Cervicothoracic tumors: Results of resection by the "hemi-clamshell" approach*To the Editor:*

We read with interest the article of Korst and Burt¹ concerning the surgical treatment of the tumors involving the cervicothoracic junction using the hemi-clamshell approach. We agree with the authors that, among the different surgical accesses described, the hemi-clamshell is the technique that offers the best chances of removing tumors located in this region apart from the structures involved and the size of the tumor. Nevertheless, in using this approach, we have noticed difficulties in exposing the distal part of the subclavian vessels in 2 cases in which we recently operated. The first was a cancer of the left upper lobe involving also the vertebral bodies from T1 to T3, and the second was a big apical cancer of the left upper lobe involving the subclavian artery and the first rib. In both cases we have modified the standard hemi-clamshell approach by dividing the first costal cartilage and the costoclavicular ligament, thereby obtaining a remarkably improved exposure with a safe control of the distal part of the subclavian vessels. We have taken this technical variation from our experience using the transmanubrial osteomuscular sparing approach proposed by Grunenwald and Spaggiari² that gives very good exposure of the structures of the thoracic inlet/outlet, even though in our series of 10 patients, 6 required an additional posterolateral thoracotomy to complete the pulmonary upper lobectomies. We believe that the modified hemi-clamshell approach can be a more useful surgical technique in performing radical anatomic resections of pulmonary apical tumors invading the thoracic inlet/outlet, by avoiding the limitation of not completely controlling the subclavian vessels and also permitting resection in cases of invasion of the posterior chest wall.

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2. Grunenwald D, Spaggiari L. Transmanubrial osteomuscular sparing approach for apical chest tumors. *Ann Thorac Surg* 1997;63: 563-6.

12/8/97046**Correction of cardiac defects through a right thoracotomy in children***To the Editor:*

Liu and coauthors describe in the *Journal* (1998;116:359-61) an approach to correct cardiac defects through a right lateral thoracotomy in children. They have a large experience of 351 patients without early or late mortality. The concept they advocate of minimally invasive surgery with good cosmetic

results is very attractive. However, we believe this important and stimulating paper needs some words of discussion and caution.

Cosmetic approach. Several years after successful repair of a congenital cardiac defect, the cosmetic impact on an adolescent, particularly a girl, is one of the main concerns, if not the most important. For this reason many operations, mostly atrial septal defect closures, have reportedly been performed through a submammary incision or, more recently, a ministernotomy.

However, the submammary approach presents some uncertainty, especially in young female patients before breast development. Even though the incision is made at distance from the nipple and in the supposed area of the submammary groove in young girls, one is never absolutely certain of how the gland will grow. Asymmetry in the two breasts would be a catastrophic cosmetic result. In addition, disturbances of sensitivity of the breast have been described. For this reason a more posterior approach such as the one used by the authors may be cosmetically better and deserves interest. However, the authors mention that a "flap of breast tissue is mobilized." This could also have late cosmetic consequences, and more than 3 years' follow-up would be needed to identify these consequences.

Selection of patients. The authors are to be congratulated for using this lateral approach to repair not only secundum atrial septal defect (for which, curiously, they used more patches than direct closures) but also more complex defects including, in particular, ventricular septal defect (n = 211), tetralogy of Fallot (n = 27), and pulmonary artery stenosis (n = 34).

Tetralogy of Fallot is generally considered to be a serious surgical problem even if not complex. Inasmuch as the authors advocate surgery through this approach (excluding forms with stenosis of the origin of the left pulmonary artery), it would be interesting to know whether this small proportion of their cases (27/351) was consecutive or selected. Owing to their large experience, they have certainly treated many more cases of tetralogy of Fallot than are mentioned in their article. The question also arises about the increased risk of leaving a residual defect with such an approach, in particular a pulmonary artery distortion or a residual pulmonary stenosis, with some uncertainty on the late result of correction. Offering an alternative surgical approach for tetralogy of Fallot would need a demonstration that the anatomic result is as good as that obtained with the more usual midline approach.

The authors report a very small number of cases of partial atrioventricular canal (3/351). One wonders why this number is so small, since it would seem extremely convenient to use this approach to operate on this defect.

The authors also mention that a patent ductus arteriosus or a left superior vena cava, generally considered as contraindications for the right-sided approach, are not a problem. They should describe how they solved the problem.

In summary, we think that more comments should be made on the selection of patients.

An alternative approach. In the past 2 years, we have used in 40 cases an even more cosmetic approach, the right