# Hepatic Hydrothorax, Between a Rock and a Hard Place

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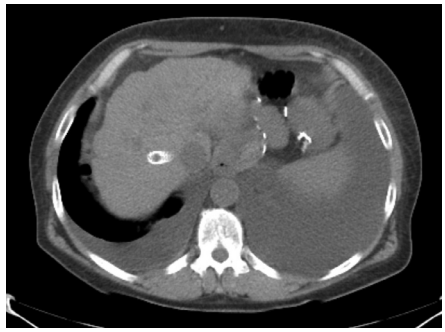
Thoracic surgeons are routinely asked to manage pleural effusions. While the vast majority are exudative in nature, such as parapneumonic or malignant effusions, occasionally we are called on to manage transudative effusions, one such being effusion associated with severe liver disease termed hepatic hydrothorax. Management of hepatic hydrothorax begins with medical therapy such as sodium restriction and diuretics. Intervention is indicated for symptomatic patients who have failed medical management which includes thoracentesis, indwelling tunneled catheter, pleurodesis, thoracoscopy, transjugular intrahepatic portosystemic shunt, and pleurovenous shunt. In a recent detailed review of the literature by Lv et al,[1] no best treatment method was identified, with all interventions having significant recurrence, complication, and mortality rates. In this current study by Shirali et al,[2] the authors evaluate the subset of patients with hepatic hydrothorax after liver transplant.

The difficulties in the treatment of hepatic hydrothorax and its association with poor prognosis has been well documented in the literature; however, there is a paucity of literature evaluating the specific subset of patients with hepatic hydrothorax after liver transplant, therein lies the value of the current study by Shirali et al.[2] The authors describe 33 patients undergoing thoracic surgical procedures for hepatic hydrothorax after liver transplantation over a 10-year period. Effusion was present prior to transplant in almost 50%. Indications for thoracic surgery included chronic effusion, empyema, and hemothorax (all of which were iatrogenic after thoracentesis or chest tube insertion for effusion). Surgical procedures performed were decortication, evacuation of empyema or hematoma, pleurodesis, pleurectomy, or a combination of these. Postoperative morbidity and 30-day mortality were high at 70% and 15%, respectively. Long-term prognosis was poor with mortality of 58% at 1 year and 70% at 5 years.

What can we conclude from this study by Shirali et al?[2] The authors define the scope of the problem very well; the article is a good description of the population, the treatment delivered, and the outcomes. With high MELD scores, immune suppression, ICU status in two-thirds of the patients, vasopressor requirements in 18% of the patients, and dialysis in 45% of the patients; the authors have clearly demonstrated how frail these patients are. The authors have also demonstrated that drainage interventions for hepatic hydrothorax are not without risks. Fourteen of the 33 patients underwent thoracic surgery for iatrogenic complications, 3 with empyema due to "seeding" from thoracentesis, and 11 with hemothorax after thoracentesis or chest tube insertion for effusion. Finally, the authors have clearly shown the short- and long-term outcomes to be poor in this cohort.

The authors have provided the readers with a good descriptive study, but unfortunately the data presented are unable to provide us with firm conclusions that can guide patient management; the small sample size and the heterogeneity of the cohort (in terms of etiology of liver failure, etiology of effusion, and treatment) do not allow for meaningful statistical analysis. Thoracic surgery is associated with poor outcomes, but is this due to the severity of illness rather than the thoracic surgical procedure itself? Given the number of iatrogenic complications, should thoracentesis and chest tube be avoided for hepatic hydrothorax unless absolutely necessary, or should these interventions be



CT scan of pretransplant patient with liver cirrhosis, transjugular intrahepatic portosystemic shunt, and bilateral pleural effusions.

**Central Message**

Patients with pleura effusions after liver transplant are difficult to manage. These are high-risk patients, and thoracic surgical intervention is associated with poor prognosis.

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Conflicts of Interest: None.

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performed early to prevent the development of the dreaded "trapped lung" (seen in 67% of this cohort)? Unfortunately, the authors do not report the denominator, that is, the number of patients who underwent successful thoracentesis/chest tube drainage (with or without intrapleural lytic therapy), thereby avoiding thoracic surgery and/or the development of the problematic "trapped lung."

Important questions regarding clinical management of the patient with hepatic hydrothorax after liver transplantation remain unanswered; however, the article by Shirali et al[2] clearly demonstrates the high-risk nature of this population and the poor prognosis after thoracic surgery. This data will have utility when counselling patients on the risks and benefits of performing thoracic surgery for symptomatic hepatic hydrothorax after liver transplant.

## REFERENCES

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2. Shirali A, Grotts J, Elashoff D, et al: Predictors of outcomes after thoracic surgery in orthotopic liver transplant recipients with pleural disease. Semin Thorac Cardiovasc Surg 31:604–611, 2019