

Commentary: The gift of life—With a price



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Central Message

As the results of solid organ transplantation continue to improve, an increasing cohort of patients survive to develop ischemic or valvular heart disease. Surgery can be performed with acceptable outcomes.

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For patients with end-stage organ disease, transplantation is often the best—and sometimes the only—therapy to provide symptomatic and prognostic benefit. For patients with renal or cardiac disease, dialysis and mechanical circulatory support are one option, but little else exists for patients with severe liver or lung function deficit. Survival after single, solid organ transplant is excellent, with 5-year graft survivals for kidney, liver, heart, and lung quoted as 75%, 75%, 79%, and 56%, respectively, according to the 2017 reports from the Scientific Registry of Transplant Recipients.¹⁻⁴ It is therefore appropriate that transplantation is referred to as the “gift of life.”

Major morbidity still occurs after transplant, however, including rejection, malignancies, infection, and such immunosuppression-related complications as diabetes, hypertension, and dyslipidemia. Not surprisingly, these risk factors accelerate the development of coronary artery disease in transplant recipients, many of whom had traditional risk factors for ischemic heart disease before their transplant. In addition, typical age-related diseases, such as aortic stenosis, become apparent. In this issue of the *Journal*, Bianco and colleagues⁵ report data from the University of Pittsburgh describing outcomes in 129 patients who had previously received a solid organ transplant. This volume represented approximately 1% of the 11,190 patients who underwent cardiac surgery at their institution between 2011 and 2018.

Not surprisingly, the vast majority of these patients required surgical revascularization (n = 84), with a small number requiring valve intervention (n = 45). Surprisingly, none of the patients required intervention on their ascending aorta, which may reflect the fact that only 9 of these patients had previously received a cardiac transplant. My own group and others have reported that aortic pathology arising from the distal suture line is a rare but potentially lethal complication that warrants clinical surveillance.⁶

Bianco and colleagues⁵ are to be congratulated for excellent 30-day survival of 98%. The presence of chronic obstructive pulmonary disease and heart failure predicted

5-year mortality, whereas readmissions were predicted by the need for valvular intervention.

The management of patients with preexisting solid organ transplants is challenging, and despite the excellent results reported by Bianco and colleagues,⁵ several details are missing that may help others reproduce their results. How many of these patients had functioning transplants, and did graft failure (particularly of a renal or liver graft) predict survival? I suspect that patients with a failing cardiac or lung graft were not offered cardiac surgery at all. Furthermore, how did Bianco and colleagues⁵ manage the immunosuppression regimen of these patients? It is well documented that the proliferation signal inhibitors (sirolimus and everolimus) are associated with poor wound healing and with pericardial and pleural fluid accumulations. In my own institution's practice, sirolimus is discontinued for a period of 6 to 8 weeks before elective surgery and is replaced with a calcineurin inhibitor when possible.

As Bianco and colleagues⁵ mention, a greater number of transplant recipients are surviving to an age at which coronary artery disease and aortic stenosis become prevalent. Results from centers such as the University of Pittsburgh reinforce the concept that cardiac surgery should not be denied to these patients, and with careful attention to perioperative management, excellent results can be obtained.

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