

The authors reported no conflicts of interest.

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before we can tackle issue of “how to BIMA,” there must be a wider acceptance of BIMA use among the contemporary cardiothoracic surgeons to be able to clearly define the value of BIMA grafting for our patients, regardless of the specific surgical technique. Thus, the decision of whether or not use the BIMA strategy based on the voluminous supportive observational data in the absence of randomized data and recognizing the possible increased risk of deep sternal wound complications will, for the foreseeable future, remain as “the question” for the cardiothoracic surgeon of today.

Thomas A. Schwann, MD, MBA^a

Mario F. L. Gaudino, MD^b

^aDepartment of Surgery

University of Massachusetts-Baystate
Springfield, Mass

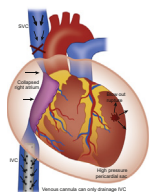
^bDepartment of Cardiothoracic Surgery

Weill-Cornell Medical College
New York, NY

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IS PREOPERATIVE



EXTRACORPOREAL MEMBRANE OXYGENATION EFFECTIVE FOR COLLAPSED PATIENTS WITH LEFT

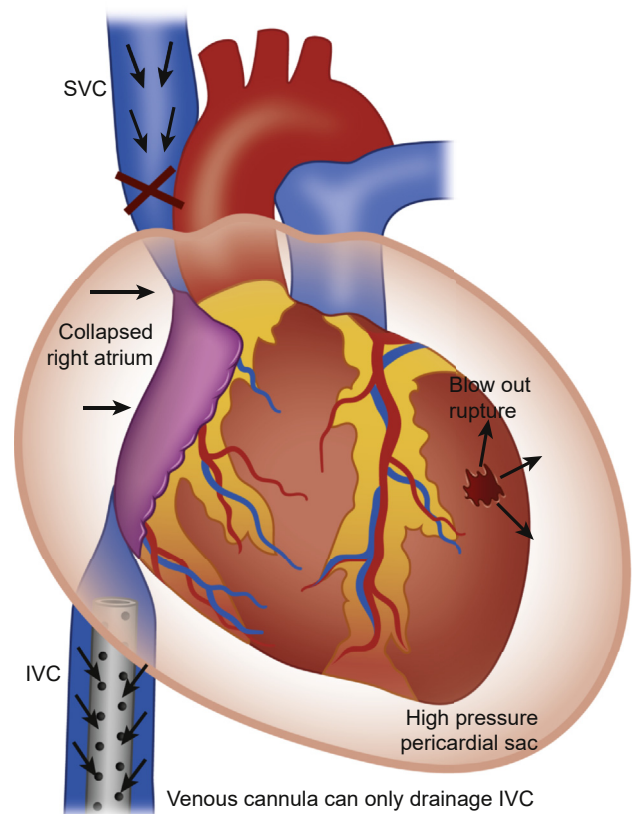


FIGURE 1. Extracorporeal membrane oxygenation might be invalid for brain resuscitation in collapsed patients with blow-out ruptures. SVC, Superior vena cava; IVC, inferior vena cava.

VENTRICULAR FREE WALL RUPTURE AFTER MYOCARDIAL INFARCTION?

To the Editor:

Left ventricular free wall rupture (LVFWR) is a rare but serious complication of acute myocardial infarction. Okamura and colleagues¹ reported good results using a suture-less repair technique and later discussed some points with Formica and colleagues.² These discussions were constructive and interesting, but 2 doubts arose in my mind.

The first point is about preoperative extracorporeal membrane oxygenation (ECMO) support. In the letters to the editor, Formica and colleagues² advocated greater use of ECMO (34.3%) than Okamura and colleagues¹ (11.4%) and emphasized the importance of preoperative ECMO for patients with cardiac tamponade or cardiac arrest. Okamura and colleagues³ agreed and explained the reason for their lower ECMO usage rate as a lower incidence of blow-out ruptures in their cohort. Many textbooks recommend that ECMO should be established as soon as possible in patients with blow-out rupture.⁴ However, Formica and colleagues⁵ said in their original paper in 2017, “Six of the 8 non-survivors

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supported with ECMO died from brain death” and “the results of this study did not provide any evidence to support any benefit of perioperative ECMO on in-hospital survival.”

The pathophysiology of cardiac tamponade is that increased intrapericardial pressure disturbs the diastole of cardiac chambers and venous return to the right atrium. As a result, venous pressure rises significantly. Not only low cardiac output but also high venous pressure lowers the systemic perfusion pressure, which is described as arterial pressure minus venous pressure. Cerebral perfusion pressure also decreases. If ECMO is started, placing a venous cannula from the femoral vein can only drain the inferior vena cava vein. Pressure on the superior vena cava vein may be consistently high, cerebral perfusion pressure remains low, and blood flow from ECMO via the femoral artery might perfuse the lower body. ECMO might be invalid for brain resuscitation (Figure 1). In my opinion, the high priority and sole treatment for collapsed patients with cardiac tamponade is to drain the pericardial hemorrhage and lower the venous pressure rather than ECMO. There is no clinical evidence or experimental data supporting this theoretical idea. However, we believe it is better to accept the data from the paper of Formica and colleagues, which represents the ineffectiveness of ECMO in such situations.

The second point is the classification of LVFWR. LVFWR has been historically classified into blow-out and oozing types. However, we often observe that bleeding from the left ventricle ceases (seals) spontaneously after pericardial drainage (Table 1). Decreased blood pressure due to cardiac tamponade may be the cause. Okamura and

TABLE 1. Classification of left ventricular free wall rupture after myocardial infarction

Author	Okamura et al ¹	Formica et al ²	(Our data)
Study period	2001-2016	2000-2016	2000-2020
Number of patients	35	35	36
Classification			
Blow out	2	16	11
Oozing	33	19	4
Sealed	0	0	21

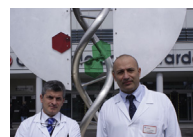
Formica and colleagues classified all of their patients as blow-out or oozing types. Judging from their intraoperative images, they might have categorized sealed ruptures as oozing ruptures. We think it is better to classify LVFWR into 3 groups: blow-out ruptures, oozing ruptures, and sealed ruptures. Distinguishing sealed ruptures from oozing ruptures is crucially important to compare the operative results of different surgical techniques, such as suture repair and suture-less repair.

Keiji Uchida, MD, PhD
Shota Yasuda, MD, PhD
Munetaka Masuda, MD, PhD
Cardiovascular Center
Yokohama City University Medical Center
Yokohama, Japan

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REPLY: I WOULD NOT UNDERESTIMATE THE EXTRACORPOREAL MEMBRANE OXYGENATION OPTION; IT OFFERS CHANCES OF SURVIVAL



Reply to the Editor:

We read with great interest the letter by Uchida and colleagues¹ regarding the efficacy of preoperative extracorporeal membrane oxygenation (ECMO) in patients suffering from left ventricular free wall rupture (LVFWR) following acute myocardial infarction. In their letter to the editor, the authors discussed some points highlighted in the study by Okamura and colleagues² and in our letter to the editor.³ First, the authors have stated some concern regarding the use and efficacy of preoperative ECMO in patients with cardiac arrest, and second they proposed to classify the LVFWR into 3 groups: blow-out ruptures, oozing ruptures, and sealed rupture.