Commentary: The unclosable chest—When going negative is positive and can bring closure: Negative-pressure wound therapy

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Central Message

Large experience with postoperative open chest showed NPWT had less bleeding and improved survival. Included are how-to subtleties. Readers are encouraged to be familiar with this expanded NPWT use.

See Article page 1891.

In this issue of the *Journal*, Pettersson and colleagues¹ retrospectively review their sizeable (452 patients) institutional experience during 15 years with 2 different strategies for open-chest management after cardiectomy in patients with high-risk preoperative profiles, both for hemodynamic instability and for bleeding. Open-chest management was needed in fewer than 1% of the patients operated on during this time frame. Standard closure barrier techniques were compared with negative-pressure wound therapy (NPWT). This is an observational study spanning 1.5 decades, so confounders exist; however, analysis with propensity-score matching yields actionable conclusions. Although it may seem counterintuitive to increase suction on a bleeding open chest with fresh vascular anastomoses, NPWT became the treatment of choice during this time frame, with less bleeding and improved 6-month survival; there was also a trend toward less infectious complications.

Key nuances of this management nicely included by Pettersson and colleagues¹ are how to position and protect structures, how to use a lower pressure setting (−25 to −75 mm Hg), and detailed descriptors for emergency intensive care unit chest reexploration, including their emergency response setup. A trigger for reexploration also included when negative pressure was no longer able to keep the sponge vacuum compressed. Images are instructive; the reusable temporary sternal separator appears superbly designed, with safety and ease of placement.

This is a highly useful and practical reference for the dreaded need to keep the chest open, usually after a longer, complex procedure. Cardiothoracic surgeons are encouraged to familiarize themselves with this option and the included instructive images before the (frequently late nocturnal) need.

Pettersson and colleagues¹ are to be commended for analyzing outcomes and strategies demonstrating care improvement in the patient with a postcardiotomy open chest and for sharing management details evolved in this learning curve at their quaternary referral center.

Reference

1. Bakaeen FG, Haddad O, Ibrahim M, Pasadyn SR, Germano E, Mok S, et al. Advances in managing the noninfected open chest after cardiac surgery: negative-pressure wound therapy. *J Thorac Cardiovasc Surg*. 2019;157:1891-903.e9.