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## CLINICAL CASE

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### THE ASSOCIATION BETWEEN MYOCARDIAL INFARCTION IN A YOUNG PATIENT AND FAMILY DYSLIPIDEMIA

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#### ABSTRACT

*Family hypercholesterolemia (FH) is common monogenic dyslipidemia which causes cardiovascular diseases (CVDs) characterised by an increase in the serum concentrations of LDL cholesterol, the occurrence of xanthomata, and premature atherosclerosis. We examined a patient, hypertensive, smoker, with a history of myocardial infarction without ST-segment elevation handled with a pharmacologically active stent (a drug-eluting stent = a DES) on the anterior interventricular artery II (IVA II) in January 2016. He presented himself for retrosternal pain which began during the effort test which resulted positive, with signs of ischemia. This case study underlines the fact that, despite the progress made in medicine, FH remains underdiagnosed, with a delay in the onset of treatment.*

**KEYWORDS:** *myocardial infarction, family dyslipidemia*

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#### INTRODUCTION

Family hypercholesterolemia (FH) is common monogenic dyslipidemia which causes cardiovascular diseases (CVDs) characterised by an increase in the serum concentrations of LDL cholesterol, the occurrence of xanthomata, and premature atherosclerosis.[1] FH in a heterozygous state is more common, with a prevalence of approximately 1 out of 250 individuals.[2] These patients present a very high risk of developing coronary cardiac diseases and sudden death, except the case in which their condition is known and promptly treated. [3]

#### CASE PRESENTATION

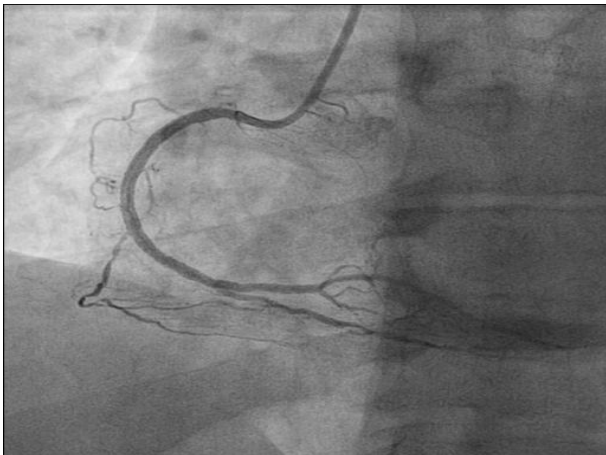
We examined a patient, B.C., aged 37, hypertensive, smoker (15 PA smoking index), with a history of myocardial infarction without ST-segment elevation handled with a pharmacologically active stent (a drug-eluting stent = a DES) on the anterior interventricular artery II (IVA II) in January 2016. He presented himself for retrosternal pain which began during the effort test which resulted positive, with signs of ischemia. The patient was diagnosed with dyslipidemia at a routine check-up in 2011, with LDL cholesterol of 207 mg/dl for which the recommendation received was a hypolipidemic regimen and statin 10 mg/day. We also mention the occurrence of auricular tuberous xanthomata

at bilateral elbows, for which the patient undergoes surgery periodically.

From the heredocolateral history – father with myocardial infarction and death occurring at 54. The physical examination reveals a patient with palpebral xanthelasma retroarticular tuberos xanthomata also at the level of the elbows, bilaterally, with abdominal obesity (BMI = 31.69kg/m<sup>2</sup>).



**Fig. 1 Right coronary artery (RCA) II with serial arterial stenosis of 70-99%**



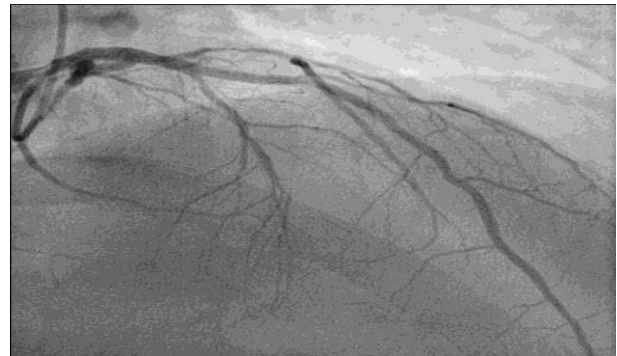
**Fig. 2 Image after PCI with DES x 2 on the RCA I-II**

Paraclinical: troponin I = 0.20 ng/mL, total cholesterol = 129 mg/dl, LDL cholesterol = 79mg/dl, HDL cholesterol = 21 mg/dl, triglycerides = 171 mg/dl under atorvastatin 20 mg/day; apolipoprotein B = 0.84 g/L, glycemia = 105 mg/dl, HbA1c = 5.4%, ECG with no significant changes of repolarization. Coronary angiography is performed which reveals the right coronary artery (RCA) II with serial stenosis 70-99% (figure 1), stent on the IVA II with slight endoluminal proliferation and severely infiltrated intermediate branch with

long stenosis 50-90% (figure 4). Since the patient has tricolorary lesions with progressive lesions on the RCA and the intermediate branch, percutaneous coronary angioplasty (PCI) is the treatment of choice with DES x 2 on the RCA I-II (figure 2), with subsequent treatment of the lesions in the intermediate branch (figure 3).



**Fig. 3 The intermediate branch with severe infiltration with long stenosis of 50-90%**



**Fig. 4 Stent on the IVA II with a slight endoluminal proliferation**

We are facing a young patient, with myocardial infarction and coronary lesions which have evolved very rapidly and given the high values of LDL cholesterol, the history of cardiovascular disease in a first degree relative and the occurrence of tuberous xanthomata and palpebral xanthelasma seen at the clinical examination, we decide to calculate the DLCN (Dutch Lipid Clinic Network) score, whose value is 14, thus suggesting the diagnosis of familial hypercholesterolemia [4].

## CONCLUSIONS

This case study underlines the fact that, despite the progress made in medicine, FH remains underdiagnosed, with a delay in the onset of treatment.[5,6] Making a diagnosis of FH in due time based on adequate case history and a thorough clinical examination, rapid management and vigilance of the angina disturbances could prevent myocardial infarction and could increase the life expectancy in such patients.

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