shown that subcarinal dissection is not always necessary for tumors in the right upper lobe and the left upper segment because of very low prevalence of metastasis in subcarinal nodes for these tumors. However, is such a resection, even if the margin is completely free of tumor, really an "incomplete resection"?

I would like to address 2 issues regarding their question. First, the proper extent of lymph node dissection and the definition of complete (incomplete as well) resection in lung cancer should be discussed separately. The proper extent of lymph node dissection should be based on the prevalence of metastasis in each mediastinal site and the patient's prognosis. Systematic lymph node dissection is intended for local control and subsequent improvement of survival, and it should be technically distinguished from simple lymph node sampling. In this sense, we consider that subcarinal dissection does not contribute to better local control when the superior mediastinum is free of disease (negative), and it is a rather time-consuming procedure in upper lobe tumors according to lobe-specific data. We think that the information gained from the superior mediastinal node can be a good surrogate for the subcarinal node.

Second, the definition of "complete (incomplete) resection" in lung cancer has not been uniform. Indeed, many investigators advocate that macroscopic or microscopic residual disease at the resection margin and the presence of tumor in the highest mediastinal node sampled at thoracotomy be considered as evidence of incomplete tumor resection.²⁻⁴ Others include perinodal extension as well.⁴ Since the subcarinal node is not the highest station in the mediastinum (it is station 1 by Japanese definition and station 2 by United States definition), its positivity for tumor does not affect the judgment of "complete or incomplete resection." Here I agree that the definition of "complete (incomplete) resection" itself is problematic, as pointed out by Kutlu, Sayar, and Metin. The data from the Canadian Lung Oncology Group demonstrated a very limited prognostic significance of these definitions.⁵ That seems reasonable considering the tumor's nature of readiness to spread, such as in skip metastasis and occult distant metastasis in lung cancer. I believe that the definition of "complete resection" should be simply a resection without any evidence of residual macroscopic or microscopic tumor, regardless of nodal status.

I agree with Kutlu, Sayar, and Metin that the definition of complete resection in lung cancer requires revision. However, the strategy for systematic lymph node dissection should be better local control.

Hisao Asamura, MD
Division of Thoracic Surgery
National Cancer Center Hospital Japan
1-1, Tsukiji 5-chome
Chuo-ku, Tokyo 104-0045, Japan

REFERENCES

1. Asamura H, Nakayama H, Kondo H, Tsuchiya R, Naruke T. Lobe-specific extent of systematic lymph node dissection for non-small cell lung carcinomas according to a retrospective study of metastasis and prognosis. *J Thorac Cardiovasc Surg* 1999;117:1102-11.
2. Lad T, Rubinstein L, Sadeghi A, for the Lung Cancer Study Group. The benefit of adjuvant treatment for resected locally advanced non-small-cell lung cancer. *J Clin Oncol* 1988;6:9-17.
3. Shields TW. The "incomplete resection." *Ann Thorac Surg* 1989; 47:487-8.
4. Mountain CF. Expanded possibilities for surgical treatment of lung cancer—survival in stage IIIa disease. *Chest* 1990;97: 1045-51.
5. Lacasse Y, Bucher HC, Wong E, et al. "Incomplete resection" in non-small cell lung cancer: need for a new definition. *Ann Thorac Surg* 1998;65:220-6.

12/8/103302

Esophagectomy with gastric reconstruction for achalasia

To the Editor:

I read with great interest the article by Banbury and associates, titled "Esophagectomy With Gastric Reconstruction for Achalasia" (*J Thorac Cardiovasc Surg* 1999;117:1077-85).

In our department, we have been performing esophagectomy with gastric reconstruction for the treatment of megaesophagus due to Chagas disease since 1956. As proposed by Câmara-Lopes and Ferreira-Santos,¹ the operation was performed in 2 stages, with the stomach brought up by the retrosternal route. Since 1961, Ruy E. Ferreira-Santos and I have been performing a 1-stage operation, leaving the stomach in the bed of the resected esophagus.² Because thoracotomy, laparotomy, and cervicotomy were required at the time, I devised a rotary surgical table³ that permitted easy and rapid changes in decubitus, making it possible to always operate in the best position. Starting in 1985, whenever possible, we began to perform the operation without thoracotomy.

Because of the denervation occurring in Chagas disease, an association of megaesophagus with megacolon was found in 76% of cases, and this is the reason that the colon was never used. However, the stomach can also have varied degrees of denervation and dilatation, which worsened by surgery. This was probably the cause of the stasis and regurgitation observed in a few cases in our series. This complication was so severe in 1 patient that 3 years later he regurgitated everything he ate, with severe impairment of his nutritional status. To solve this difficult problem, we successfully performed a Roux-en-Y transdiaphragmatic gastrojejunal shunt. Perhaps esophagectomy with gastric reconstruction should not be performed in patients with a greatly dilated stomach. Like the authors, we believe that pyloroplasty is imperative to avoid gastric stasis and regurgitation.

There was also a frequent association of advanced chagasic megaesophagus with carcinoma (3%), ulcers, and leukoplasic lesions. These findings support the indication of esophagectomy.⁴ Another frequent postoperative complication in our cases (12%), not reported by the authors, is diarrhea of varying intensity, which tends to disappear with time. In some patients, diarrhea was accompanied by lower limb edema, suggesting a state of nutritional deficiency. However,

protein levels, as well as glucose and fat absorpition tests, were within normal limits. The only alteration found was achlorhydria or hypochlorhydria. Fistulas and stenosis, relatively frequent in 2-stage operations, became less common in 1-stage operations. Wide anastomoses were performed without tension on a single plane with separate stitches of 4-0 polypropylene sutures. In shorter stomachs, mobilization of the duodenum by the Kocher maneuver permits easier ascension of the gastric fundus to the neck. One case of bleeding ulcer and 2 cases of carcinoma occurred in transposed stomachs.

The association with Chagas heart disease is frequent, and some of these patients have arrhythmias that require careful study for accurate diagnosis. In our service, we showed that atrial recordings and stimulation can be performed through the transposed stomach in the posterior mediastinum. This noninvasive examination provides better evaluation of the patient.

Successful generations of surgeons have operated on more than 200 patients with an overall mortality of 3%. Most deaths occurred during the early period of the series.

In conclusion, we believe that 1-stage esophagectomy with gastric reconstruction through the posterior mediastinum is currently the best treatment option for advanced (grade IV)

chagasic megaesophagus. The performance of this technique with the aid of video surgery, already available, will simplify the procedure and make the postoperative period less painful.

Albert Amin Sader, MD

Head, Division of Thoracic and Cardiovascular Surgery

Department of Surgery

Faculty of Medicine of Ribeirão

University of São Paulo

14048-900 Ribeirão Preto, São Paulo, Brazil

REFERENCES

1. Câmara-Lopes LH, Ferreira-Santos R. Selective indication of the Heller operation: partial resection and subtotal resection of the esophagus in the surgical treatment of the megaesophagus (in Portuguese). *Rev Paul Med* 1958;52:269-75.
2. Ferreira-Santos R. Surgical treatment of esophageal aperistalsis (megaesophagus). Thesis presented to the Faculty of Medicine of Ribeirão Preto, University of São Paulo, Ribeirão Preto, Brazil, 1963 (in Portuguese).
3. Sader AA. Laterally rotating surgical device for one-stage operations on the thorax and abdomen. *Am J Surg* 1983;145:420-3.
4. Câmara-Lopes LH. Carcinoma of the esophagus as a complication of megaesophagus. *Am J Dig Dis* 1961;6:742-56.

12/8/103301