Medical Image of the Week: Endovascular Intervention for Life-threatening Hemoptysis

Video 1. Pre-embolization video showing collateral vessels.

Video 2. Post embolization video showing the endovascular implants and cessation of collateral flow.

Idiopathic pulmonary arterial hypertension (PAH) is an uncommon life threatening disease characterized by a progressive increase in pulmonary vascular resistance with subsequent right ventricular failure and death. Hemoptysis is known to be one of the complications in PAH patients although the exact incidence and mechanism of hemoptysis remains unclear (1,2).

Ours is a case of a 40-year-old woman with known severe idiopathic pulmonary hypertension who was admitted for recurrent episodes of hemoptysis for the past one month. On her first presentation with non-massive hemoptysis, she underwent elective embolization with Amplatzer® vascular plug (St. Jude Medical, St. Paul, MN USA) of the aorto-pulmonary collaterals. These included a large collateral off the right subclavian artery, right internal mammary artery and a large collateral off the descending aorta to the right lung (Video 1). Her hemoptysis resolved. She was admitted seven days' post first embolization with massive hemoptysis, and immediately underwent repeat embolization with Onyx® (Medtronic, Minneapolis, MN USA), a non-adhesive liquid embolic agent. Embolization was performed on the right intercostal arteries, left bronchial artery, with some abnormal vessels noticed (Video 2). No active bleeding was visualized during the procedure. Hemoptysis resolved once again.

The management of hemoptysis in patients with PAH remains indeterminate. However, embolization of bronchial arteries has been recommended as an effective method of managing PAH patients with recurrent hemoptysis to control the acute hemorrhage (2,3).

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