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Clinical Image

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A rare case of left pulmonary artery originating from the ascending aorta revealed by desaturation in young patient with COVID-19 infection

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Clinical image description

A 28 year old male, with no significant past medical history, was admitted to Emergency Department (ED) for worsening shortness of breath and chest pain. A week prior to his admission, he had tested positive for covid-19, using the reverse transcriptase-polymerase chain reaction (RT-PCR) on nasopharyngeal swabs, his initial symptoms were cough and fatigue. He had started the treatment recommanded by the moroccan committee of experts at the Ministry of Health; hydroxychloroquine 200 mg twice daily, azithromycin 500 mg the first day then 250 mg four times daily and vitamines C, D and Zinc supplementation.

On examination, the patient was alert, his respiratory rate was 32 breaths per minute, oxygen saturation was 88% on room air then improved to 95% on 4 L/min of oxygen via a nasal cannula, his blood pressure was 130/80 mmHg and his heart rate was 92 beats per minute, he was apyrexial. He weighed 59 kg and he was 170 cm tall (body mass index = 20.41 kg/m^2).

No major inflammation was evidenced in blood tests; inflammation markers were mildly raised.

Computed tomography (CT) of the thorax revealed a left lower lobar consolidation. The affected lung area was estimated to be less than 5% (Figure1). In view of minimal lung involvement, a Contrast-Enhanced Computed Tomography (CECT) of the thorax was performed; it revealed an aneurysmal dilation of the left pulmonary arteries originating from the ascending aorta and measuring 53 mm at the hilar level. Thrombosis of the aneurysm of the right upper lobar artery with enhancing defect in left lower lobe subsegmental branches: left lower lobe distal pulmonary embolism (Figure 2).

Therapeutic anticoagulation was started using enoxaparin 1 mg/kg twice daily, and patient was discharged 3 days later under the care of cardiology team without any oxygen support with saturation oxygen at 94%.

The anomalous origin of the left pulmonary artery from the aorta is extremely rare, it accounts for 0.03% of all congenital heart defects [1,2]. It can be isolated or associated to other cardiac malformations such as tetralogy of Fallot, Ventricular Septal Defect, absence of the pulmonary valve, aberrant right or left subclavian artery, Double Outlet Right Ventricle and major

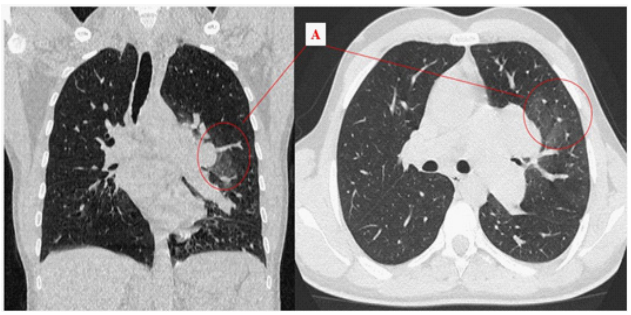

Figure 1: Computed tomography chest showing a left lower lobar basal consolidation (A).

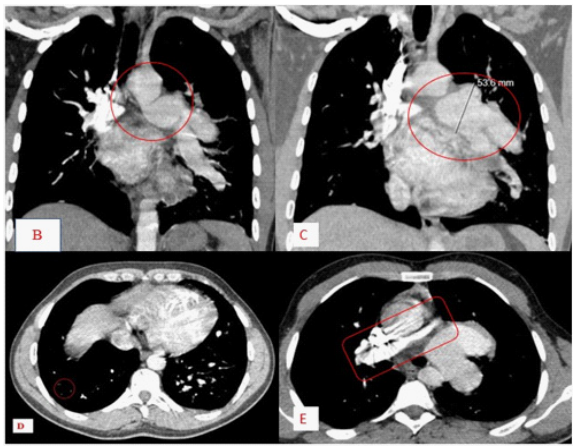

Figure 2: CECT chest: (B) left pulmonary artery arising from ascending aorta. (C) thrombosed aneurysm of left pulmonary artery measuring 53 mm. (D) left distal pulmonary embolism. (E) right pulmonary artery with pulmonary artery trunk.

aortopulmonary collateral vessels supplying the right lung. The diagnosis can be made by echocardiogrphy or by Computed Tomography, few cases have been diagnosed by Magnetic Resonance Imaging MRI. Without surgery, the long-term prognosis is guarded [3].

In our patient, CECT was done to investigate other aetiology of hypoxia in view of minimal lung damage on CT. It showed a left pulmonary artery originating from the ascending aorta with a thrombosed aneurysm measuring 53 mm complicated by a distal pulmonary embolism, which explained the desaturation.

Through this observation, the authors emphasize the importance of CECT to determine the cause of unexplained low oxygen saturation. It allowed in this case to diagnose a pulmonary embolism along with congenital heart disease.

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