

Michael W. McMahon
L4
LSU Health Sciences Center, New Orleans, LA

Mentor's Name: Dr. Hector Ferral
Mentor's Affiliation: LSU Department of Interventional Radiology; University Medical Center

“Pulmonary Pseudoaneurysm due to Penetrating Thoracic Trauma”

Background: Pulmonary artery pseudoaneurysm (PAP) is a rare but potentially lethal condition. Acquired PAPs are most commonly caused by iatrogenic trauma and infectious disease. Infectious causes include bacterial endocarditis, tuberculosis, mucormycosis, and pyogenic infection. Traumatic PAPs can be caused iatrogenically by pulmonary artery catheterization. Very few cases have been described of patients developing PAP as a complication of a gunshot wound to the chest. Radiologic findings of PAP include hilar enlargement or a new focal lung mass on chest radiograph. CT angiography shows saccular or fusiform areas of dilatation with homogenous contrast filling which occurs simultaneously with the pulmonary artery. The lesions are treated by endovascular repair or surgery.

Case Description: In this study, we describe the case of a patient who developed a pseudoaneurysm of a middle lobe branch of the right pulmonary artery as a complication of a gunshot wound to the chest. CT angiography of the chest twelve days after presentation showed enlarging active extravasation in the right upper lung. The Interventional Radiology (IR) team was consulted for possible intervention and based on imaging studies, pulmonary pseudoaneurysm was suspected. The lesion was located in the right upper or middle lobe and measured 3.9 cm by 3.5 cm. The IR team recommended angiography with likely embolization. On day fifteen after presentation, the patient underwent a pulmonary arterial pseudoaneurysm embolization. Access was obtained in the right common femoral vein. The pseudoaneurysm was identified in a branch of the right middle lobe, with no outflow and was identified as an end lesion. Access to the lesion was achieved with a microcatheter, and the lesion was embolized with 20 mm framing coils and 20 mm hydrogel coils until complete obliteration of the lesion was achieved.

Results: The patient remained stable after the procedure. Two days post embolization the patient received a follow up CT angiography of the chest with plans to discharge if stable. CT Angiography of the chest three days post embolization showed no active extravasation, as well as decreased hematoma and hemothorax. The patient was discharged with appropriate follow up.

Conclusion: Pulmonary artery pseudoaneurysm is a serious condition due to the high rate of mortality in the event of a rupture. While this complication is very unusual, there should be an index of suspicion for these types of lesions in patients with penetrating thoracic trauma who present with hemoptysis and the radiologic findings described above. While surgery is appropriate in rare cases, endovascular placement of coils is an effective form of treatment, which results in obliteration of the lesion and significantly decreased risk to the patient.

