Uncommon giant circumflex coronary artery fistula

Authors: Alejandro Junco-Vicente, Pablo Flórez, Alfonso Suárez, Helena Cigarrán, Elena Velasco, María Martín

Article type: Clinical vignette

Received: April 10, 2020.

Accepted: May 19, 2020.

Published online: May 26, 2020.

ISSN: 0022-9032

e-ISSN: 1897-4279
TITLE: Uncommon giant circumflex coronary artery fistula

Short title: Uncommon giant circumflex coronary artery fistula

Authors: Alejandro Junco-Vicente¹, Pablo Flórez¹, Alfonso Suárez¹, Helena Cigarrán², Elena Velasco³, María Martín¹

Centre: ¹EN): ¹ Clinical Heart Management Area and ² Radiodiagnosis Service Central University Hospital of Asturias. Oviedo; ³ Cardiology Section of Valle del Nalón Hospital. Asturias. Spain.

Corresponding author: Alejandro Junco-Vicente, M.D.

E-mail address ajuncovicente@gmail.com

Adress: Central University Hospital of Asturias; Ave. Roma, – 33011, Oviedo, Asturias, Spain. (+34 985 108 000)

We declare that there are no conflicts of interest or financing in the realization of the document.

Word count: 397.
Congenital coronary fistulas are an unusual anomaly with an estimated prevalence, according to the series between 0.002-0.3% of the population, although, in fact, its incidence and real prevalence are unknown due to its, in general, asymptomatic nature [1-4]. They consist of a communication between the coronary arteries and one of the great vessels (arteries or veins) or with a cardiac chamber [3]. We report the case of a 74-year-old woman, with long-standing hypertension and diabetes mellitus, who undergoes invasive coronary angiography due to the presence of oppressive chest pain on exertion. No significant obstructive lesions were detected, but a circumflex artery-dependent fistula was found (Figure 1A). At that time, no functional tests were performed. Transthoracic echocardiography excluded structural cardiac abnormalities and ECG at rest was unspecific. For a better characterization, of both its course, anatomy and of the drainage mode a cardiac computed angiography with 3D reconstruction was performed (Figure 1 B-C-E). A large fistula is seen from the circumflex artery to the bronchial arteries of the left lower lobe, and a very tortuous course was described. Due to the high number of diagnostic procedures, the casual finding of these malformations is increasing [1-4]. Its origin, which is usually unique, can be in any of the coronary arteries, with those originating in the right coronary artery being the most common (1, 4, 5). Nevertheless, in the case series circumflex artery being the most infrequent [1]. Typically, are small and they do not require treatment, but the clinical depends on the severity of the blood shunt. Most cases in series are left-right shunts [1, 2]. A phenomenon of coronary flow theft can occur, most noticeable when draining into the right circuit (lower pressure), with the consequent supply and demand imbalance responsible for ischemia and even, in some cases, myocardial necrosis [1-3]. The therapeutical decision is difficult and several factors that are still under discussion because the scientific evidence is based only on case series [2-3]. When it generates persistent symptoms or there is high risk criteria, for example, myocardial damage, arrhythmias, pulmonary hypertension or ventricular dysfunction, the fistula can be closed, either by surgery
[5] or, more novel, percutaneously, as described by other authors [2, 4]. In our case, since the ischemia detection test, perfusion study (radionuclide-SPECT), was negative (Figure D), it was decided to follow up the patient, which currently remains asymptomatic with antianginal drugs (beta blocker).
REFERENCES:


**Figure 1.** A: Coronary angiography showing the fistulous path with origin in the circumflex artery (arrow). B: Axial section at the level of large vessels of computed angiography where the tortuosity of the coronary fistula is reflected (arrow). C: 3D reconstruction of computerized angiography. D: Radionuclide-SPECT perfusion tomography with normal perfusion at effort phase. E: 3D reconstruction of the computerized angiography showing the long fistulous path to the bronchial arteries (arrows).