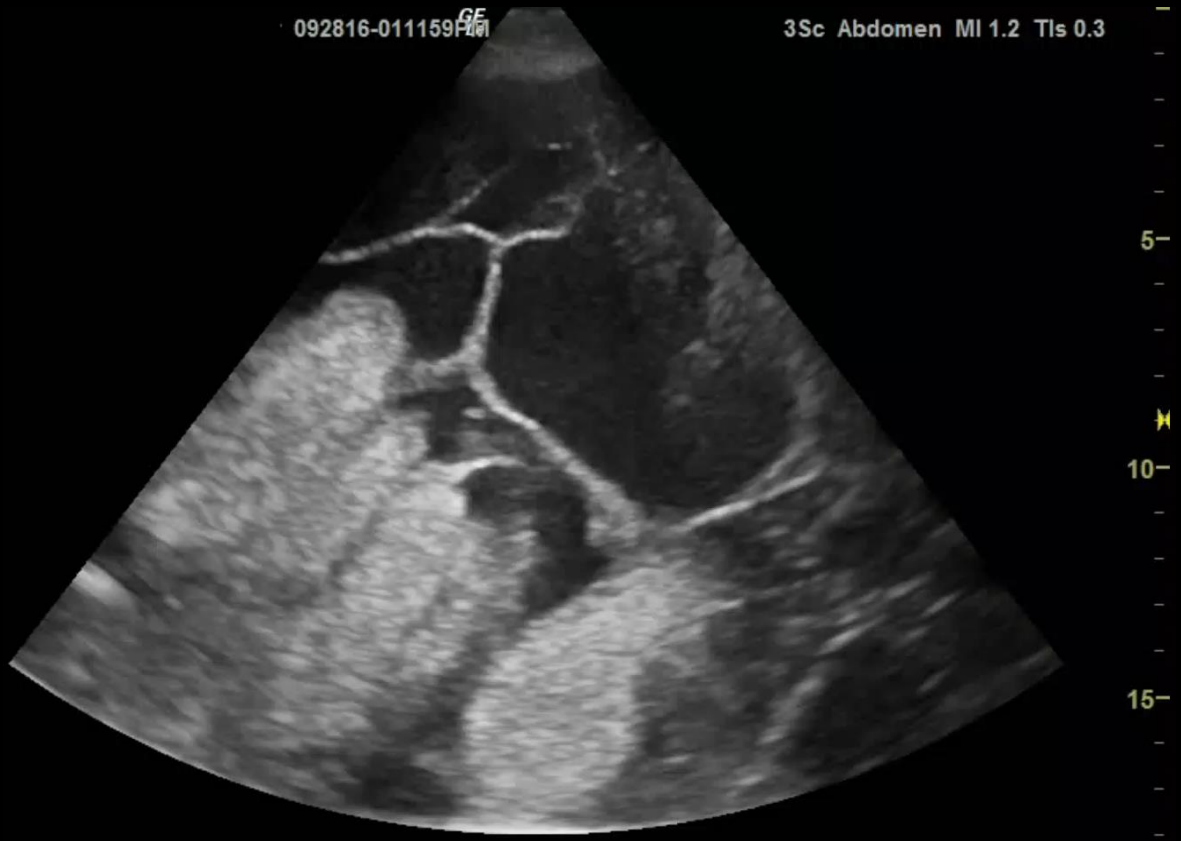
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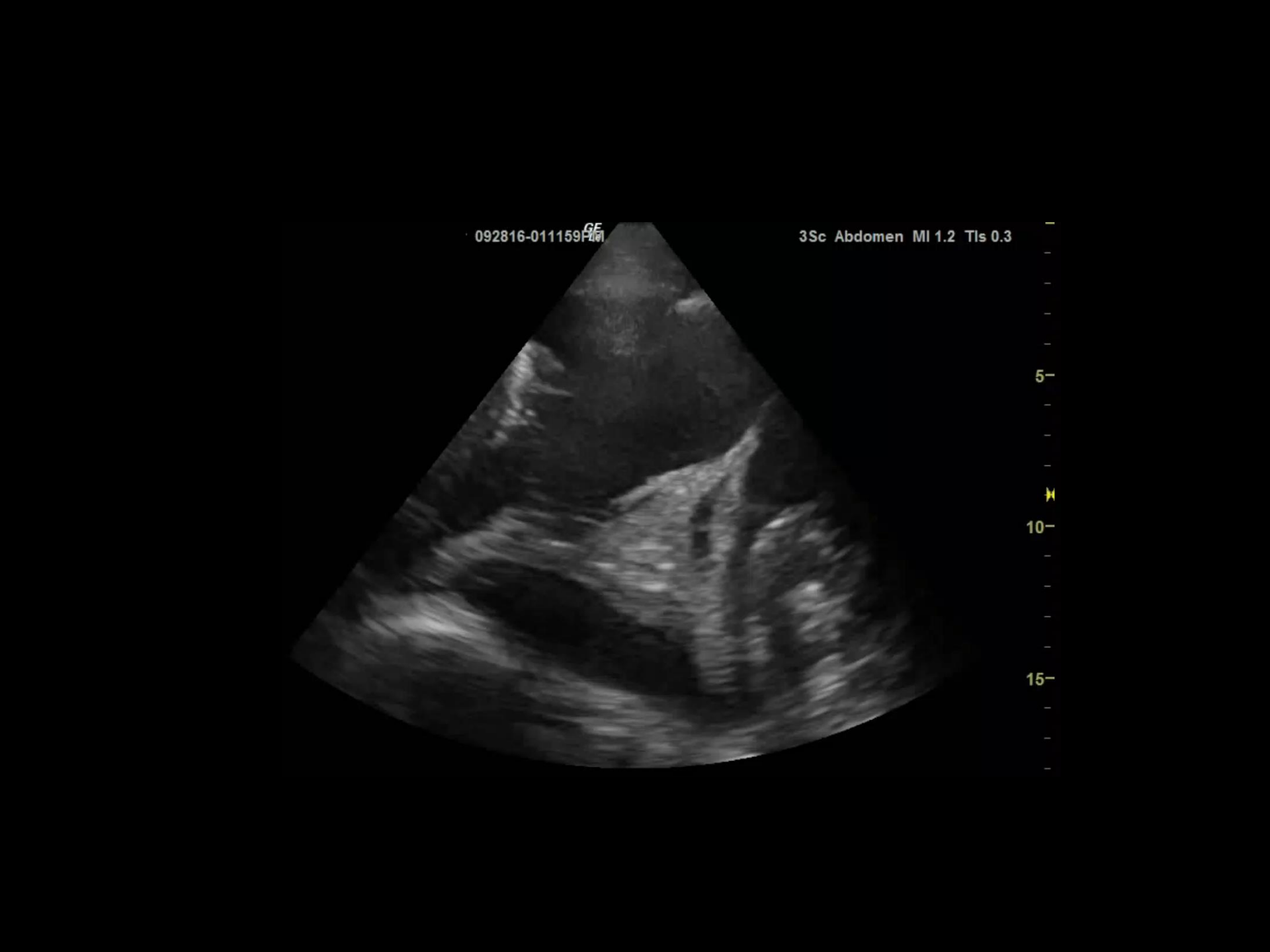
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Hospital Course

Paracentesis culture: pan-sensitive E coli

Cytopathology: negative for malignant cells

Improved after antibiotics. 3L removed at bedside and discharged to hospice without tunneled catheter.

Ultrasonic Differentiation of Types of Ascitic Fluid

Steven L. Edell[1]
and Warren B. Gefter[2]

A review of 65 cases of proven ascites was done to assess the accuracy of ultrasound in distinguishing transudates from exudates. In 10 patients with malignant ascites, ultrasound suggested this in six by showing matted bowel loops, loculation, or hepatic metastasis. In each of the five patients with peritonitis, infected ascites was suggested by observing septations or debris within the fluid. A sonographic diagnosis of exudate was not made in any of the 50 confirmed transudates. The echographic characteristics which may suggest infected or malignant ascites are discussed.

***AJR* 133:111–114, July 1979**

TABLE 1

Etiologies in Cases of Confirmed Ascites

Etiology	No. Patients
Transudates:	
Cirrhosis	42
Congestive heart failure	2
Chronic renal disease	3
Miscellaneous	3
Subtotal	50
Exudates:	
Malignancy	10
Peritonitis:	
Tuberculous	2
Pyogenic	3
Subtotal	15
Total	65

"In the 50 cases of transudative ascites, the ultrasonic findings were typical of simple fluid…evenly dispersed throughout the abdomen and bowel loops were seen to float freely within the ascitic fluid."

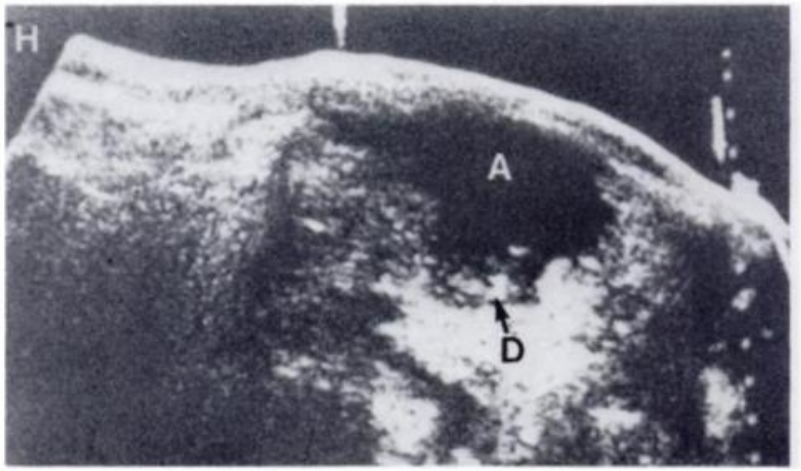
TABLE 2

Distribution of Ultrasonic Findings Among Transudative and Exudative Ascites

Ascites Pattern	Exudates		
	Infective	Neoplastic	Transudates
Atypical:			
Debris	2	0	0
Septations	3	0	0
Matted bowel loops	0	3	0
Loculated fluid	0	1	0
Hepatic metastasis	0	2	0
Typical	0	4	50
Total	5	10	50

"Two cases of exudative ascites showing small amorphous echoes within the fluid ('debris') were found to have tuberculous peritonitis."

"Three cases showing septations (interlacing bands of echoes) were each secondary to pyogenic peritonitis. Laparotamy in one such case revealed multiple fibrotic strands throughout the purulent fluid."



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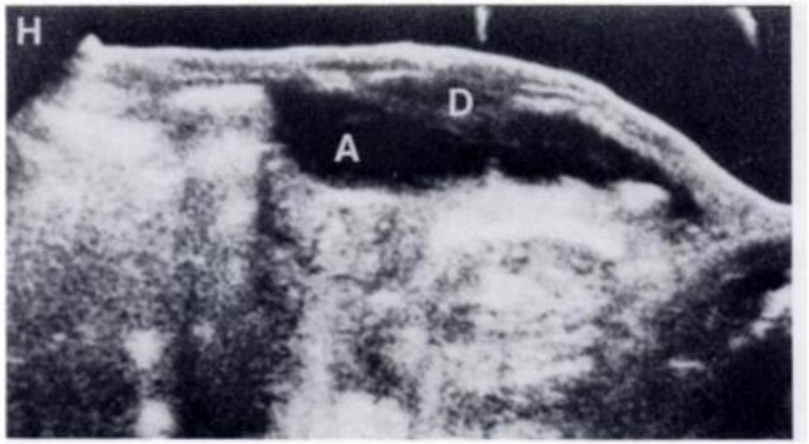

B

Fig. 2.—Right longitudinal sonograms in two patients with tuberculous peritonitis. **A**, Ascitic fluid (A) with areas of debris (D) in dependent portion. H = head, F = feet. **B**, Ascitic fluid (A) with areas of debris (D) floating in the fluid. H = head, F = feet.

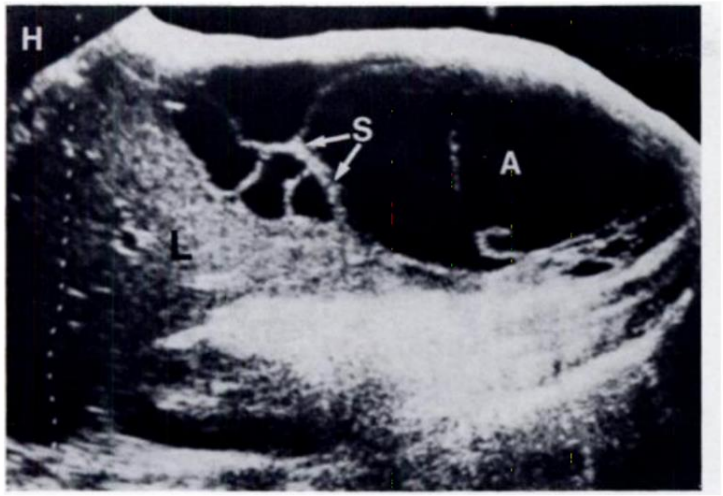

Fig. 3.—Right longitudinal sonogram in patient with pyogenic peritonitis. Numerous septations (S) within ascitic fluid (A). L = liver, H = head, F = feet.

TABLE 3

Echographic Findings in Exudative Ascites

Echographic findings	No. Patients	Diagnosis
Debris within fluid	2	Tuberculous peritonitis
Septations	3	Pyogenic peritonitis
Matted bowel loops	3	Hepatoma (2), metastasis (1)
Loculated fluid	1	Bronchogenic carcinoma, with rectal metastasis
Hepatic metastasis	2	Pancreatic carcinoma, colon carcinoma

Two weeks post-discharge: ”Large volume mildly complex ascites” with placement of 15 French tunneled drainage catheter