Transcatheter Coil Embolization of Coronary Artery-Left Atrium Fistula

Muzaffar Ali* and Zubair Akram
Department of Cardiology, AllamaIqbal Medical College, Pakistan

Abstract
Coronary artery fistulas are rare congenital abnormality. Coronary artery fistula draining into left atrium is a rare entity.In this case report we describe the patient whose with a large coronary artery fistula (CAF) draining into left atrium. As patient was having symptoms of chest pain and dyspnea on effort despite of normal coronaries. We decided to close fistula. It was successfully treated with coil embolization using glide catheter 4F via extra backup 6F Guiding catheter, leading to improvement of symptoms. Coil embolization is readily accessible, relatively inexpensive and acceptable alternative to surgery.

INTRODUCTION
Congenital Coronary Artery Fistula is defined as a rare an anomalous connection between a coronary artery and a major vessel or a cardiac chamber [1]. CAF are rare, accounting for approximately 0.1% cardiac abnormalities [2]. There clinical importance is usually in adulthood due to increased risk of complications such as heart failure, myocardial ischemia, infective endocarditis, arrhythmia and CAF rupture [3].

Catheter based interventional techniques have become the procedure of choice and in the current era and has emerged as an acceptable alternative to surgery [4]. We describe a patient who underwent successful transcatheter closure of coronary artery fistula with coil embolization.

CASE REPORT
A 55-year-old hypertensive male was referred to our hospital with complaints of chest pain on exertion and dyspnea on effort (FC-II) for one year. He was hypertensive with good control of blood pressure with medicine. His hemoglobin, renal profile and fasting lipid profile was within normal limits. ECG was also unremarkable. Echocardiography revealed good LV systolic function and no other remarkable finding. Because angina pectoris was suspected, coronary angiography was performed, which revealed a fistula from the Left Circumflex Artery (LCX) to the Left Atrium (LA). There was no significant atherosclerotic disease noticed in the coronary arteries. CT angiogram confirmed moderate to large coronary artery fistula measuring 2.5 mm originating from left circumflex to left atrium. The main indication for closure of coronary artery fistula was progressively worsening symptoms for dyspnea and chest pain on effort (Coronary Steal Phenomena). Because his symptoms were exacerbated gradually, we decided to perform percutaneous transcatheter intervention. After venous administration of 5000 IU heparin, percutaneous transcatheter closure was performed via the right radial artery. Left main stem was engaged with XB-6 F guiding catheter. A floppy guide wire (Fielder FC (0.014") was placed into fistula. The CAF from LCX was catheterized selectively by Glide Catheter 4F (1.2 mm) via XB 6F (mother-child technique). A glide catheter 4F was advanced over the guide wire into the fistula. The guide wire was withdrawn and a non-detachable coil MWCE-35-14-4 Nester was placed into proximal part of fistula originating from LCX and draining into LA with the back end of exchange length (260cm) glide wire (0.035”). After embolization of coil, coronary angiography show complete closure of fistula and no residual shunt. The patient remains free of symptoms during months of followup. It is suggested that the coil diameter is slightly larger than the vessel diameter (30% larger) to prevent coil displacement and migration.

DISCUSSION
Coronary artery fistula is a rare condition of a direct communication between a coronary artery and one of cardiac chambers, the coronary sinus, the SVC or the Pulmonary artery [5]. The pulmonary artery is the most common site of distal communication (37%) followed by Right Atrium (24%), Left Ventricular (15%) and Left Atrium (9%). Early closure is mandatory to prevent complications [6].The treatment of CAF are divided into conservative therapy, surgical and catheter

based intervention. The success of surgery is high but has significant mortality and morbidity risk. Transcatheter closure of CAF with coil is a valid option, and can be regarded as an acceptable alternative to surgery nowadays [7]. Advantage of using coils is readily accessible & relatively inexpensive, prepared easily, and deployed rapidly. Patients with large fistula who are symptomatic or having thermo dynamically significant shunt be treated [8].

CONCLUSION

Advantage of using coils is readily accessible & relatively inexpensive, prepared easily, and deployed rapidly. Patients with large CAF with symptoms should be treated.

REFERENCES