LETTERS TO THE EDITOR

Off-pump internal thoracic artery–left anterior descending coronary artery grafting via small anterior thoracotomy: When and compared to what?

To the Editor:

We read with interest the article by Calafiore and associates on the midterm results after minimally invasive coronary surgery (J Thorac Cardiovasc Surg 1998;115:763-71).

The authors deserve credit for having popularized grafting of the left internal thoracic artery (ITA) to the left anterior descending coronary artery (LAD). There is some concern, however, about patient selection and patient mix in the study population, on which the analyses in the paper are based. It is uncommon to find an indication for single LAD grafting in patients with multiple-vessel disease. Indeed, on page 764 the authors state that patients who are eligible for such an operation form a "very select" group of all patients having multiple-vessel disease. It is therefore surprising that the authors managed to find 220 patients of this rare category selected for their study, an even larger group than the single-LAD group (214 patients). The total number of patients who underwent coronary artery bypass grafting in that period was not mentioned. Also, there may have been some special referrals. More important, in the presentation of the results the two groups are largely combined.

This makes generalization of the results questionable. The extraordinary nature of this large group of patients with multiple-vessel disease, treated with single-LAD grafting, is illustrated by the apparent absence of a material difference in functional outcome. It should be noted, however, that this pertains to midterm outcome only. Differences in outcome may well become visible on long-term follow-up.

The authors should consider presenting their data strictly separately for single- and multiple-vessel groups. The multiple-vessel group in the present study should be regarded with caution, because this necessarily is a highly atypical group of patients. If not, the findings challenge the basic concept of surgical myocardial revascularization, that is, complete revascularization. Still, the long-term follow-up of this atypical group is of clear interest. In its present form the results of the report are difficult to interpret and may lead to confusion.

Erik W. L. Jansen, MD, PhD

Rick E. Grobbee, MD, PhD

Department of Cardiopulmonary Surgery

Heart Lung Institute

Utrecht University Hospital (Rm E03.406)

PO Box 85500

Utrecht, 3508 GA, The Netherlands

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Reply to the Editor:

The relatively high number of patients with multiple-vessel disease in the population that underwent single LAD grafting described in our recent article (J Thorac Cardiovasc Surg 1998;115:763-71) disturbed more than one surgeon. The idea

Fig 1. Coronary angiogram showing a severely diseased LAD. The huge marginal branch is free of significant lesions, but the distal circumflex artery shows a severe stenosis followed by a small terminal branch.

to leave a diseased coronary vessel ungrafted seems to be a strategic mistake.

However, the inclusion of this "very select group" of patients depends on the definition of "diseased vessel" and of "complete revascularization."

My definition of "diseased vessel" is the following: A vessel is considered "diseased" if it is the main vessel of the territory or if a side branch of it is occluded or if it has a lesion equal to or greater than 70%. If a circumflex artery or a right coronary artery has a short and small posterolateral branch with such lesions, the circumflex artery or the right coronary artery has to be defined as "diseased." In Fig 1, a coronary angiogram is shown in which the LAD has severe disease; the huge marginal branch is free of significant lesions, but the distal circumflex artery shows a severe stenosis followed by a small terminal branch. This patient has 2-vessel disease, but I would never graft this small branch which, in my opinion, has no influence on the patient's future. I certainly would never use cardiopulmonary bypass for such a purpose.

The concept of "complete revascularization" needs a more thorough analysis. If with this term we mean that any lesion that causes ischemia to the patient should be grafted, I fully agree. If this definition also includes the necessity to graft major and important coronary vessels supplying a huge territory and with a significant ($\geq 70\%$) lesion, even if there is no clearly demonstrated ischemia, when concomitant grafting to other surely ischemic territories is performed, I fully agree.