DIFFERENCE IN OUTCOME IN THE TRANSECTION OF THE PULMONARY ARTERY AND VEIN

To the Editor:

We read with interest the article entitled, "Is Pneumonectomy Mandatory after Transection of the Left Main Pulmonary Artery?" by Dr Ihekweazu and colleagues¹ in the July issue of *Journal*. We are interested in their experience, and we would like to make a few comments.

In fact, 2 articles have already been published on the transection of the main pulmonary artery. First, Dhaliwal and colleagues² described 20 cases in which the main pulmonary artery and main bronchus were transected because of massive hemoptysis. They called the surgical procedure "physiological lung exclusion." In their series, the exclusion involved the entire left lung in 8 cases, the entire right lung in 6 cases, the right upper lobe in 3 cases, the left upper lobe in 2 cases, and the right lower lobe in 1 case. The pulmonary veins were left in all 20 patients to enable venous drainage. Dhaliwal and colleagues' method has been used in patients

with life-threatening hemorrhage in the lung with failed medical management, in whom lung resection was found to be technically hazardous or even impossible. This article mentioned transection of not only the pulmonary artery but also the main bronchus. Second, Randolph³ described a similar case involving pulmonary hemorrhage in pulmonary tuberculosis, treated by main pulmonary artery ligation only. Randolph attempted a pneumonectomy, but could not complete it because of technical difficulties. However, he wrote that the patient had no recurrence of hemoptysis and no empyema.

In contrast, we have had the opposite experience, suggesting that the pulmonary vein cannot be transected like the pulmonary artery. When we ligated the pulmonary vein in a patient with primary lung cancer in the right upper lobe, we transected 2 of the 3 branches from the right upper lobe. On further inspection of the pulmonary artery and main bronchus, the tumor was deemed unresectable, so the thoracotomy was closed. Once the patient was extubated, hypoxemia developed and the chest x-ray and computed

tomography demonstrated pulmonary edema of the upper right lobe on postoperative day 3. The respiratory failure worsened, and finally he died of pneumonia on postoperative day 11. Thus, we can state that 1 of the 3 branches from the right upper lobe can be transected, but transection of 2 or more of the 3 branches should be avoided. Our experience tells us that 1 of the 3 pulmonary artery branches to the right upper lobe can be ligated.

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