Letter to the Editor

Physiological exclusion for massive hemoptysis: when?

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We read with interest the article by Dhaliwal and associates [1] describing the role of physiological lung exclusion in difficult lung resections for massive hemoptysis. Their conclusions “physiological lung exclusion is a safe and effective method for control of massive hemoptysis in cases where lung resection is technically hazardous or difficult” were assiduated by us.

We would like to share our experience about massive hemoptysis with the readers of the Journal. We have performed 27 lung resections in the past 8 years (one pneumonectomy, 26 lobectomies) in whom the blood loss was more than 600 ml/24 h. We excluded the percutaneous bronchial embolization patients. Diagnostic evaluation of these patients was done with a chest roentgenogram and computerized tomography of the thorax. Rigid bronchoscopy was performed in 24 of them before operation. Two patients (7.40%) died in the postoperative period, one patient required mechanical ventilation for 62 days and three patients (11.11%; including a mechanically ventilated patient) developed postlobectomy empyema and broncho-pleural fistula. The pathological records demonstrated pulmonary tuberculosis in ten patients (three of them were multidrug resistant), pulmonary hemorrhagic syndrome in seven patients, bronchiectasis in three patients, pulmonary vasculitis in three patients, aspergillosis in three patients and lung cancer in one patient.

We performed a physiological lung exclusion considering the experience of Dr Dhaliwal and associates. The patient was a 38-year-old man who had been treated for pulmonary tuberculosis. Acid resistant bacteria were present in the sputum. He had hemoptysis of 1400 ml/day. He was hemodynamically unstable (hematocrit, 20%; T/A, 80–40 mmHg; pulse was arrhythmic, 120/min) and desaturated (saturation, 84%). Rigid bronchoscopy revealed that the bleeding was from the origin of the right upper lobe bronchus. A posterolateral thoracotomy was performed, very tight calcific pleural adhesions were noticed. It would have taken a long time to mobilize the lung and hilus. Posteriorly, we identified the upper lobe bronchus and stapled. We prepared the fissure and ligated the major pulmonary arterial vessels to right upper bronchus. During these maneuvers, 4 units of blood were transfused and the Htc was still 18%. It would have been dangerous to mobilize the fixed upper lobe to the apex of the thorax. Two standard pleural drainages were employed and the thoracotomy was closed. He was mechanically ventilated for 6 h. The patient had an uneventful postoperative course and was discharged on postoperative day 10. Radiologically, a shrunk lobe was present in the apical region.

We do not offer such an operation for a standard massive hemoptysis patient. However, we believe that physiological exclusion of the lung could be applicable in cases of: (1), really tight pleural adhesions which would increase the operating time and would cause more bleeding; (2), desaturated patients; (3), hemodynamically unstable patients.

We strictly do not offer such an operation for lung cancer patients, stable patients and technically feasible resections. Non-surgical candidates could have bronchial embolization. Physiological lung exclusion for massive hemoptysis should be kept in mind as an alternative.

References