The data and use of bilateral internal thoracic artery grafting: A paradox indeed

Paul Kurlansky, MD

Considerable and convincing retrospective data now support an improved long-term survival with BITA versus single internal thoracic artery (SITA) bypass grafting for patients with multivessel coronary artery disease. Nonetheless, adoption by the surgical community has been remarkably modest, with BITA use less than 5% in the United States and only 12% in Europe. Even proponents seem to use the technique in less than 20% of patients. The reasons for this reluctance are manifold and have been discussed.

One aspect of this resistance arises from the complex nature of the patients we currently care for. BITA grafting may be advantageous for a group of patients, but will it benefit the specific patient on whom I am operating today? It is in just this realm of uncertainty that studies such as that reported by Benedetto and colleagues in this issue of the Journal become so important. Efforts to define those patients who derive the most benefit from BITA grafting have been helpful, but they tend to rely on retrospective single-center studies. Diabetic patients and patients with moderately but not severely reduced ejection fraction seem to benefit, whereas the benefit for women, although theoretically appealing on the basis of the smaller size of their coronary arteries, has been less than impressive.5 The role of surgical revascularization assumes increasing importance. The relationship of obesity to cardiac surgical outcomes is complex, with data supporting improved perioperative outcomes in overweight patients fueling the controversy regarding the relevance of the “obesity paradox” to surgical patients. In regard to the use of BITA grafting, recent data support the contribution of obesity, combined with diabetes and female gender, to the occurrence of deep sternal wound infection in patients undergoing BITA grafting. Indeed, even among matched patients, Benedetto and colleagues found an approximately triple risk of deep sternal wound infection in the BITA versus SITA groups (2.6% vs 0.9%).

Given the well-recognized association of obesity with cardiovascular disease and diabetes, the role of surgical revascularization assumes increasing importance. The fact remains that within the limitations imposed by the sample size of only 229 patients in each group, the long-term survival benefit was significant. Here again, the fact that this low-incidence event did not achieve statistical significance in a relatively small cohort of patients may have more to do with statistical limitations of sample size than the pathophysiology of sternal infection. However, the occurrence of deep sternal wound infection in patients undergoing BITA grafting, recent data support the contribution of obesity, combined with diabetes and female gender, to the occurrence of deep sternal wound infection in patients undergoing BITA grafting.21


disclosed with regard to commercial support.

Address for reprints: Paul Kurlansky, MD, Department of Surgery, Columbia University, Black Building 210, 650 West 168th St, New York, NY 10032 (E-mail: pk2245@columbia.edu).

J Thorac Cardiovasc Surg 2015;149:848-9
0022-5223/536.00
Copyright © 2015 by The American Association for Thoracic Surgery
http://dx.doi.org/10.1016/j.jtcvs.2014.11.084

See related article on pages 841-7.
been demonstrated to be a powerful predictor of long-term survival after coronary artery bypass grafting, the most appropriate mechanism of determination requires a complex assessment of functional and anatomic considerations (eg, ischemic burden, myocardial viability, and fractional flow reserve). Simply counting distal anastomoses and the number of diseased vessels is less likely to yield meaningful results than has traditionally been surmised.

Despite the limitations that accompany even the most rigorous of retrospective reviews, the contribution of Benedetto and colleagues gives us increased confidence that the obese patient with multivessel disease, a patient whom we are apt to encounter for the foreseeable future, is more likely than not to derive greater benefit than harm from the use of both internal thoracic arteries as part of a comprehensive strategy of optimal revascularization.

References