

# **Variant coronary anatomy in daily practice of an interventional cardiologist (experience with 30.000 coronary angiograms)**

**Aim of the work:** to study the frequency of various minor anatomical anomalies of the coronary arteries found during 30.000 coronary angiography studies. To study the role of various types of the anomalies in myocardial ischemia and to analyze the peculiarities of PCI on the coronary arteries with uncommon anatomy.

**Material and methods:** we analyzed 30.000 unique coronary angiograms of the non-selected patients managed in the Center of Interventional

Cardioangiology of Sechenov University (Moscow, Russia) from 2012 through 2020. The average age of the patients was  $62,4 \pm 17,1$  years. 64,5% of them were males.

According to P. Angelini classification, the most clinically significant variants of the origin and the course of the coronary arteries were: a coronary artery arising from the contralateral anterior sinus and a single coronary artery (61 patients, 0,2%). The most frequent anomaly – the CxA arises from the right coronary sinus and has a retroaortic course – was found in 32 cases (0,1%). In the absence of atherosclerosis (natively or after successful PCI) such artery can provide sufficient myocardial supply

(FFR 0,96). The 2nd frequent anomaly, the RCA arising from the left coronary sinus, was found in 12 cases (0,043%). Herewith, in 8 cases the RCA had an interarterial course (between the aorta and the pulmonary artery, FFR 0,81), in 4 cases the artery had a retroaortic course (mean FFR 0,96). The third anomaly in frequency – LM arising from the right coronary sinus – was present in 9 cases (0,03%): in 2 of them the artery was retroaortic (FFR 0,88), in 3 cases - precardiac (FFR 0,9), and in 3 cases – the artery had a course between the aorta and the pulmonary artery (FFR 0,78). A single coronary artery was found in 8 cases (0,026%): a single LCA - 3 cases, a single RCA - 5. The rarest anomaly,

seen only once artery (0,0033%), was the interarterial LAD arising from the RCA (FFR 0,78).

PCI was feasible in all cases of local significant atherosclerotic lesion of anomalous coronary artery origin. In most cases, the using of EBU 3 in complex with guide extensor helped to solve the problem of stable coaxial catheterization of the target artery and provided a appropriate guide support for PCI at all stages.

In the presence of interarterial course of a major coronary artery and documented ischemia in thees myocardial beds, in most cases CABG was advised.



