

Association of aortic dissection and artery pulmonary dissection: case report

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Section: Cardiovascular

Case Type: Clinical Cases

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Patient: 62 years, male

Clinical History:

It is the case of a patient with a very peculiar association: dissection of the aorta and the pulmonary artery (as illustrated by the CT images). The assumption of an extension of intimal cleavage through an permeable ligamentum arteriosum is proposed.

Imaging Findings:

This is the case of a patient aged 62 years, who underwent a surgical treatment (in 2002) for a Stanford type A aortic dissection (developed in a context of hypertension). A CT angiography control was performed (GE 32 multislices machine). In order to delineate the aorta to the accuracy necessary an iodinated contrast material was injected into a peripheral vein. Contrast was injected and the scan performed using a habitual bolus tracking method.

There were the usual findings of the aortic dissection (intimal flap) extending from the aortic arch to the left iliac artery and also backward to the left subclavian artery. We were very amazed by the presence of an intimal flap in the left pulmonary artery from its origin on the pulmonary trunk to the left basal pulmonary artery. The diagnosis of aortic dissection and concomitant pulmonary artery was made (this aspect was already reported on the initial scan). This association is extremely rare and exceptionally reported in the literature and sometimes misinterpreted with the "artifact" hypothesis of the presence of contrast iodine on the superior vena cava.

Discussion:

Aortic dissection is a medical emergency and can quickly lead to death, even with optimal treatment. In fact, it is a tear in the wall of the aorta that causes blood to flow between the layers of the wall of the aorta and force the layers apart. In an aortic dissection, blood penetrates the intima and enters the media layer. Two types of dissection are distinguished by the Stanford classification: type A - affecting the ascending aorta, and type B - originates in descending aorta, rarely extends proximally. The blood will travel through the media, creating a false lumen (the true lumen is the normal conduit of blood in the aorta). Separating the false lumen from the true lumen is a layer of intimal tissue. This tissue is known as the intimal flap. The vast majority of aortic dissections originate with an intimal tear in either the ascending aorta (65%), the aortic arch (10%), or just distal to the ligamentum arteriosum in the descending thoracic aorta (20%). The dissection may extend backwards and can affect the aortic arch main branches and also the digestive branches, renal and iliac arteries.

Our observation, by demonstrating the persistence of the image dissection on both CT's successive exam, and extending to the left pulmonary artery, can confirm with certainty the diagnosis of aortic dissection and dissection of the pulmonary artery.

The possibility of a dissection's extension from aortic arch to the origin of the left pulmonary artery through the

ligamentum arteriosum (remains of a prenatal ductus arteriosus) was proposed. The origin of the dissection located from both sight of the ligamentum arteriosum it's strongly suggest this hypothesis.

Differential Diagnosis List: Association of aortic dissection and artery pulmonary dissection

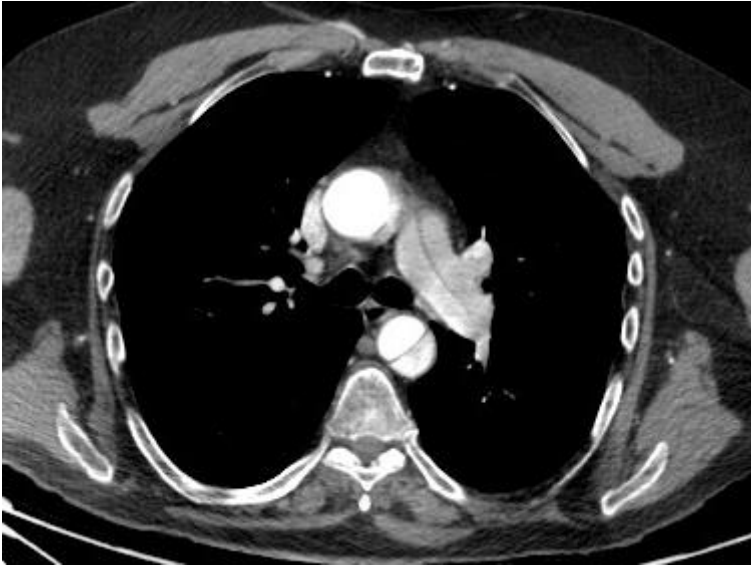
Final Diagnosis: Association of aortic dissection and artery pulmonary dissection

References:

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Figure 1

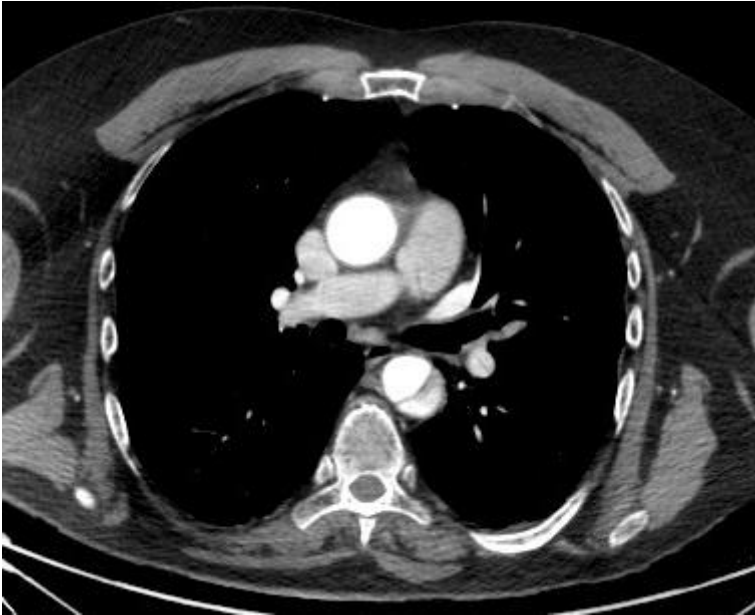
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Description: Left pulmonary main artery dissection **Origin:**

Figure 2

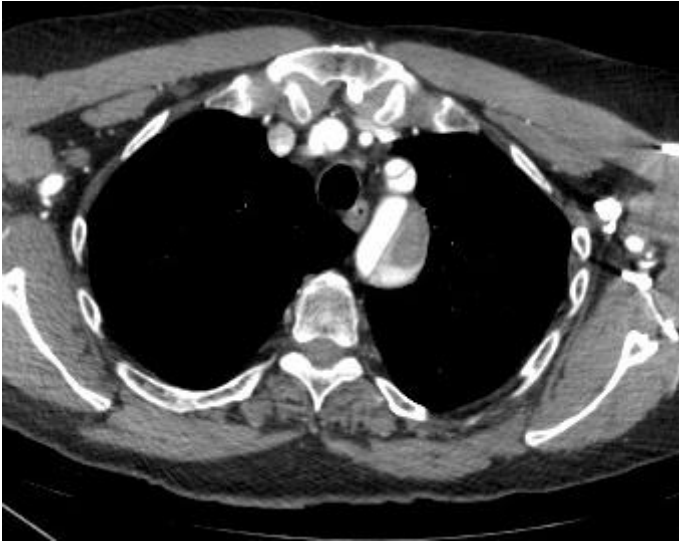
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Description: Double dissection: in the descending thoracic aorta and left basal pulmonary artery
Origin:

Figure 3

a



Description: Extension of aortic dissection to the left subclavian artery. **Origin:**