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## Invited Commentary

### “Least favorite consult”: Invited commentary to “Fix it while you can: Mortality after umbilical hernia repair in cirrhotic patients”



For the practicing general surgeon, no problem is emblematic of the chasm between technical performance of an operation and comprehensive care of a patient than the management of an umbilical hernia in a patient with cirrhosis of the liver. The mental effort, risk, and time required for patient care are not adequately reflected in the 6.59 wRVUs assigned by the AMA Relative Value Update Committee.<sup>1</sup> Referring primary care and emergency physicians have no idea the mental anguish of the surgeon:

Do I attempt to repair the hernia, and accept the risk of a permanent or fatal complication?

Do I leave the hernia alone? What if it becomes an emergency later? What is the best way to manage this problem in this particular patient?

There are a number of tools that a surgeon can use to help predict the risk in a cirrhotic patient, including risk calculators that specifically look at post-operative mortality in patients with cirrhosis<sup>2</sup> but none so accurate as to definitively tell for certain the outcome for any one patient. Dr. Hill and colleagues at the University of Texas at Austin have performed a database review that adds to our knowledge of the possible outcomes for these patients that undergo surgery.<sup>3</sup> Querying the National Inpatient Sample (NIS), the authors identified 899 patients with cirrhosis who underwent umbilical hernia repair (UHR) and compared these patients with 31,627 patients without cirrhosis who also underwent UHR. They further classified patients into categories of compensated or decompensated cirrhosis based on the presence of ascites or encephalopathy.

The study found that in the elective setting, length of stay and charges were higher in the decompensated cirrhotics compared to the compensated cirrhotics and noncirrhotic patients, and that mortality also trended higher. In the emergent setting, mortality and charges (presumably morbidity) were statistically higher for both the compensated and decompensated cirrhotic patients. In short, both advanced cirrhosis and emergent repair resulted in worse outcomes.

The conclusion of the study is consistent with earlier studies on the subject, that worsening cirrhosis is associated with poorer outcomes in umbilical hernia repairs. Saleh et al. identified MELD score, albumin level, WBC count and platelet count to be predictors

of mortality for umbilical hernia repair, in a NSQIP analysis.<sup>4</sup> Their nomogram showed an increase in mortality as MELD scores exceeded 12. In another study, Cho, et al. found from NSQIP that for patients with MELD scores higher than 15, 30-day mortality was 5.1% and did not differ for elective and emergent repairs.<sup>5</sup> They concluded that elective repair should be done in patients with MELD less than 15, but avoided otherwise. In the invited commentary, Wong suggested that those patients should be managed by transplant surgeons.<sup>6</sup>

Limitations of this study are recognized by the authors. The NIS database is large but is limited to inpatients; it does not capture the majority of UHR's done as outpatient surgery. The NIS follow-up is limited to the index hospitalization and 30-day peri-operative period; it does not capture readmissions or late mortality. The “control” group with an elective LOS of 6 days was certainly not a healthy population. The severity of cirrhosis is defined by only two factors. Recurrence of hernia cannot be addressed from the NIS. Technical aspects of the repair are not known.

With these limitations, outcomes of UHR among cirrhotics still achieve statistical significance that is consistent with other research – that is: fixing an umbilical hernia electively in a compensated cirrhotic patient results in significantly less morbidity and mortality than waiting until the cirrhosis becomes decompensated or the hernia repair becomes emergent. “Fix it while you can” seems a rational strategy.

#### Declaration of competing interest

Neither author has any conflict of interest.

#### References

1. AMA/Specialty Society RVS Update Committee Database. Copyright 2019 American Medical Association
2. <https://www.mayoclinic.org/medical-professionals/transplant-medicine/calculators/post-operative-mortality-risk-in-patients-with-cirrhosis/itt-20434721>.
3. Hill, et al. Fix it while you can: mortality after umbilical hernia repair in cirrhotic patients. *Am J Surg*. 2020 (in press).
4. Saleh F, Okrainec A, Cleary SP, Jackson TD. Management of umbilical hernias in

- patients with ascites: development of a nomogram to predict mortality. *Am J Surg.* 2015;209(2):302–307.
5. Cho SW, Bhayani N, Newell P, et al. Umbilical hernia repair in patients with signs of portal hypertension: surgical outcome and predictors of mortality. *Arch Surg.* 2012;147(9):864–869.
  6. Wong LL. Should a patient with cirrhosis have an innie or an outie? *Arch Surg.* 2012;147(9):869–870.

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