severity—proximal isolated stenoses versus multiple stenoses with distal vessel involvement—are features of coronary artery disease that strongly influence surgical strategy, complexity of the operation, and prognosis. Moreover, the quality of coronary vessels and graft availability and quality determine the completeness of the revascularization and its durability. With the matching method adopted by Brown and colleagues,¹ these data are lost to the analysis, making it impossible to evaluate any effects on the higher perioperative and long-term mortalities observed in the bioprosthesis group. Higher mortality could be related to an unfavorable preoperative status. In that case, the surgeons who performed the operations may have shown good clinical judgment, implanting bioprostheses in patients with poor prognosis. Moreover, there are no data on prosthesis sizes, effective orifice areas, and the incidence of patient–prosthesis mismatch, all of which could influence long-term results. In conclusion, Brown and colleagues deserve commendation for the insights from their interesting study. Nevertheless, extreme caution should be exercised in supporting or questioning existing clinical guidelines in response to potentially biased retrospective studies.

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Claudio Francesco Russo, MD

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Reference

1. Brown ML, Schaff HV, Lahr BD, Mullany CJ, Sundt TM, Dearani JA, et al. Aortic valve replacement in patients aged 50 to 70 years: improved outcome with mechanical versus biologic prostheses. *J Thorac Cardiovasc Surg.* 2008;135:878-84.
doi:10.1016/j.jtcvs.2008.05.025

Reply to the Editor:

Drs Cannata, Russo, and Taglieri commented on our results and the possible impact of selection bias, which is present in all observational surgical series. We matched patients and used multivariate analyses, but it is impossible to determine whether this has accounted for all possible confounders. We agree that only randomiza-

Figure 1. Survivals in mechanical aortic valve (Mech V) and bioprosthetic aortic valve (BPV) groups according to presence or absence of coronary artery disease, as indicated by coronary artery bypass grafting (CABG).

tion can distribute unmeasured covariates evenly between groups.

A question was raised regarding the extent of coronary artery disease. We used coronary artery bypass grafting as a surrogate for coronary artery disease, and the mean numbers of grafts per patient were 1.0 ± 1.3 in the mechanical aortic valve group and 1.0 ± 1.2 in the bioprosthetic aortic valve group ($P = .86$). We performed an analysis of survival of patients undergoing aortic valve replacement with and without coronary artery bypass grafting (Figure 1). The survival benefit we observed with a mechanical aortic valve appears, however, to be independent of the presence of coronary artery disease in our multivariate model, as shown in Table 5 of our original article.¹

Our finding of a survival benefit in the mechanical aortic valve group was surprising, and we have hypothesized that one possible explanation would be patient–prosthesis mismatch. We do not have the effective orifice area data available for this study group. We have, however, included information regarding body surface area and body mass index, size of prosthesis, and the incidence of aortic root enlargement in each group (see Table 1 in our original article). In general, surgeons at our clinic perform aortic root enlargement to accommodate a larger prostheses in any patient who is at risk for patient–prosthesis mismatch.²

We believe that current guidelines are generally appropriate for mechanical or bioprosthetic valve selection. Our primary

concern is with the growing trend toward placing bioprosthetic aortic valves in younger patients. All observational (retrospective or prospective) studies are unable to eliminate the potential impact of patient selection bias; however, this investigation adds equipoise.

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1. Brown ML, Schaff HV, Lahr BD, Mullany CJ, Sundt TM, Dearani JA, et al. Aortic valve replacement in patients aged 50 to 70 years: improved outcome with mechanical versus biologic prostheses. *J Thorac Cardiovasc Surg.* 2008;135:878-84.
2. Dhareshwar J, Sundt TM 3rd, Dearani JA, Schaff HV, Cook DJ, Orszulak TA. Aortic root enlargement: what are the operative risks? *J Thorac Cardiovasc Surg.* 2007;134:916-24.
doi:10.1016/j.jtcvs.2008.06.012

Importance of stabilization of the mitral annulus in mitral valve repair

To the Editor:

We read with great interest the article of Flameng and coauthors¹ about their experiences with mitral valve repair in Barlow disease and fibroelastic deficiency. They found that not using annuloplasty ring in mitral valve repair is a risk factor for recurrent mitral valve regurgitation. We