technique and good myocardial protection. The latter avoids scenarios in which myocardial dysfunction secondary to poor myocardial protection is confused with active ongoing ischemia related to coronary obstruction. Intraoperative tools such as transit time flow measurement and on the table fluorescence imaging are useful quality control adjuncts.

In conclusion, the incidence of PCSMI is low, but vigilance is recommended to ensure timely diagnosis and management. Thorough case knowledge and sound clinical judgment are crucial in guiding decision-making and optimizing outcomes.

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Commentary: Chase perfection to catch excellence

William L. Holman, MD, and James E. Davies, MD

The title of this commentary comes from an aphorism attributed to Vince Lombardi (Green Bay Packers coach, 1959-1967) who said, "Perfection is not attainable, but if we chase perfection we can catch excellence." In the present manuscript,¹ the authors make a strong case for the urgent diagnosis and management of perioperative

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CENTRAL MESSAGE

Prompt diagnosis and treatment of perioperative myocardial ischemia (PMI) is crucial for obtaining the best patient outcomes. Coronary angiography should not be delayed in patients with PMI.

myocardial ischemia (PMI) to improve short- and long-term outcomes.

Outcomes for cardiac operations have improved over the past decades. However, surgeons rarely achieve perfection, as defined by restoring a normal life expectancy. Heart disease itself is the most important factor limiting survival. However, 2 additional reasons for falling short of perfection are

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perioperative mortality and diminished long-term survival due to PMI. The authors raise 3 important points about PMI in this paper.

First, the authors define PMI, which is foundational to their discussion. Diagnosing PMI may be straightforward (eg, a patient who acutely develops hypotension and new ST-segment changes after arriving in the intensive care unit), but PMI often presents as a subtle combination of signs and symptoms. Based on information from papers cited in the present manuscript, Robinson and colleagues advocate for promptly diagnosing PMI with electrocardiogram, echocardiography, and coronary angiography. Reluctance to move a patient from the intensive care unit to the catheterization laboratory for coronary angiography “should be strongly resisted” in authors’ opinion.¹

Second, after establishing a diagnosis and mechanism for PMI, the authors outline remedies to alleviate the ischemia and not merely support the circulation. Remedies include interventions in the catheterization laboratory or in the operating room. The authors note that patients requiring reoperation rather than a percutaneous coronary intervention have substantial risk for in-hospital mortality. However, they and others² point out that patients requiring reoperation are an inherently high-risk group, and meaningful statistical comparison with other patients with PMI is challenging because there is no credible control group.

Third, the authors made important comments regarding the role of mechanical circulatory support for patients with PMI. For instance, “mechanical circulatory support should only be used as an adjunct rather than as a primary treatment.”¹ Glenn Pennington, at the time a surgeon at St Louis University Hospital, taught me (W.L.H.) that mechanical support in the setting of a failed operation is futile if the goal was myocardial recovery. This lesson still pertains. The operation must be a success if the goal of mechanical support, especially with a ventricular assist device or extracorporeal membrane oxygenation, is myocardial recovery. Operative success requires the prompt recognition and treatment of PMI.

The surgeon and other heart team members must pursue perfection. The team may not attain perfection, but excellence defined as survival of the patient with the best possible myocardial function is achievable.

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