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Commentary: Let's start again!

Antonio Miceli, MD, PhD

Left ventricular aneurysm (LVA) is a late mechanical complication of myocardial infarction and is defined as an area of systolic dyskinesia with paradoxical bulging.¹ The incidence of this complication is less than in the past (10%-35%) and currently affects approximately 5% of all patients with transmural myocardial infarction.² This is probably the result of aggressive postischemic treatments, including percutaneous coronary intervention, angiotensin-converting enzyme inhibitors, and other medical therapies for advanced heart failure. LVA is often associated with arrhythmia, poor ejection fraction, and heart failure, and if left untreated, it is associated with poor survival at 5 years.³ Several left ventricular reconstruction techniques have been developed with the aim of restoring the left ventricular volume and shape, and encouraging results have been reported.⁴ Nevertheless, the number of these procedures has dramatically decreased in the last decade. Many factors such as early percutaneous treatment, surgical complexity, and poor long-term outcomes may have contributed to this decline. Most important, the Surgical Treatment of Ischemic Heart Failure trial failed to show any improvement in survival or ventricular function of adding surgical valve replacement (SVR) to coronary artery grafting in patients with left ventricular ejection fraction less than 35% and dominant anterior asynergy, although SVR achieved greater left ventricular end-systolic volume index reduction (19% vs 6%).⁵ A major criticism on this trial was the inadequate volume reduction, which left the patients in the 2 arms at the identical risk. In an insight of the Surgical Treatment of Ischemic Heart Failure trial, Michler and colleagues⁶ identified a 30% volume reduction threshold for better survival. In the current issue of the *Journal*, Stefanelli and colleagues⁷ add evidence on the



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In the next years, more patients will be referred for SVR as an indirect effect of COVID-19 for untreated myocardial infarction.

importance of performing a left ventricular volume reduction greater than 35% for survival benefits. Better long-term results were reached in those patients receiving the modified SVR technique compared with the Dor technique. According to the authors, the preservation of left ventricular diastolic function without the use of circumference pure strings and pericardial patch, and the restoration of the elliptic geometry represent the key of success of this procedure. Overall early mortality was 1.6%, much lower than others with an overall survival of 68% at 5 years and 41% at 10 years.⁴ Nevertheless, the small sample size (represented by few patients at risk in Kaplan–Meier curve) and the inclusion of mitral valve treatment (potential impact on survival) represent major limits. In addition, this is a single surgeon experience, which may not be reproducible in other hands. Despite these limits, the authors present excellent timing in publishing this article. In my opinion, more SVR procedures will be performed in the next years. Data collected during the coronavirus disease 2019 (COVID-19) pandemic have shown an important reduction rate of hospital admission for acute coronary syndrome, especially after lockdown.^{8,9} It is likely that patients avoid cardiovascular evaluation out of the fear of contracting COVID-19 in hospitals. As a consequence, LVA, ischemic mitral regurgitation, and heart failure will surge in the next years. The authors have demonstrated that LVA is safe and associated with early and long-term outcomes. Although the incidence of LVA has decreased over the time, in the next years more patients will be referred for SVR as an indirect effect of

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Disclosures: The authors reported no conflicts of interest.

The *Journal* policy requires editors and reviewers to disclose conflicts of interest and to decline handling or reviewing manuscripts for which they may have a conflict of interest. The editors and reviewers of this article have no conflicts of interest.

Received for publication May 12, 2020; revisions received May 12, 2020; accepted for publication May 12, 2020; available ahead of print May 27, 2020.

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J Thorac Cardiovasc Surg 2022;163:1068-9

0022-5223/\$36.00

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<https://doi.org/10.1016/j.jtcvs.2020.05.047>

COVID-19 for untreated myocardial infarction. We have to prepare. Let's start again!

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Commentary: Keys to surgical success: "Thinking outside the operating room?"

Ulrich Schneider, MD, and Torsten Doenst, MD, PhD

WHAT DOES IT TAKE TO GENERATE EXCELLENT RESULTS IN CARDIAC SURGERY?

Stefanelli and colleagues¹ present outstanding results in this issue of the *Journal* for a controversial surgical technique, surgical ventricular restoration (SVR). How is that possible? The manuscript may appear as a perfect example to illustrate that cardiac surgery requires more than manual dexterity, it requires thinking, in and outside, the operating room (OR).

Cardiac surgery has developed a plethora of reproducible surgical procedures with at times tremendous symptomatic as well as prognostic relevance. Nevertheless, some

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Disclosures: The authors reported no conflicts of interest.

The *Journal* policy requires editors and reviewers to disclose conflicts of interest and to decline handling or reviewing manuscripts for which they may have a conflict of interest. The editors and reviewers of this article have no conflicts of interest.

Received for publication May 6, 2020; revisions received May 6, 2020; accepted for publication May 11, 2020; available ahead of print May 25, 2020.

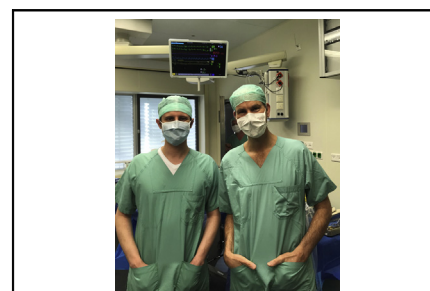
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J Thorac Cardiovasc Surg 2022;163:1069-70

0022-5223/\$36.00

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<https://doi.org/10.1016/j.jtcvs.2020.05.036>



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CENTRAL MESSAGE

Success in cardiac surgery today requires more than gifted hands in the operating room. It is an interplay of many details in and outside of the operating room.

strategies remain a matter of debate, such as SVR. The Surgical Treatment for Ischemic Heart Failure (STICH) trial² demonstrated improved survival of coronary artery bypass grafting in ischemic cardiomyopathy compared with medical therapy whereas adding SVR to coronary artery bypass grafting led to no further improvement.³ Consequently, SVR almost disappeared from the ORs worldwide. Nonetheless, with a cardiac survival probability of only 50% to 60% at 10 years, prognosis remains dismal regardless of the specific treatment.²

In contrast, Stefanelli and colleagues¹ achieved an impressive 1.6% 30-day-mortality and cardiac survival of approximately 70% at 10 years (up to 90% for ejection