Traumatic Pulmonary Artery Dissection

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Case Presentation

A 43-year-old restrained female passenger with an unremarkable past medical history was involved in a frontal high-speed motor vehicle accident (60 mph) with another vehicle presented to our facility. The patient had reported loss of consciousness on impact. She was extricated and ambulated by emergency medical services. The driver of the vehicle was deceased on scene. Upon arrival, she was alert and fully oriented (GCS 15) complaining of sternal and abdominal pain due to significant thoracoabdominal trauma. She denied: palpitations, shortness of breath, numbness or tingling. Vitals signs were unremarkable. The patient was screened via chest and pelvic x-ray which displayed multiple rib fractures. The Computed Tomography pulmonary angiogram displayed a post traumatic pulmonary artery dissection (**Image 1**). Other Computed Tomography findings included multiple (C5-C7) right transverse process fractures.

Introduction

Pulmonary artery dissection (PAD) is a rare condition usually diagnosed in patients exhibiting pulmonary arterial hypertension (PAH). Trauma-induced pulmonary artery dissections are an extremely rare incidence in the literature. Most patients with PAD aren't diagnosed until post-mortem due to the condition being evinced as cardiogenic shock or sudden death when the dissection progresses rapidly. We report a case of pulmonary artery dissection developing secondary to thoracic trauma. Photographic signed consent was acquired from the patient, including IRB approval for the case report.

Case Imaging

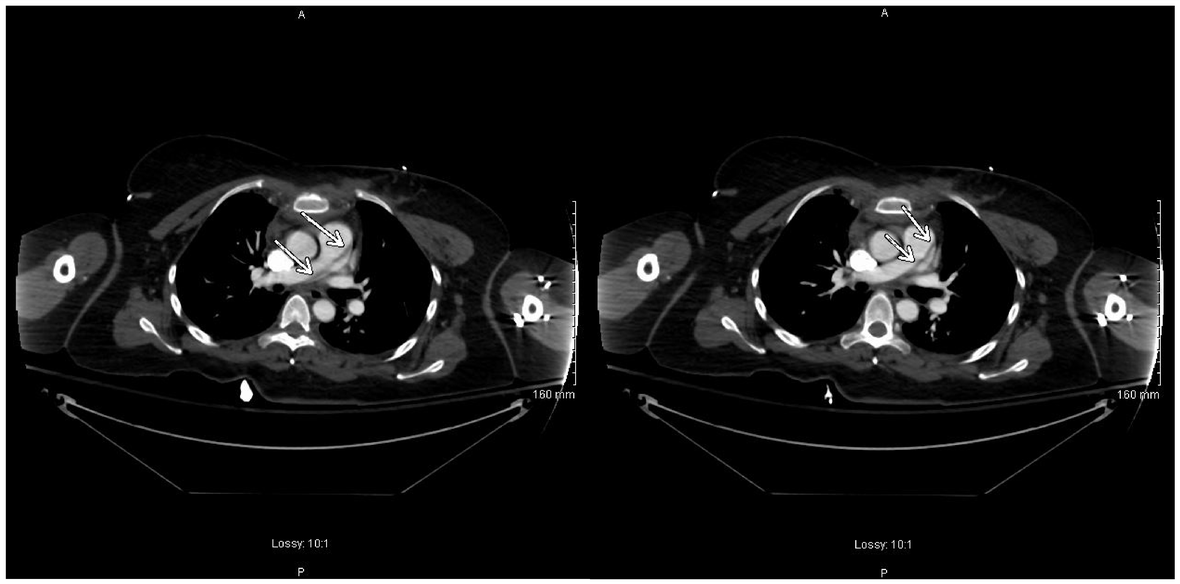

Image 1. Computed Tomography angiogram of the chest displaying post-traumatic pulmonary artery dissection (white arrows).

Discussion

A large percentage of reported PADs are a complication of PAH that lead to a pulmonary artery pseudo or false aneurysm. PADs have also been associated with congenital heart defects such as patent ductus arteriosus, which can lead to suspended high pulmonary artery flow rates and pulmonary hypertension. COPD has also been repeatedly correlated to the condition; though, this group of patients rarely report PAD. Although few cases are present in the literature, to our knowledge, this is the first report of a patient with a trauma induced pulmonary artery dissection surviving an injury with multiple secondary injuries and surgeries.

Conclusions

A large percentage of reported PADs are a complication of PAH that lead to a pulmonary artery pseudo or false aneurysm. PADs have also been associated with congenital heart defects such as patent ductus arteriosus, which can lead to suspended high pulmonary artery flow rates and pulmonary hypertension. COPD has also been repeatedly correlated to the condition; though, this group of patients rarely report PAD. Although few cases are present in the literature, to our knowledge, this is the first report of a patient with a trauma induced pulmonary artery dissection surviving an injury with multiple secondary injuries and surgeries.

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