Case	(582) Synchronous aortic and pulmonary intramural hematoma
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CASE PRESENTATION

A 93-year-old woman was referred to the emergency department with intense, oppresive centrothoracic pain of sudden onset. Physical examination revealed abnormal awareness of breathing and occasional profuse sweating. Laboratory tests revealed a lactate dehydrogensase level of 216 U/L and DDimer test of 3.6 mg/L.

Non-contrast CT showed a semilunar cuff of high attenuation (60-70 HU) around the aortic lumen, that was non enhancing on post-contrast CT, starting in the aortic root with involvement of the right brachiocephalic trunk and extending distally until the proximal portion of the celiac trunk.

Moreover, an other focal, crescent and high-attenuating region of eccentrically thickened wall involving the pulmonary artery trunk (on non-contrast CT) was also seen.

Other findings included a contrast-filled, out-pouching of the wall of the ascending aorta and the visualization of an intimal flap proximal to the outlet of the inferior mesenteric artery.

DISCUSSION

These findings are highly suggestive of intramural hematoma of the aorta and of the pulmonary artery, penetrating ulcer involving the ascending aorta and dissection of the descending aorta. Evaluating our patient´s acute chest pain and choosing the appropriate imaging-study and its protocol with the highest diagnostic performance, was the first radiological challenge.

Therefore, Triple-Rule-Out CT Angiography was performed in order to examine aorta, pulmonary artery and coronary vessels.

The term Acute Aortic Syndrome is used to describe three closely related emergency entities of the thoracic aorta: classic Aortic Dissection, Intramural Hematoma and Penetrating Atheroesclerotic Ulcer. Particularly, Intramural hematoma (IMH) is usually observed in the wall of the aorta and is characterized by the absence of a detectable intimal tear with hemorrhage into themedia.

Because ascending aorta and pulmonary trunk hace a common adventitia at the root of the great vessels, blood from ruptured IMH in ascending aorta can extend along the pulmonary artery. Investigators reported the intramural hematoma may compress pulmonary artery and restrict the blood flow of pulmonary artery, mimicking pulmonary embolism.

However, spontaneously developed pulmonary intramural hematoma is a rare event most commonly associated with underlying cardiac disease such as patent ductus arteriosus or valvular pathology.

Invasive treatment was dismissed and no further radiological studies were performed. Finally, the patient presented a cardiorrespiratory arrest with absence of vital signs.

CONCLUSION

Pulmonary artery dissection or hematoma are often lethal and must be taken into consideration when treating patients with severe pulmonaty hypertension. Sudden onset of dyspnoea or chest pain are the main alarm symptoms, and non-invasive imaging techniques are the preferred diagnostic method.

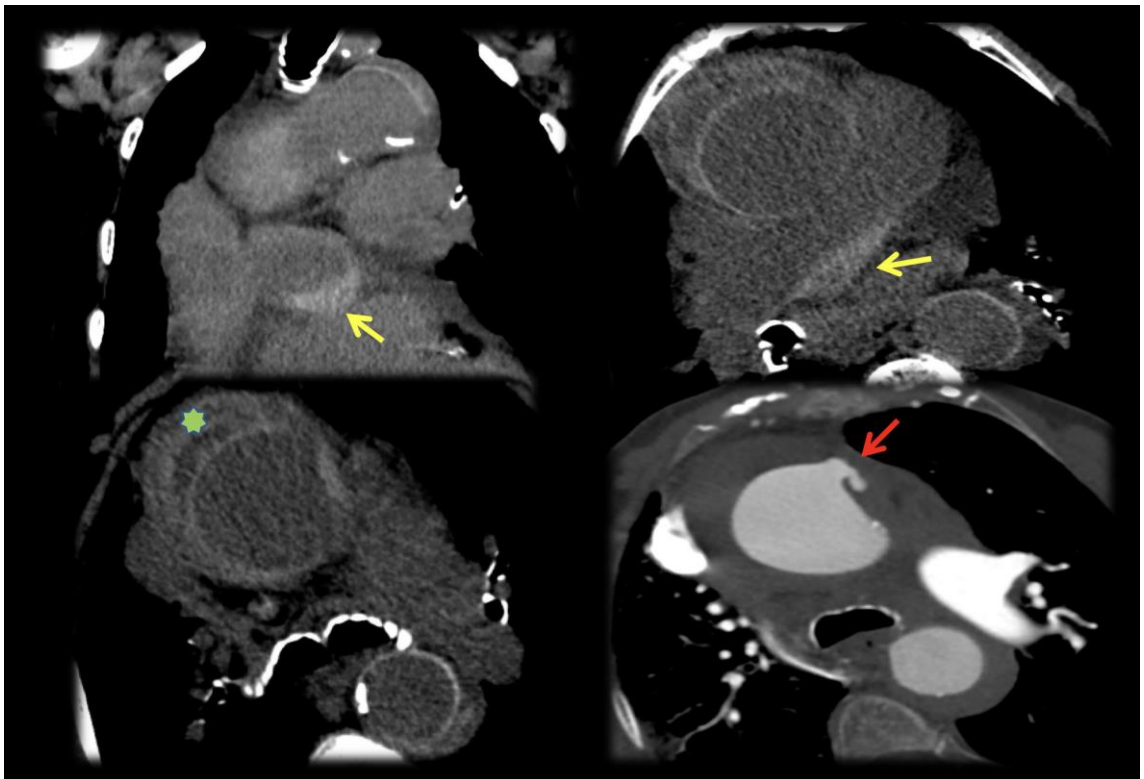

Fig.1 Non-contrast CT showed a semilunar cuff of high attenuation (60-70 HU) around the aortic lumen , that was non enhancing on post-contrast CT suggestive of intramural hematoma (green star) as well as involving the pulmonary artery trunk (yellow arrows); contrast-filled, out-pouching of the wall of the ascending aorta suggestive of penetrating ulcer (red arrow)

BIBLIOGRAPHY

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