



## A Case Report of an Athletic Young Man with Coronary Heart Disease

Pr N. Fellat<sup>1</sup>, Dr. I.S. Azday<sup>2</sup>, Dr. M. Ibenchekroun<sup>3</sup>, Pr R. Fellat<sup>4</sup>

<sup>1,2,3,4</sup>Mohamed V University Medical School, Ibn Sina University hospital, Cardiology A department.

ARTICLE INFO	ABSTRACT
Published Online: 24 April 2023	Coronary heart disease (CHD) has known a recent decline in mortality, but remains one of the leading death causes worldwide. CHD in young adults, that was once rare is knowing a decrease of prevalence due to the rise of cardiac risk factors among this population. The clinicians should be aware of the existence of CHD among the youngest in order to avoid a delay in diagnosis, treatment and a worst prognosis.
Corresponding Author <b>Dr. I.S. Azday</b>	We present a Case of an athletic young man without any cardiac risk factor, who presented to our department for exertional angina pectoris related to a severe coronary heart disease.

### INTRODUCTION

Despite the recent decline in mortality of coronary heart disease (CHD), It remains the leading death cause of adults worldwide.

Although we are used to see CHD in patients older than 45 years old, young men and women can also suffer from it. (1) The protection from CHD that was once offered by young age is being slowly taken away by the increased prevalence of cardiac risk factors in the younger population such as smoking, obesity and lack of physical activity due to unhealthy lifestyle.

The appropriate investigations and treatment should be offered to young people with CHD in order to have a good prognosis.

This clinical case is about an athletic young man without any cardiac risk factor who was hospitalized in our department for an exertional angina.

### CASE PRESENTATION

A 32 year old athletic man presented to our department for exertional angina pectoris class III of CCS for 2 months.

The physical examination, the EKG, cardiac biomarkers and the echocardiography at rest were normal.

The stress testing and stress echocardiography were both positive.

The coronarography concluded to severe and long lesions of the anterior descending artery and bisecting artery.

Further biological investigations were made such as thrombophilia workup and lipid profile that were normal.

As for the treatment, PCI was not an option due to the technical difficulties, the severity of the coronary lesions and the risk of complications.

Our patient got a CABG with three bypasses using the left internal mammary artery for both the anterior descending artery and the first diagonal artery, and the right internal mammary for the bisecting artery with good clinical and hemodynamic results during the first week .



**Figure 1:** Coronarography showing severe and long lesions of the anterior descending artery and bisecting artery.

## DISCUSSION

The prevalence of CHD in people younger than 45 represent only 3% of all patients with CHD. (1)

However, as the prevalence of cardiac risk factors is on the rise in young adults and children, the number of young men and women with CHD will also know an increase.

The causes of CHD at a young age can be divided into four groups (2):

- Atheromatous CHD,
- Non- atheromatous CHD,
- Hypercoagulable states,
- Substance misuse

The etiology of atheromatous CHD in youth was linked to conventional risk factors as it is in the case of old people, as shown in the PADY and bogalusa heart study. Among young patients, cigarette smoking was found to be most common risk factor (up to 92%), patients with lipid abnormalities, insulin resistance and obesity tend to have more arterial dysfunctions than other young people.

Although this group of CHD is the most frequent, we can also found non atheromatous CHD such as the myocardial bridging or a coronary artery dissection that is more frequent in women especially during the peri-partum period or other etiology such as septic vegetation of the aortic valve that can embolize to coronary arteries or the use of drugs like cocaine, that can lead to coronary vasospasm or hypercoagulability in the background of heightened sympathetic activity, conducting in the majority of cases to MI.

Another group is CHD due to hypercoagulable states, like in the antiphospholipid syndrome that can be primary or secondary associated with other autoimmune diseases like systemic lupus erythematosus, or nephrotic syndrome.

The clinical presentation of CHD in young people is similar to what is described in the older population.

Atypical clinical presentation can lead to a delay of diagnosis and treatment.

As for the treatment, young adults with CHD should be treated similarly to older patients as well. Results from early PCI and CABG studies in patients < 40 years old were mixed. Both procedures have shown to be effective and associated with fewer risks in younger patients.

Revascularization techniques aren't the only treatment of CHD. Risk factors reduction is also extremely important.

## CONCLUSION

Young adults clearly represent a unique subset of CHD patients. Clinicians should be aware of the differences between older and younger patients, particularly with regard to risk factors, prognosis, and treatment.

## REFERENCES

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