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A rare case of broncho-coronary fistula presenting with myocardial ischemia

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Introduction: The Coronary artery fistula is an abnormal communication between a Coronary artery and either a cardiac chamber or a major vessel. A CT Coronary Angiography (CTCA) is used for accurate diagnosis. We would like to report a case of Broncho- Coronary fistula (BCF) who presented with signs of myocardial ischemia.

Case Presentation: A 59-year-old woman, with past medical history of Hypertension, Asthma, Ectopic Atrial Tachycardia and Coronary Atherosclerosis, who presented to ED with complaints of chest pain and palpitation for past several days. The chest pain was described as sharp 5/10 on pain scale, sub-sternally located, intermittent, did not radiate, lasted about 15 minutes and was accompanied by palpitation. The patient's medications included Lopressor and Sotalol. On physical examination, the patient's vitals were within normal range except BP: 152/72 mm Hg. Initial Electrocardiogram showed Paroxysmal Atrial Tachycardia with sinus rhythm, it was corrected into sinus rhythm after about 30 minutes without any intervention. The patient was admitted on telemetry floor. The stress test showed mild-to-moderate ischemia. Interestingly, CTCA showed large branch arising from right coronary artery that extends posteriorly between Aorta and right ventricle which gives multiple spider-like collateral branches extending into both hila and create a tangle of vessels, connecting them to bronchial artery, consistent with Broncho-Coronary Fistula (BCF). Cardiac catheterization confirmed the finding and the patient underwent transcatheter coil embolization treatment for the fistula. The patient had uncomplicated post-operative recovery with complete relief of symptoms.

Discussion: Coronary artery fistulas vary widely in their morphological appearance and presentation. These fistulas are congenital or acquired coronary artery abnormalities in which blood is shunted in to a cardiac chamber, great vessel or other structures, bypassing the myocardial capillary network. The majority of these fistulas arise from the right coronary artery and the left anterior descending artery. BCF are congenital with few hemodynamic consequences, and may remain closed due to similarity of filling pressures at these two sites or may be secondary to Pulmonary artery occlusive disease or chronic pulmonary inflammation. These pulmonary changes may cause a dilation of the fistula and make it functional, causing angina pectoris by coronary steal syndrome, which is the most common symptom. Clinical manifestations vary considerably and the long-term outcome is not fully known. The patients with coronary fistulas may present with hemoptysis, congestive heart failure, angina, endocarditis, arrhythmias, or myocardial infarction. CT Coronary Angiogram (CTCA) and cardiac catheterization are used for accurate diagnosis and for assessment of coronary hemodynamics. Therapeutics options include surgical correction, transcatheter coil embolization and placement of stent graft.

Conclusion: BCF is a very rare condition. A high index of suspicion is needed for accurate diagnosis and prompt treatment to avoid potentially life threatening complications.

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