CASE REPORT
OPIS PRZYPADKU

NON-ST-ELEVATION ACUTE CORONARY SYNDROME DUE TO A TOTALLY OCCLUDED CORONARY ARTERY: A HISTORY OF TWO TWIN BROTHERS

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ABSTRACT
We present the image of two twin brothers aged 53. Within 18 months they both underwent acute coronary syndrome treated with percutaneous coronary intervention (PCI). This story shows that both twins had similar comorbidities (hypercholesterolemia and hypothyroidism) as well as the course of the acute coronary syndrome. Although in both cases the coronary artery was totally occluded (in one case – fresh occlusion, in the other – CTO), no STEMI presentation was observed. Therefore, thorough investigation is warranted in twins after the acute coronary syndrome in of them, even in case of no evident ischemia symptoms.

KEY WORDS: genetic predisposition; hereditary; coronary artery disease

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INTRODUCTION
Genetic predisposition to the development of coronary artery disease and myocardial infarction is characterized enough. Nevertheless, the lack of replication, and problems in the recognition of specific genes still pose a challenge at the molecular level. It is mainly associated with the phenotype heterogeneity and underlying genotypes. Below we present the image of two twin brothers aged 53. Both had a history of hypothyroidism and hypercholesterolemia.

CASE REPORT
In April 2018 one of them presented with non-ST-elevation MI (NSTEMI). Coronary angiography revealed proximal occlusion of the left circumflex artery, and subsequent successful percutaneous coronary intervention (PCI) with drug-eluting stent (DES) was performed (Fig. 1A-C). In echo at discharge akinesis of lateral and posterior wall was shown with ejection fraction (EF) of 45%. The patient received aspirin, ticagrelor, nebivolol, ramipril, atorvastatin and l-thyroxine.

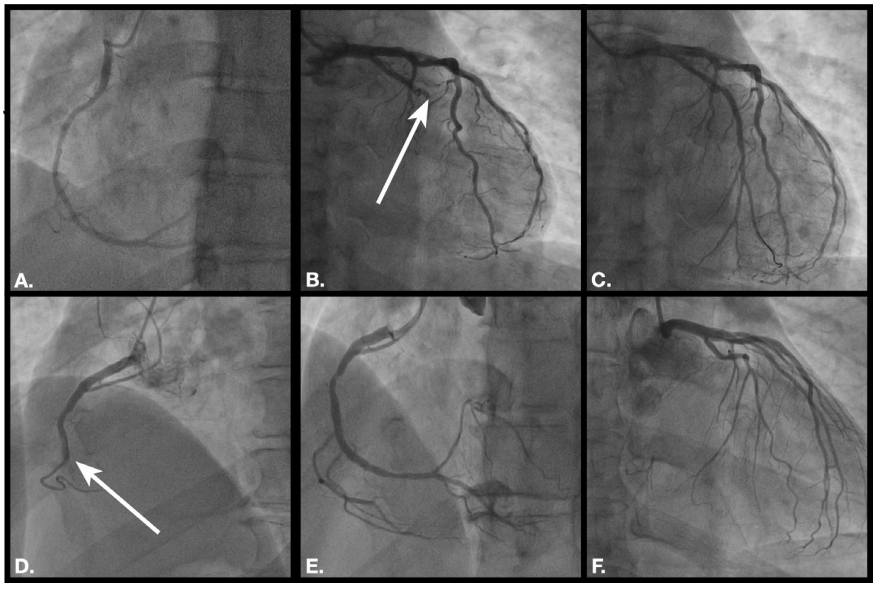

Fig. 1. Coronary angiography of two twin brothers. (A) Twin A – right coronary artery, (B) Twin A – left coronary artery with occluded left circumflex (white arrow), (C) Twin A – left coronary artery after successful percutaneous coronary intervention with drug-eluting stent implantation, (D) Twin B – right coronary artery occluded in the mid segment (white arrow), (E) Twin B – right coronary artery after successful percutaneous coronary intervention with drug-eluting stent implantation, (F) Twin B – left coronary artery.

One year and five months later a second brother during the exercise treadmill test developed a presyncope with a large drop in blood pressure. The patient was referred to the emergency department. Cardiac enzymes were negative, but taking into consideration the complete history invasive diagnostics was planned. Coronary angiography showed medial occlusion of the right coronary artery. Successful PCI with DES was performed in this chronic total occlusion (Fig. 1D-F). In echo hypokinesis of inferior wall was shown with EF of 53%. The patient received aspirin, clopidogrel, nebivolol, ramipril, atorvastatin and l-thyroxine.

This story shows that both twins had similar comorbidities (hypercholesterolemia and hypothyroidism) as well as the course of the acute coronary syndrome. Although in both cases the coronary artery was totally occluded (in one case – fresh occlusion, in the other – CTO), no STEMI presentation was observed. In previous studies it was unquestionably proved that genetic factors play the important role in the development of coronary artery disease or myocardial infarction [1, 2]. In particular, research studies on twins estimated the heritability of coronary artery disease and myocardial infarction to be approximately 50% to 60% [3]. Therefore, comprehension of genetic mechanisms for coronary artery atherosclerosis development will not only be of some use to understand the pathogenesis of the coronary artery disease, but may also be the foundation for creating specific prevention and treatment strategies [4].

CONCLUSIONS

In conclusion, this image shows that thorough investigation is warranted in twins after the acute coronary syndrome in one of them, even in case of no evident ischemia symptoms.

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Conflict of interest:

Authors declare no conflict of interest.

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