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## Commentary: Expeditious treatment of pericardial herniation after blunt trauma

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In their report, LeBlanc and Tan<sup>1</sup> describe a unique case of a young man with a pleuropericardial rupture with subsequent herniation of the heart into the right chest following a motor vehicle collision. Through the heroic efforts of the team at the initial stabilizing emergency department and the trauma center physicians who ultimately received and saved the patient, the physiologic reserve of a young person, and a little good fortune, a patient with injuries that typically are fatal at the scene survived to discharge.

Most remarkable about the entire scenario is that the patient survived from time of injury to surgical correction—approximately 4 hours—and for this the resuscitative efforts at the original emergency department should be commended. Upon transfer to the receiving facility's operating room, as addressed by the authors, the choice of exposure was via a left-sided anterolateral thoracotomy converted into a clamshell thoracotomy. The textbook answer for a patient with continuing hemodynamic instability and ongoing blood loss from the left chest. The point worth debating here is the authors' decision to use a synthetic mesh, not fenestrated but with large-enough gaps between the sutures to allow for fluid to escape. Their choice ultimately proved to be adequate and satisfactory, but one must wonder if a biologic mesh or an absorbable would have been a safer choice. Although the patient had blunt and not penetrating injuries, he had a chest tube

### CENTRAL MESSAGE

Through the efforts of multiple medical teams, a patient survives an extraordinary and often quickly fatal injury.

placed at an outside facility under the semisterile conditions of the trauma bay and then underwent transport before ultimately undergoing his lifesaving operation. The best place to look for similar reconstructions would be in patients who have undergone extrapleural pneumonectomies for malignant pleural mesothelioma, where both synthetic and biologic meshes have been used for reconstruction, albeit under more sterile and controlled conditions.<sup>2</sup> Many surgeons in a scenario such as this would also choose to fenestrate the patch to reduce the risk of pericardial tamponade, and this problem was clearly on the authors' mind based on their choice of suture placement. No randomized study will ever be properly powered to answer questions like these, so we must rely on cases such as the one described by LeBlanc and Tan to help guide us through unusual scenarios.

From a management perspective, it also would have been preferable if the authors had included more discussion on their decision making regarding postoperative monitoring for this patient because blunt cardiac injury (BCI) is a controversial management topic and was certainly a consideration in this patient. For example, a review by Yousef and colleagues<sup>3</sup> found that in autopsy findings of 303 patients who died with blunt cardiac injuries, 108 had pericardial tears (36%). In the 2012 Eastern Association for the Surgery of Trauma guidelines for management of BCI, the only level-1 evidence is for an electrocardiogram at the time of presentation if BCI is suspected, with only level-2 evidence for echocardiogram for patients with hemodynamic instability or persistent new arrhythmia, and level-3 evidence for serial troponins.<sup>4</sup> Were postoperative beta blockers used for this patient? If not, should they have been?

We congratulate the authors on a good save!

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