Massive Hemoptysis Successfully Treated by Modified Bronchoscopic Balloon Tamponade Technique*

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A 60-year-old man with massive hemoptysis was treated successfully by modified bronchoscopic balloon tamponade technique. Compared with previously reported techniques, the modified technique requires no special catheter, no complicated maneuver, and is able to be applied to more massive bleeding.

(CHEST 1996; 109: 842-43)

Key words: balloon catheter; bronchoscope; hemoptysis; tamponade

Massive hemoptysis is a life-threatening emergency. We experienced a massive hemoptysis case successfully treated by modified balloon tamponade technique. Here, we present the case and discuss the merit of the modified technique.

CASE REPORT

A 60-year-old man, who had undergone an extended radical mastectomy of the left breast for cancer and had undergone orchidectomy, chemoendocrine therapy, and radiotherapy for left pleural recurrence, presented with massive hemoptysis. The amount of hemoptysis was about 1,500 mL in 10 h after admission when we were consulted.

Bronchoscopy was performed at the bedside. The patient was laid in the left lateral position. After local anesthesia, a fiberoptic bronchoscope with a large working channel (Pentax FB-18X) was inserted via the nasal route to facilitate expectoration of blood during bronchoscopy. After vigorous suction and expectoration of blood, continuous bleeding was observed from the periphery of the left B4. Balloon tamponade by inserting a balloon catheter through the working channel of the bronchoscope was attempted after failure of bronchoscopic tamponade. When a balloon catheter (Balloon Pressure Catheter, Wedge, 7F, Arrow made) was inserted in the working channel, the view was lost due to reduced suction capacity. The balloon catheter was removed from the working channel and a J guide wire (0.035 inch) for angiography was inserted into the left B4 for guiding the balloon catheter. The bronchoscope was once removed leaving the guide wire in place and was reinserted through the other nostril. The balloon catheter was inserted into the left B4 utilizing the guide wire under bronchoscopic observation, and the balloon was placed and inflated by air at the orifice of the B4 (Fig 1). The bleeding was controlled immediately after inflating the balloon. The balloon catheter was fixed, and the guide wire was removed. Every 12 h, the balloon was deflated for 10 min to avoid necrosis of the bronchial wall. No bleeding was present from the initial deflation of the balloon. Forty-eight hours after the insertion, the balloon was kept deflated, and the catheter was removed 72 h after insertion.

After the bleeding was controlled, bronchial and intercostal arteriography was performed (Fig 2). Tumor vessels, arising from the left bronchial artery and the left 6th through 11th intercostal arteries and draining into the pulmonary vein were thought to be responsible for the bleeding. These arteries were embolized, and the patient was discharged. The patient died elsewhere of massive hemoptysis 3 months after discharge.
Extralobar Sequestration Presenting as Massive Hemothorax*

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Pulmonary extralobar sequestration is a rare anomaly, usually diagnosed during the first months of life. A case of extralobar pulmonary sequestration in an adult, manifesting itself as massive hemothorax, is presented. (CHEST 1996; 109:843-45)

Key words: cystic adenomatoid malformation; extralobar sequestration; hemothorax

Bronchial sequestration is a relatively rare anomaly, diagnosed usually at infancy. Of the two forms of bronchopulmonary sequestration, intralobar and extralobar, the latter is less frequently encountered. We describe an adult with extrapulmonary sequestration in whom massive spontaneous hemothorax was the presenting symptom.

Case Report

A 50-year-old healthy man was referred to the hospital because of a complaint of pain in the lower area of the left side of the chest and the left area of the hypochondrium, 2 h following ergometry performed as part of a periodic checkup. Physical examination revealed only a slightly distented abdomen. The patient was admitted for observation. At the time of admission, the ECG was normal and remained so. A chest x-ray film demonstrated a moderate pleural effusion on the left side. Twenty-four hours later, dyspnea and elevation of body temperature to 38°C developed, and a dull percussion sound with no air entry over the lower part of the left lung was noted. Another chest x-ray film indicated a significant increase in the amount of the pleural effusion.

Closed-tube thoracostomy yielded non-clotting blood. Since the patient was experiencing chest pain and hemothorax on the left side, the possibility of dissection of the thoracic aorta was considered. Transesophageal echocardiography did not indicate any abnormal cardiac finding nor evidence of aortic dissection. However, a fairly large amount of pleural effusion was present on the left side, with a large partially moving mass within the fluid. A CT scan of the chest indicated the presence of a large left-sided pleural effusion surrounding a mass-like lesion, containing fluid with irregular, high-density foci in its periphery (Fig 1). Angiography of the thoracic aorta, celiac trunk, and left lower intercostal arteries showed no evidence of dissecting aneurysm, bleeding, or abnormal vessels supplying the lung tissue. The chest tube drained 2,800 mL bloody effusion within 48 h. Significant clinical improvement followed. However, following another episode of chest pain, a subsequent CT scan of the chest showed a marked increase in the size of the mass, with a minimal amount of fluid surrounding it.

Subsequently, the patient underwent an explorative thoracotomy. A cystic mass was found at the lower aspect of the left lung.

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Figure 2. Intercostal arteriography performed after the bleeding had been controlled. Tumor vessels draining into pulmonary vein are present.

Discussion

Balloon tamponade is a useful technique for treating hemothysis. But inserting a balloon catheter through the working channel of a flexible bronchoscope, as previously reported,1,2 has some demerits. First, insertion of a balloon catheter into the working channel reduces the suction capacity and thus makes it difficult to attain a good endoscopic view during the procedure, limiting the use of the technique to patients with slow bleeding. Second, a special balloon catheter with reattachable valve3 is necessary to remove the bronchoscope and then inflate the balloon. The modified insertion technique provides a better view during the procedure because only a guide wire needs to be inserted into the working channel, rendering minimal influence to suction capacity; this means that the technique could be applied to more massive bleeding cases. It requires no special catheter or complicated maneuver and is technically easy. We believe modified balloon tamponade is the preferred procedure in hemothysis patients whose bleeding is located at the lobar level or beyond.

References