



ANOMALOUS RIGHT CORONARY ARTERY WHERE THE CONUS BRANCH SUPPLYING THE RIGHT LOWER LUNG

Cardiology

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ABSTRACT

The blood supply to lungs is from bronchial arteries. Here we discuss the rare case, where the lower part of the right lung is supplied from the right coronary artery, which was incidentally detected. We had 54-year-old male with history of chest pain. ECG was showing acute inferolateral wall MI, so he was thrombolysed. Subsequently CAG was done, which showed recanalized RCA and LAD cut off. However, there was anomalous branch conus branch from RCA, which was supplying right lower part of the lung, which is extremely rare coronary anomaly. Patient did not have any respiratory symptoms.

KEYWORDS

Blood supply of right lung, right coronary artery

INTRODUCTION

The bronchial artery is the main source of blood supply for the bronchi. The bronchial arteries provide the normal systemic arterial supply to the lungs after birth and generally comprise one to three small arteries from the upper dorsal aorta or right intercostal artery supplying each lung. Arterial supply of the lungs from a coronary artery is extremely rare. We describe a rare case; blood supply of right lower lung is from right coronary artery.

Case Report

A 54-year old diabetic male has presented to our centre with history of chest pain. There was no history of any respiratory symptoms in the past. At admission, his blood pressure was 135/80 mmHg; physical examination, laboratory results were normal. Electrocardiography was done immediately, which showed Q and ST elevation in inferolateral leads suggestive of inferolateral leads wall myocardial infarction. He was thrombolysed in emergency using streptokinase. Subsequently, he was taken for angiography, which was done through the right radial approach. Angiography showed double vessel disease with recanalized RCA and LAD cut off. RCA had anomalous branch originating from the proximal RCA giving supply to the lower part of the right lung (as shown in images 1-4). His previous history was negative for cardiovascular disease.

A chest X-ray was within normal limits. Pulmonary angiography was not performed. The patient was medically managed with a calcium channel blocker and nitrate. He had no further chest pain after discharge.

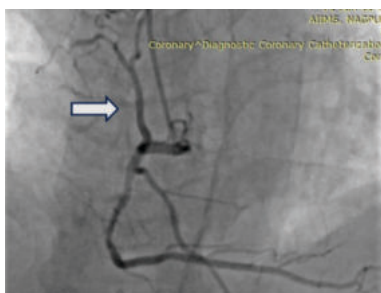


Fig. 1



Fig. 2

Coronary angiogram revealed a large abnormal artery (arrow) arising from the proximal right coronary artery (Fig. 1) supplying blood to vessels within the right lower lung (Fig. 2).

DISCUSSION

Systemic arterial supply to the lungs has been described in many cases of congenital heart and lung diseases, which are usually diagnosed during infancy or early childhood. However, in some patients, congenital diseases are diagnosed during adulthood because their symptoms are absent or manifest late. Systemic arterial supply to the lungs can also occur in acquired lung diseases, such as bronchiectasis and inflammatory lung disease. In some cases, identification of the systemic arterial supply to the lungs may be critical in establishment of the correct radiologic diagnosis. Congenital diseases encompass bronchopulmonary sequestration and congenital pulmonary venolobar syndrome, in which the involved lung parenchyma is supplied by the aberrant systemic arteries. An anomalous systemic artery can also supply an area of otherwise normal lung parenchyma. In acquired diseases, hypertrophied normal systemic arteries supply the lungs. Hypertrophied systemic arteries include the bronchial arteries, intercostal arteries, internal mammary arteries, inferior phrenic arteries, branches of the thyrocervical trunk, branches of the hepatic arteries, and branches of the abdominal aorta.¹

The various possibilities for normal and abnormal systemic arterial supplies to the lungs comprise (1) the bronchial arteries, the normal systemic arterial supply after birth; (2) a patent ductus arteriosus, a potential intrauterine supply that is considered anomalous after birth; (3) major aortopulmonary collateral arteries (MAPCAs); (4) a direct origin of the right or left pulmonary artery from the ascending aorta; and (5) other systemic arteries including connections between coronary arteries and pulmonary arteries.²

Another congenital anomaly, which can be associated with anomalous coronary artery supplying lungs is pulmonary sequestration. It is an uncommon, often congenital, anomaly that affects both children and adults. It is thought to account for 0.15 to 6.4% of all congenital pulmonary anomalies and is usually located in the lower lobe of the lung.³⁻⁵ The sequestered segment consists of embryonic lung tissue that has no identifiable tracheobronchial communications and receives systemic blood supply. The blood supply derives most commonly from the thoracic or abdominal aorta, but arteries occasionally arise from other sites including the celiac, splenic, intercostal, subclavian, or renal arteries. Pulmonary sequestration supplied by a coronary artery is extremely rare.⁴⁻¹¹ Our patient did not have any respiratory symptoms or history of pneumonia in the past. His chest X ray was normal, so he was subjected to CT scan of the chest.

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