Clinical Vignette: A Case of Successful Surgical Decortication for Empyema with Trapped Lung, in a Patient with Decompensated Cirrhosis

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Introduction
Hepatic hydrothorax (HH) is a difficult-to-control complication of cirrhosis. Chest tube (CT) drainage is an option for management of HH, but is associated with a high rate of secondary infection and other complications.

Clinical Case
A 35 year old male with hepatitis C cirrhosis was transferred to our hospital for management of HH. Prior to transfer, a pleurex catheter was placed because he required serial thoracenteses. At our hospital, a trial of aggressive diuresis was unsuccessful, so he underwent transjugular intrahepatic portosystemic shunt (TIPS).

CLINICAL CASE (continued)
Persistently high post-operative CT output combined with hyponatremia made it very difficult to remove his four CTs, the final CT being removed on post-op day 56. He was discharged with a plan to complete an outpatient OLT evaluation.

Unfortunately, the patient resumed using illicit drugs, precluding further consideration for OLT. He was later readmitted with renal failure, and died approximately 6 months after his initial presentation. However, his empyema was ultimately not what limited his survival.

Discussion
The initial management of hepatic hydrothorax should focus on dietary sodium restriction and medical therapy with diuretics. Serial thoracentesis is an effective method for controlling hepatic hydrothorax when medical therapy with diuretics is insufficient. For selected candidates, trans-hepatic portosystemic shunt (TIPS) placement may be an alternative to serial thoracentesis. However, not all patients are candidates for TIPS with contra-indications to the procedure including renal failure, right heart failure, and advanced liver failure with model for end-stage liver disease (MELD) score >15.

Ultimately, liver transplantation is the definitive intervention which reverses the underlying liver disease and porto-pulmonary shunting which lead to the development of hepatic hydrothorax.

CLINICAL CASE (continued)
In some cases of hepatic hydrothorax, chest tubes or pleurex catheters are placed to provide long-term access for draining the pleural fluid. The presence of an indwelling tube carries significant risks. Orman & Lok reported a retrospective analysis of patient outcomes after chest tube placement in this context, and found that 29% developed empyema as a complication. Current guidelines issued by the American Society for the Study of Liver Disease consider chest tube placement contra-indicated for the purpose of chronic management of hepatic hydrothorax. When empyema does develop as a complication of either spontaneous bacterial empyema or as a complication secondary to indwelling chest tube placement, management is challenging. Patients developing this complication by definition have advanced liver disease, which in turn places them at high risk for surgical interventions in general, and decortication in particular. Although data are limited, Chen et al reported a series of 32 cirrhotic patients undergoing thoracoscopic surgery for management of empyema, and observed mortality in 21%. Kim et al reported a smaller case series of 4 patients, with the more severe clinical presentation matching that of the case reported here, of cirrhotic patients with empyema, further complicated by trapped lung. In this case series, one of the two patients undergoing surgical decortication died.

CLINICAL CASE (continued)
This case highlights the risk of managing hepatic hydrothorax with drainage catheters. Additionally, the case demonstrates that successful surgical decortication of empyema is possible even in a decompensated cirrhotic, and this high-risk procedure may be the critical factor deciding OLT candidacy and long-term survival.

Discussion

References

Disclosures
None of the authors have any relevant disclosures to report.