or functional mitral valve disease is decreased cardiac output, which is compensated for by left ventricular dilatation. Both mechanisms are responsible for the symptoms. This approach was confirmed by Coutinho and colleagues¹ (left atrial diameter, 52.3 ± 8.7 vs 60.6 ± 9.4 mm; $P < .0001$; left ventricular end-diastolic dimension, 65.8 ± 9.6 vs 58.5 ± 8.3 mm; $P < .0001$; left ventricular end-systolic dimension, 46.1 ± 9.3 vs 37.8 ± 8.3 mm; $P < .0001$; and mean pulmonary arterial systolic pressure, 53.1 ± 16.7 vs 60.9 ± 17.1 mm Hg; $P = .004$). In addition, the preserved left ventricular functions were demonstrated in the mitral replacement group (shortening fraction $30.2\% \pm 8.0\%$ vs $35.5\% \pm 8.5\%$; $P < .000$).¹

When degenerative and functional mitral valve disease subgroups were compared between the mitral valve repair and mitral replacement groups in terms of cumulative patient survival, a statistically significant difference would have been detected. This situation was shown by Coutinho and colleagues¹ in their Figure 1, C. In a prospective study including patients with degenerative etiology, a better positive remodeling was observed by Pandis and coworkers² in their repair group versus their replacement group.² A retrospective study including 439 patients by Athanassopoulos and associates³ indicated that when mitral regurgitation remained untreated surgically until left ventricular diameter were moderately to severely abnormal or the left atrium was moderately or severely dilated, successful reverse remodeling became less likely.

In conclusion, we speculate that had major valve-related adverse events been neglected, better survival would have been observed in the mitral replacement group because of better preserved left ventricular functions and dimensions. Likewise, if inadequate left ventricular reverse remodeling were neglected, better

survival would have been observed in the mitral valve repair group. Finally, adding major valve-related adverse events and inadequate left ventricular reverse remodeling to the calculation equalized the overall survival between the two groups.

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Reply to the Editor:

We thank Tavlasoglu and co-workers for the contribution of their letter to the interesting discussion about the decision to replace or repair the mitral valve in double valve surgery (aortic and mitral). Despite the existence of a significant number of reports in the literature dealing with concomitant aortic and mitral valve surgery, few have directly addressed this question. Some would argue that if the aortic valve needs replacement with a prosthesis, an additional mitral prosthesis should not alter the outcome significantly.

One landmark study that approached this subject in a methodical way for the first time was published by the Cleveland Clinic group¹; however, there were differences between their study population and our own,² namely the prevalence of rheumatic disease, which would cause one to expect different results. In the Cleveland Clinic study, 70% of the mitral valves had rheumatic involvement, whereas nearly two-thirds of our patients had secondary (functional) or degenerative mitral disease. Our population is more consistent with the current daily practice in Western countries, because rheumatic etiology is declining. Furthermore, secondary (nonischemic and non-dilated cardiomyopathy) mitral regurgitation in the context of aortic valve disease is gaining importance,³ because patients are increasingly older, and moderate or moderate-to-severe mitral regurgitation is frequently found. It is thus important to know the outcome (survival and event-free survival) after repair or replacement of the mitral valve.

One major limitation of our study was the heterogeneity of the population; the groups (repair vs replacement) were very different with regard to important variables.

Naturally, the decision to repair or to replace was influenced by the characteristics of the patient and of the valve, and a repair was preferred whenever possible, which may have created a bias. This was the rationale for performing propensity score matching to obtain more similar groups for comparison, a well-known and accepted statistical method for this type of analysis. Relevant demographic, patient, and echocardiographic characteristics, including mitral valve pathology, were included in the propensity score analysis.

We could not demonstrate a clear survival benefit in the repair group, but we can also hypothesize as to reasons for this fact. First all, we recognize that we unfortunately do not yet have a long follow-up time (up to 12.5 years, mean 5.4 years), and we believe that a longer study might have shown evidence of that advantage. Second, the small number of patients subjected to comparison may have also influenced the analysis. We have to acknowledge, however, the possibility that there is simply no survival benefit associated with repairing the mitral valve. Nevertheless, mitral valve repair showed advantage in patients older than 65 years ($P = .017$) and for nonrheumatic etiology ($P = .034$). A very recent article from Gaur and colleagues,⁴ due to be published in this Journal, supports our finding, stating that “elderly patients with mitral regurgitation who undergo MVP [repair] have better postoperative outcomes, lower operative mortality, and improved long-term survival than those undergoing MVR [replacement].” Regarding the latter, we intuitively believe that it is better to repair than to replace a degenerative mitral valve, because there is enough evidence accumulated in the literature favoring that approach.⁵

Our study implies some important take-home messages. First, double valve surgery can be performed with low mortality (nearly 1%), whether repairing or replacing the

mitral valve. Second, major adverse valve events are more common with mitral replacement. Third, there was only a survival advantage in repair for older patients with nonrheumatic valves. Overall, we believe that mitral valve repair is the best option in the setting of concomitant aortic valve replacement.

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CONVERSION FROM PERCUTANEOUS VENOARTERIAL EXTRACORPOREAL MEMBRANE OXYGENATION ACCESS TO A PERIPHERAL ARTERIAL CANNULATION: IS IT SAFE?

To the Editor:

We read with interest the elegant article by Demertzis and Carrel¹ dealing with the technical approach of peripheral cannulation of

extracorporeal membrane oxygenation (ECMO). Indeed, the considerable renewed interest in and accumulating evidence for the use of ECMO during the last few years is likely attributable to the observed improvements in extracorporeal technology.

Since 2005, when Leprince and co-workers² published the first series of ECMO cases, the most significant benefit of ECMO has been observed in the setting of cardiogenic shock related to myocardial infarction or to end-stage chronic heart failure. In this setting and for this type of patient, diminishing the time between the initiation of shock and the start of circulatory assistance becomes the main concern of the surgical staff. In this context, the cannulation of the ECMO device through a percutaneous technique has become a trendy approach to gain time. Unfortunately, we have forgotten that these patients may have peripheral arterial diseases and a consequent high incidence of calcified arteries, a situation that makes the use of the percutaneous technique much less indicated.

Demertzis and Carrel¹ have described a very attractive surgical technique to convert a percutaneous technique into an open access one. In this regard, we have some comments.

The most important drawback of the use of femoral artery prostheses is the risk of infection, in particular for patients waiting for a heart transplant or for LVAD implantation. On the other hand, during the last few years the most useful technique has been the Seldinger technique following a surgical incision with a reperfusion cannula placed in the superficial femoral artery. The current procedure is a way of avoiding any hazardous puncture, particularly in the case of patients with low flow and low pulsatility or cardiac arrest. Moreover, this practice also allows the visualization of the vascular insertion of the cannula, a situation that is