Severity of Angina Is a Predictor of Long-Term Improvement of Quality of Life After Coronary Artery Bypass Grafting

To the Editor:

In our study of 2006 [1], we found that a high Canadian Cardiovascular Society (CCS) angina class was an independent predictor of improvement in quality of life (QoL) 6 months after coronary artery bypass grafting (CABG). Based on the results achieved, we came to the conclusion that CABG should be recommended as a procedure for significant improvement of QoL in patients with a high CCS angina class.

Angina pectoris is a symptom with a distinct influence on QoL in patients with coronary conditions [1]. In the last American College of Cardiology Foundation/American Heart Association recommendations for CABG revascularization, CABG or percutaneous coronary intervention are recommended as therapy options for improvement of symptoms in the case of unacceptable angina despite guideline-determined medical therapy [2]. We recently finished long-term examination of the patients from our study and would like to share the information from the results related to the previously mentioned article.

The study included 243 consecutive patients. After the follow-up period of 11.7 $\pm$ 0.7 years, we succeeded in contacting 159 patients (62 of whom had died and 22 of whom we could not contact). Long-term QoL improvement was significantly correlated with preoperative severity of angina in relation to energy ($r = 0.22$; $p = 0.005$) and pain ($r = 0.4$; $p < 0.001$). Univariate and multivariate logistic regression showed that the degree of preoperative angina was an independent predictor of long-term improvement of QoL in relation to energy ($p = 0.012$; odds ratio, 1.76; 95% confidence interval, 1.13–2.74) and pain ($p < 0.001$; odds ratio, 3.18; 95% confidence interval, 1.83–5.52). To date, many studies have examined CABG impact on QOL in short-term or midterm follow-up, but only a few studies have examined long-term QoL after CABG [3]. There are few reports on long-term predictors of deterioration of QoL after CABG [4]. However, our study is one of the rare studies that examines the predictors of improvement and the first that shows that CCS degree of preoperative angina is an independent predictor of long-term QoL improvement after CABG. These results strengthened our decision to use CABG as symptomatic therapy in patients with high CCS angina class for the purpose of long-term improvement of QoL.

Vladan M. Peric, MD, PhD
Rade Grbić, MD, PhD

University of Pristina
School of Medicine
Anri Dinana bb, 38220
Kosovska Mitrovica, Serbia
e-mail: pericvladan@yahoo.com

Milorad D. Borzanovic, MD, PhD

Dedinje Cardiovascular Institute
Milana Tepica 10
Belgrade, Serbia

References

1. Peric VM, Borzanovic MD, Stolic RV, Jovanovic AN, Sovtic SR. Severity of angina as a predictor of quality of life changes six months after coronary artery bypass surgery. Ann Thorac Surg 2006;81:2115–20.
2. Hillis LD, Smith PK, Anderson JL, et al. 2011 ACCF/AHA Guideline for Coronary Artery Bypass Graft Surgery: a report of the American College of Cardiology Foundation/American Heart Association Task Force on Practice Guidelines. Circulation 2011;124:652–735.
3. Hokkanen M, Järvinen O, Huhtala H, Tarkka MR. A 12-year follow-up on the changes in health-related quality of life after coronary artery bypass graft surgery. Eur J Cardiothorac Surg 2014;45:329–34.
4. Herlitz J, Brandrup-Wognsen G, Caidahl K, et al. Determinants for an impaired quality of life 10 years after coronary artery bypass surgery. Int J Cardiol 2005;98:447–52.

What Really Affects Synchronous Pulmonary Adenocarcinoma Management?

To the Editor:

We read with interest the paper by Ishikawa and colleagues [1] focused on a current issue. In fact, the finding of additional nodules suspicious for carcinoma at computed tomography scan in patients with resectable lung cancer is a frequent situation in clinical practice. The authors' results confirm that surgery is successful in early stage synchronous primary lung adenocarcinoma with a 3- and 5-year survival of 93.6% and 87%, respectively. Remarkably they found that prognosis is poorly affected by bilateral distribution and nonlepidic predominant subtype of the largest tumor. It is also interesting that lobectomy was associated with a better prognosis only in the case of solid tumors, and sublobar resection was suggested for ground-glass opacity (GGO). We congratulate the authors because their findings will be valuable in the management of patients with multiple lung nodules.

However, our main concerns about this study are the criteria of population recruitment. The authors have enrolled both solid and nonsolid synchronous adenocarcinoma in the same population. Gu and colleagues [2], in a recent study, effectively showed that solid, nonlepidic and GGO, lepidic adenocarcinomas have a different behavior: the first subtype consists of focal and invasive tumors, whereas the second subtype has an indolent nature. Moreover, lepidic adenocarcinomas are multifocal tumors. Therefore patients with two or more ipsilateral or bilateral GGOs should not be considered as affected by synchronous different cancers but by a single multifocal disease.

Given this evidence, the surgical strategy also changes based on the histologic subtype. In case of synchronous tumors, all nodules should be resected to be curative. However, in case of multifocal indolent disease, Gu and colleagues [2] suggest a strategy of resecting the dominant tumor along with easily accessible GGOs and monitoring the remaining pure GGOs.

In our opinion, the real issue in the management of synchronous carcinoma is preoperative diagnosis. In fact, nodules are often small in size or centrally located in the parenchyma, making a nonsurgical biopsy demanding or impossible. Moreover cytology is not always able to correctly define tumor histotype, especially for GGOs. These difficulties in differentiating synchronous from metastatic disease and the absence of specific guidelines often make it hard to determine the best strategy.

We think that the authors' results encourage surgical management of monolateral multiple nodules in N0 patients, but further data are needed to better define the following topics: (1) correct treatment of bilateral nodules, (2) side to resect initially, and (3) the resection extent.

MISCELLANEOUS

0003-4975/$36.00

Alessandro Baisi, MD
Matilde De Simone, PhD
Federico Raveglia, MD
Ugo Cioffi, MD, PhD

Thoracic Surgery Unit
Azienda Ospedaliera San Paolo
University of Milan
Via Di Rudinì 8
20142 Milan, Italy
e-mail: alessandro.baisi@unimi.it

References

1. Ishikawa Y, Nakayama H, Ito H, et al. Surgical treatment for synchronous primary lung adenocarcinomas. Ann Thorac Surg 2014;98:1983–8.
2. Gu B, Burt BM, Merritt RE, et al. A dominant adenocarcinoma with multifocal ground glass lesions does not behave as advanced disease. Ann Thorac Surg 2013;96:411–8.

Reply
To the Editor:

We would like to thank Dr Baisi and colleagues [1] for their interest in and comments on our article [2]. As they pointed out, we included multifocal lung cancers (MFLCs) in our study population because our aim in this study was to obtain an overall picture of the outcomes of surgical treatment for synchronous multiple lung adenocarcinoma, which has a broad spectrum of disease. In such patients, distinguishing these lesions from pulmonary metastasis and deciding which lesions to be resected or left unresected should be extensively discussed in a multidisciplinary conference based on the radiologic features and clinical course. Even if a patient has ground-glass opacities (GGOs) more likely to be MFLCs, all GGOs that are large, are growing, or have solid components should be resected. Because our 5 patients (5.4%) with pure GGOs as dominant tumors represented such cases, we did include them in our study.

We agree that Gu and colleagues [3] reported an excellent study on the surgical management of multifocal adenocarcinomas. We think, however, that their study also did not distinguish MFLCs from synchronous primary lung cancers (SPLCs). Although the radiologic features of the dominant tumors were not described, most of the patients (71.8%) showed lepidic predominant histologic features (including adenocarcinoma with bronchioloalveolar features). This population was considered similar to that in our study, in which most patients (67.7%) had lepidic predominant carcinoma (including lepidic predominant invasive carcinoma) as dominant tumors. Our indication for resection is that all solid tumors and those with mixed GGOs should be resected, and pure GGOs that are large, small but easily accessible, or growing should be resected; we think this policy is quite similar to that of Dr Gu and colleagues.

The preoperative diagnosis and surgical management of bilateral SPLC are difficult. We believe that the imaging findings in tumors are useful for diagnosis and for determining the priority and range of resection. Differences of radiologic features between tumors and the existence of GGO are suggestive of SPLC. As for priority of resection, the side with more advanced lesions such as solid tumors should be initially resected. In our study, more use of sublobar resection may have contributed to poorer outcome in bilateral cases. Therefore, lobectomy should be performed for solid tumors generally, but in cases of marginal pulmonary reserve, segmentectomy would be one choice for peripheral small solid tumors [4].

Yoshihiro Ishikawa, MD
Munetaka Masuda, MD

Department of Surgery
Yokohama City University
Kanagawa, Japan
e-mail: y_ishikw@yokohama-cu.ac.jp

Hiroyuki Ito, MD
Haruhiko Nakayama, MD

Department of Thoracic Surgery
Kanagawa Cancer Center
Kanagawa, Japan

References

1. Baisi A, De Simone M, Raveglia F, Cioffi U. What really affects synchronous pulmonary adenocarcinoma management? (letter). Ann Thorac Surg 2015;100:1506–7.
2. Ishikawa Y, Nakayama H, Ito H, et al. Surgical treatment for synchronous primary lung adenocarcinomas. Ann Thorac Surg 2014;98:1983–8.
3. Gu B, Burt BM, Merritt RE, et al. A dominant adenocarcinoma with multifocal ground glass lesions does not behave as advanced disease. Ann Thorac Surg 2013;96:411–8.
4. Okada M, Koike T, Higashiyama M, Yamato Y, Kodama K, Tsubota N. Radical sublobar resection for small-sized non-small cell lung cancer: a multicenter study. J Thorac Cardiovasc Surg 2006;132:769–75.

Regarding Freestyle Pseudoaneurysms

To the Editor:

We read with interest the article by Englum and colleagues [1], who performed a retrospective review of pseudoaneurysm formation with the Freestyle heart valve (Medtronic, Minneapolis, MN) implanted as a full root. In their experience, 4 of 86 patients at risk experienced pseudoaneurysm in 1 of the coronary sinuses. Histologic examination failed to reveal evidence of a host immune response. The authors also conducted a literature review and MAUDE database inquiry. Unfortunately, the report mixes aneurysm and pseudoaneurysm cases, which significantly confounds the findings and renders their conclusions unsupported. We offer a different perspective.

Medtronic conducted a detailed review of all reported cases of Freestyle pseudoaneurysms since commercialization (0.18% of all full root implants). This extensive analysis also included reexamination of the quality of the porcine tissue, the tissue treatment process, and all subsequent manufacturing steps. Based on this analysis, Medtronic was able to confidently conclude that pseudoaneurysm formation is not related to a limitation in the manufacturing process. Implantation technique, however, can be an important contributing factor. We respectfully remind surgeons of some important technical caveats of a full root implantation.

1. Adequately mobilize the coronary buttons to prevent tension on the anastomoses. Some implanters rotate the Freestyle root clockwise slightly for better coronary artery alignment, whereas others rotate it by 120 degrees, bringing the Freestyle polyester section to the noncoronary position of the patient, facilitating tension-free anastomoses.
2. When making the openings for the coronary implantations, avoid the thinner sections located close to the leaflets. The

0003-4975/$36.00