vein before the distal anastomoses were performed. In case of uncertainty or bleeding, the Symmetry connector was replaced.

Before closing the chest, we reassessed flow with an additional measurement by using the transit time flow probe (Medi-Stim, Oslo, Norway).

No neurologic deficiencies were observed, and 54 of 61 patients had an uneventful postoperative course. However, in 7 (11.5%) of 61 patients, we encountered device-related complications: in 1 patient occurring intraoperatively, in 2 patients within 5 days after the operation, and in 4 patients within 6 months postoperatively.

Six patients were subjected to repeat coronary angiography: 1 patient had ventricular fibrillation and consequent resuscitation; 5 patients had a recurrence of angina, dyspnea, or both; and 1 patient had loss of flow detected intraoperatively with a new image system (Spy Novadaq, Toronto, Ontario, Canada). This occlusion was due to an aortic plaque that was not properly cut by the Symmetry cutter and therefore closed the new aortic opening like a cover. Repeat angiography in 6 of 7 patients showed an occlusion of the vein graft right at the neo-ostium. Kinking of the graft was never observed as a possible cause of closure. Three patients underwent reoperation within 6 days. In 1 patient the graft was dilated, in 2 patients the graft was stented, and in 1 patient further treatment was not considered necessary because of the small size of anastomosed artery.

On the basis of these observations, we have stopped the routine use of the Symmetry connector and reserve the device for patients who have a severely calcified ascending aorta (grade IV-V), in whom other alternative techniques (vein anastomosis to the internal thoracic artery or to the innominate artery) are not possible.

Although we fully acknowledge the potential benefits of a nontouch vein graft-aorta anastomosis, further investigations and possibly improvements of the connector are necessary to evaluate the potential benefits of this interesting technology.

Oliver Reuthebuch, MD

Mario Lachat, MD

Alexander Kadner, MD

Marko Turina, MD

Clinic for Cardio-vascular Surgery

University Hospital Zurich

Ramistrasse 100

CH-8091 Zurich, Switzerland

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Horner syndrome

To the Editor:

I compliment Naimer and associates¹ for drawing attention to the important problem of Horner syndrome after manipulation of the subclavian artery in the neonate. As Naimer and associates¹ pointed out in their report, there are remarkably few references to this complication. Although Horner syndrome may seem to be a minor problem to physicians caring for children with complex congenital heart disease, its cosmetic consequences are certainly not viewed lightly by parents of affected children.

Horner syndrome not only has been described after subclavian flap aortoplasty, as in the report by Naimer and associates,¹ but also is seen regularly after a thoracotomy approach to construction of either a modified or classic Blalock shunt. I believe that this is one of the important advantages of approaching construction of a modified Blalock shunt through a median sternotomy. In our 1995 report,² my colleagues and I found no cases of Horner syndrome among 52 patients who had a modified Blalock shunt constructed through a sternotomy approach. We also found a significantly lower probability of shunt failure with the sternotomy approach than with the thoracotomy approach. I believe that the sternotomy approach is technically easier and less likely to result in distortion of the hilar branches because the distal anastomosis is placed more proximally on the branch pulmonary artery. This also facilitates subsequent takedown of the shunt. In contrast to our experience with the sternotomy approach, we found that 2 of 16 patients who

underwent a thoracotomy approach as part of first-stage preparation for a rapid two-stage arterial switch had Horner syndrome develop.²

I am in complete agreement with the conclusion of Naimer and associates¹ that there are probably many unidentified cases of Horner syndrome that occur after manipulation of the neonatal subclavian artery. Careful consideration should be given to choosing surgical techniques and approaches that avoid manipulation of the subclavian artery in the region of the sympathetic pathway.

Richard A. Jonas, MD

Cardiovascular Surgeon-in-Chief

Children's Hospital

300 Longwood Ave

Boston, MA 021153

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Impact of comorbidity on survival after surgical resection in patients with stage I non-small cell lung cancer

To the Editor:

I read with interest the recent article by Battafarano and associates¹ on significantly adverse impact of comorbidity on survival of patients with resected stage I non-small cell lung cancer. Although the vast majority of patients with early stage (I and II) disease are treated with surgery, a small subset of these patients are not candidates for surgery because of preexisting comorbidity. Such patients are treated with radiotherapy alone.²⁻⁹ In this patient population high-dose, standard fraction, or hyperfractionated radiotherapy is capable of achieving median survivals as long as 30 months and 5-year survivals as great as 30%,^{7,8} with values going up to approximately 40 months and 40%, respectively, for T1 N0 cases.⁹

This patient population clearly represents a case of extremely negative selec-

tion in which, as observed in their surgical counterparts, numerous cancer-unrelated events seriously distort the overall picture of the effectiveness of radiotherapy. Indeed, when additional end points such as cause-specific or disease-free survivals are offered, the magnitude of the difference between overall and cause-specific survivals in these reports²⁻⁶ have usually been between 15% and 20%.²⁻⁶ It is therefore obvious that in this patient population the use of cause-specific or disease-free survival is mandatory to correct for events that are not cancer related. Similarly to surgical series, it is observed that intercurrent deaths are directly correlated with increasing age and preexisting comorbidity (21%-43%).⁵⁻⁹

Although patients with early stage non-small cell lung cancer treated with surgery and those treated with radiotherapy cannot be meaningfully compared, they share the risk of cancer-unrelated death from serious comorbidity. As we have seen from this

article,¹ these risks could be identified and stratified or grouped, which knowledge could be used to optimally address the treatment in this disease.

Branislav Jeremic, MD
Technical University Munich
Klinikum rechts der isar
Department of Radiotherapy
Munich, Germany

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