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EDITORIAL COMMENTARY

Coronary revascularization in the setting of surgical aortic valve replacement: Do we need extra icing on the cake?

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See related article on pages 451-60.

In their retrospective observational study from a single center appearing in this issue of the *Journal*, Thalji and colleagues¹ suggest that the performance of coronary artery bypass grafting (CABG) at the time of aortic valve replacement (AVR) is associated with similar operative mortality, albeit with improved overall survival during long-term follow up, to that of patients undergoing AVR without CABG. Although this proposition is at variance with generally accepted medical cognizance and a larger Society of Thoracic Surgeons database study that demonstrated that the addition of CABG to AVR increased surgical morbidity and mortality, it raises the important conjecture that revascularization might have an impact on long-term survival. In

this regard, the possibility of operator selection bias in performing or forgoing revascularization at the time of AVR can be ameliorated, but not totally eliminated, by the construction of a propensity score model. Further, the use of the primary outcome of total mortality and the inability to ascertain other cardiac outcomes that could be altered by revascularization, such as the risk of myocardial infarction and cardiac death, opens the door to a multitude of other comorbidities that could have led to a decision not to revascularize and, later and independently, may have affected total mortality.

Considering that it might be impossible to discern the potential for biases in retrospective analyses, and aware of the fact that well-designed prospective studies of revascularization in the setting of AVR are lacking, the clinician is left with the vexing problem of having to apply the knowledge gathered from previous trials in patients undergoing coronary revascularization in a nonvalvular population to a moving field of patients with aortic valvular heart disease that is rapidly shifting into a less-invasive percutaneous approach. This is additionally compounded by the fact that the most recent American Heart Association and American College of Cardiology guidelines² downplay the importance of CABG at time of surgical AVR, and the indication for revascularization for patients with coronary artery lesions greater than 70% has been downgraded from a class I to a class IIa indication, deemphasizing the importance of 50% to 70% stenotic lesions.

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There is little doubt that the safety, efficacy, and simplicity of transcatheter aortic valve replacement (TAVR) have been demonstrated in clinical trials in elderly patients and high-risk patients with aortic stenosis. More recently, TAVR is being offered to intermediate-risk and, soon, low-risk patient populations. The only missing link is longevity of the TAVR prostheses. Surgeons who participate in TAVR realize that in the near future patients with aortic stenosis will be preferentially treated with TAVR through various approaches, such as transfemoral, transsubclavian, direct aortic, or transapical. Off-pump coronary surgery, in combination with TAVR, would have been a natural progression to treat these patients. In light of the declining popularity of off-pump surgery and the enthusiasm of cardiologists for newer percutaneous coronary intervention technologic developments, however, it is likely that the AVR plus CABG controversy will be a moot issue; instead, these patients

will be preferentially treated with percutaneous coronary intervention combined with TAVR, with the surgical revascularization option left only to patients with very advanced coronary artery disease, those with a high SYNTAX score, and a selected group of patients with diabetes for whom surgical revascularization remains the preferred choice. A clinical trial is currently addressing this very issue; with its outcome, this controversy can be put to rest.

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