SUBCOSTAL APPROACH FOR REPLACEMENT OF FAILING CIRCULATORY PUMPS

To the Editor:

The technique presented by Rogers and colleagues¹ is easy to perform and very useful. In our institution, we use a similar technique with some modifications to replace failing circulatory pumps.

In the case of cable damage of the HeartMate II or HeartWare HVAD pump and a hemodynamically stable patient, we first prepare the femoral vessels and the cardiopulmonary bypass is left on standby. After dissection of the pump as described by Rogers and colleagues,¹ the new pump is brought into the operating field and the cable is tunneled through the skin and connected to the controller ready for use. One hundred fifty international units of heparin per kilogram of body weight are administered intravenously. In the case of HeartMate II, the screws are loosened and then disconnected. The assistant secures both the openings with thumbs and the surgeon first connects the new pump to the outflow graft, flushes the pump, and tightens the first screw. Alternatively, the openings may be temporarily closed by introducing and blocking a Foley catheter. The next step is to connect the pump to the inflow graft under continuous flushing and then tighten the second screw. In patients with the HeartWare HVAD, the outflow graft is cross-clamped, the pump is removed, and

the fixation ring is closed temporarily with a specially designed titanium plug (Fittkau Metallbau GmbH, Berlin, Germany). In the next step the outflow graft is unscrewed and detached from the damaged pump, connected to the new pump, and tightened. The pump is introduced into the fixation ring under continuous flushing (after removal of the titanium plug). Transesophageal echocardiography continuously monitors the cavity of the left ventricle and ascending aorta for air. This modification avoids the use of cardiopulmonary bypass and simplifies the procedure. For patients in unstable condition, however, cardiopulmonary bypass should be established for safety reasons.

In 1 case of HeartAssist5 and 1 of Terumo DuraHeart thrombosis, we used cardiopulmonary bypass through the femoral vessels and exchanged the pump for a HeartWare HVAD with a similar approach. In 1 case of repeat thrombosis in a second HeartMate II pump, a HeartWare HVAD was similarly implanted. In these cases, the inflow cannula was dissected and removed with the fixation ring. Next, the fixation ring of the HeartWare HVAD was sewn to the apex on the already existing opening and the outflow graft (10 mm) was sewn to the proximal part of the outflow graft of the HeartAssist5 or Terumo DuraHeart (12 mm) or HeartMate II (16 mm) end to end from the same approach.

From our experience, we can recommend the subcostal approach for pump exchange in the case of thrombosis or irreparable cable damage or pump removal after myocardial recovery.

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left subcostal incision. *J Thorac Cardiovasc Surg.* 2012;143:975-6.

<http://dx.doi.org/10.1016/j.jtcvs.2012.01.089>

EBUS-TBNA USAGE IN DIAGNOSING NODAL METASTASES: A CONCERN

To the Editor:

Carcinoma of the lungs remains a highly lethal lesion despite many interventions and advanced research during the past quarter of a century. Staging of these patients to avoid unnecessary thoracotomy and surgical resection has become a strong consideration in patients with mediastinal concerns. The article "Utility of Endobronchial Ultrasound-Guided Mediastinal Lymph Node Biopsy in Patients With Non-Small Cell Lung Cancer" presents a comparison between 2 biopsy modalities: endobronchial ultrasound-guided transbronchial needle aspiration (EBUS-TBNA) and mediastinoscopy.¹ The accuracy of the EBUS procedure in the clinical setting has been well presented and demonstrates a potential method for reducing morbidity and potential major complications of the mediastinoscopic approach.

EBUS-TBNA demonstrated a highly accurate staging of the 73 patients reviewed. In their discussion, Lee and colleagues¹ mentioned that mediastinoscopy would have changed the tumor stage and treatment planning in only 2 of the 73 patients (2.7%). They discussed the sensitivity, specificity, and negative predictive value as well as the accuracy of the procedure. Of note, they mentioned that the patients with positive mediastinal biopsy findings were not surgical candidates. Because of an advanced disease stage (IIIB) or unresectable disease, the patients did not undergo additional tissue acquisition from the mediastinum. They further mentioned that patients with positive biopsy results for metastatic carcinoma did not undergo mediastinoscopy.

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A word of caution, however, is exemplified by one of our patients who had proven adenocarcinoma of the right lung and a positron emission tomographic scan that demonstrated bilateral hilar and mediastinal uptake suggestive of nodal metastasis. EBUS biopsy of both the right and left paratracheal and hilar areas demonstrated malignant cells when a biopsy was acquired from the right side. On the basis of this finding, the patient was recommended not to have additional interventional therapy, but rather to have a regimen of chemotherapy and radiotherapy. When we were consulted for a second opinion. On review of her studies, it was our feeling that she did not have strong evidence of metastatic disease. Surgical intervention with upper lobectomy and removal of 18 hilar and mediastinal lymph nodes revealed no positive nodal metastasis on microscopic pathologic review.

On retrospective review of the original EBUS study, there were both malignant cells and lymphoid cells within the specimen. Our feeling, retrospectively, was that a false-positive report suggesting metastatic disease resulted from the needle passing through the node and into the lung, thus obtaining pulmonary carcinoma cells compared with nodal carcinoma cells. This may lead to a potential misdiagnosis and misstaging, resulting from a false-positive result of metastatic carcinoma to the lymph nodes, and a nonoperative or different therapeutic recommendation.

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<http://dx.doi.org/10.1016/j.jtcvs.2012.07.037>

THE BEST SURGICAL STRATEGY IN PATIENTS WITH LEFT MAIN STEM DISEASE To the Editor:

We read with great interest the article by Murzi and colleagues¹ regarding the best surgical management in coronary artery disease patients with left main stem disease undergoing surgical revascularization. The authors present a high quality observational study comparing off-pump coronary artery bypass grafting (CABG) with on-pump CABG, in a large cohort of consecutive patients with left main stem disease over a period of 15 years.

Actually, 2 randomized studies had already addressed this question: the Veterans Affairs Randomized On/Off Bypass (ROOBY) trial² and the CABG Off or On Pump Revascularization Study (CORONARY) trial.³

The CORONARY trial³ is the largest multinational, prospective, randomized trial to date, involving 4,752 patients, conducted in 19 countries at 79 centers. More than 20% of enrolled patients showed significant left main stem disease. At 30 days after randomization, there was no significant difference between off-pump and on-pump CABG with respect to the rate of death, nonfatal myocardial infarction, nonfatal stroke, or renal failure requiring dialysis. Subgroup analyses showed that there was no significant difference concerning the coprimary outcome in patients (n = 1001) with left main stem disease at 1 month after randomization (off-pump n = 514 patients, on-pump n = 487; hazard ratio, 0.80; 95% confidence interval, 0.55-1.16; *P* = .24). The sure-to-be-forthcoming midterm and long-term primary outcomes results will influence the interpretation of the CORONARY trial.

The ROOBY trial,² which involved 2,203 male patients in 18 Veterans Affairs medical centers demonstrated no advantage for off-pump CABG either at 30 days or at 1 year after surgery. There was no significant

difference between the 2 cohorts concerning the primary short-term (ie, before discharge or within 30 days after surgery) composite outcome of death or postoperative major morbidity (ie, reoperation, new mechanical support, cardiac arrest, coma, stroke, or renal failure requiring dialysis). However, at 1-year follow-up, patients in the beating-heart technique group experienced worse composite outcomes (ie, death from any cause, repeat revascularization procedure, or nonfatal myocardial infarction) than did patients in the on-pump group. The rate of graft patency was significantly lower in the off-pump group than in the on-pump group (82.6% vs 87.8%; *P* < .01) at 1 year and this accounted for most of the difference in late composite outcomes between the 2 groups. Notably, Shroyer et al² state that their ROOBY trial conclusions can be generalized to subgroups of high risk candidates, among them patients with left stem main disease.

We have only 1 question for Murzi and colleagues¹ regarding their surgical management in the off-pump group: Might the 0% stroke result found in the off-pump CABG group have been the result of using total arterial revascularization and aortic “no-touch” techniques? Both of those methods decrease significantly the incidence of stroke after CABG, particularly in patients with aortic atherosclerosis.

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