



Tips for a Heartbreak - Hepatic Hydropericardium Improves after Transjugular Intrahepatic Portosystemic Shunt Placement

Brendan Andres MD¹, Radhika Babaria MD², Avin Aggarwal MD²

1. University of Arizona Department of Internal Medicine, 2. University of Arizona Division of Gastroenterology and Hepatology

Introduction

- Hepatic hydropericardium (HHP) occurs in decompensated cirrhosis.
- Fistulous tracts between the peritoneal cavity and the pericardium permit the development of pericardial effusions aided by portal hypertension and hypervolemia.

Case Description

- **Patient:** 63-year-old-male with compensated non-alcoholic cirrhosis, obesity, chronic kidney disease, coronary artery disease, heart failure with preserved ejection fraction and restrictive cardiomyopathy from prior viral pericarditis complicated by pericardial effusion and tamponade
- **Surgical History:** remote coronary artery bypass graft and pericardiectomy 4 months prior to admission
- **Chief Complaint:** abdominal pain and distension
- **Physical Exam:** notable for distant heart sounds, abdominal distension with fluid wave, and anasarca
- **Imaging:** CT abdomen and pelvis revealed large volume ascites, varices, splenomegaly and a 11.3 x 3.8. 4.2 cm substernal fluid collection (Figure 1A). Transthoracic echocardiogram (TTE) showed a 2.8 cm loculated pericardial effusion with tamponade physiology and a left ventricular ejection fraction of 70% (Figure 2).

Imaging

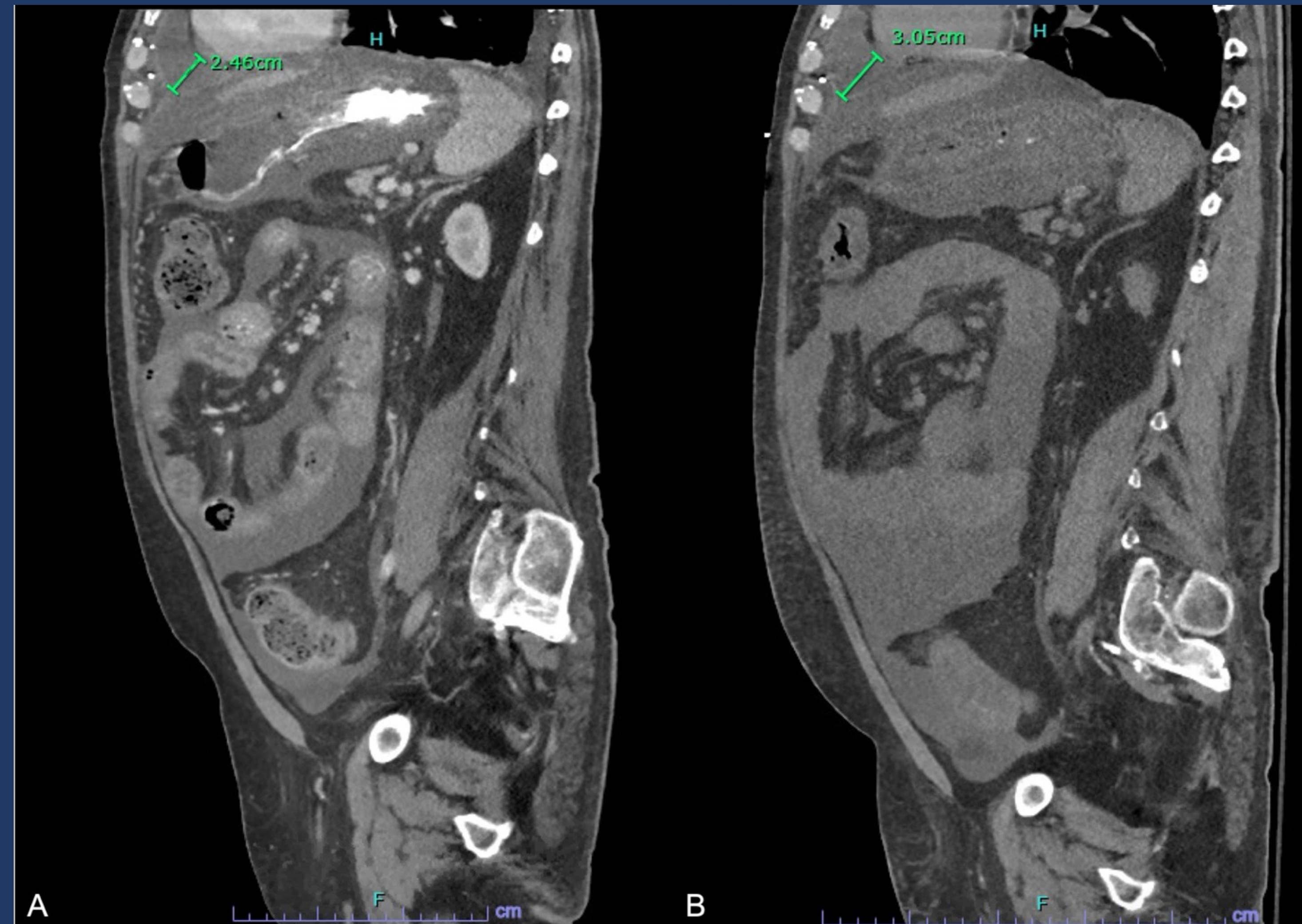


Figure 1: A) Sagittal CT demonstrating pericardial effusion prior to pericardiocentesis. B) Sagittal CT demonstrating recurrence of pericardial effusion after pericardiocentesis.

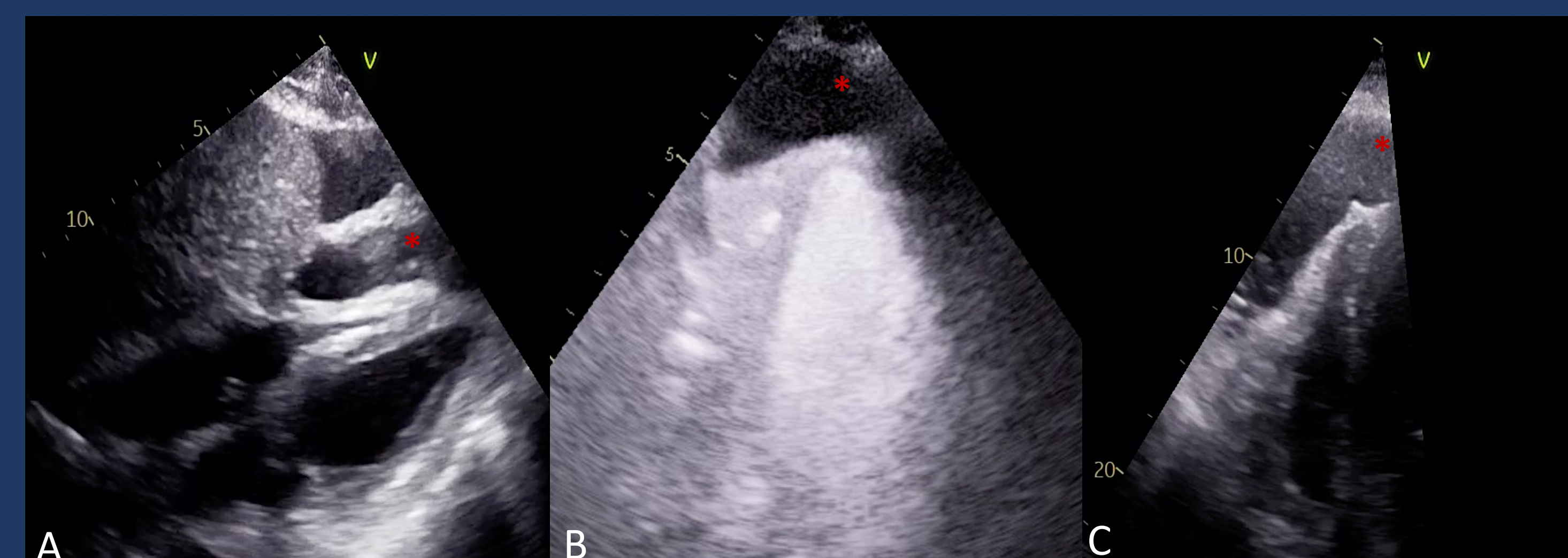


Figure 2: A) Initial TTE subxiphoid view showing the loculated anterior pericardial effusion and tamponade physiology. B) Apical four chamber view with intraventricular contrast study. C) Apical four chamber view again demonstrating tamponade physiology.

Management

- **Management:** Emergent pericardiocentesis removed 1 L of fluid, however, the bubble study to confirm syringe placement demonstrated communication between the fluid collection and the peritoneum. The fluid was transudative and sterile with protein 1.7 g/dL and albumin 1.2 g/dL which corresponded with the 5.6 L of peritoneal fluid removed during a subsequent paracentesis.
- **Follow-Up:** The pericardial effusion and ascites recurred (Figure 1B). A transjugular intrahepatic portosystemic shunt (TIPS) was placed and portosystemic pressure fell from 19 to 10 mmHg. The patient's volume status subsequently improved, and he was discharged on oral furosemide 40 mg daily and spironolactone 25 mg daily. Follow-up imaging revealed resolution of ascites and a non-tamponading 1.7 cm loculated pericardial effusion.

Discussion

- This case illustrates that HHP can be diagnosed via pericardiocentesis with bubble study and improves after TIPS placement.
- The fistula likely formed during his prior inflammatory state or after cardiothoracic surgery. The patient's cirrhosis then decompensated and HHP formed via portal hypertension.
- Loculations likely occurred due to inflammation and chronicity of effusion. This likely prevented full resolution of the HHP after TIPS placement.