

## Case Report

# Clinical image; Management of Coronary Artery Thrombosis

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## Abstract

**Background:** Acute myocardial infarction is an increasing cause of morbidity and mortality in the world. This condition sometimes happens as a result of coronary arteries blockage due to clot formation, spasm or plaque rupture.

**Cases Report:** A 31-year-old man referred to our hospital with severe exertional chest pain. Electrocardiogram revealed ST-segment elevation in precordial leads. Coronary arteries angiography revealed a visible clot at proximal part of left anterior descending artery. As the thrombolysis in myocardial infarction (TIMI) flow of the artery was normal and the patient became asymptomatic, conservative management was considered. The patient was commenced on anticoagulant, glycoprotein 2b/3a inhibitor, aspirin, and clopidogrel. Follow-up angiography showed normal flow with no clot existence.

**Conclusion:** Coronary thrombus is an etiology of acute coronary syndrome. Patients often have varying levels of concurrent atherosclerosis. Its management is anticoagulation, thrombolysis, and occasionally invasive strategies. Some cases can be managed conservatively, so decision-making is an important part of these patients' management.

**Keywords:** Coronary artery, Thrombosis, Acute myocardial infarction

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## Introduction

Coronary artery thrombus occurs due to rupture or erosion of coronary artery plaques, sometimes resulting in the artery's complete occlusion<sup>1</sup>. Coronary thrombus is one of the main causes of sudden cardiac death<sup>2</sup>. The coronary thrombus can occlude the coronary artery and its branches, resulting in an impairment of epicardial and myocardial blood flow<sup>3</sup>. Treatment for coronary artery thrombus involves medications and revascularization to improve myocardial

perfusion<sup>3</sup>. The mainstay pharmacologic therapy for managing thrombus-containing lesions includes aspirin, thienopyridines (clopidogrel, prasugrel, ticagrelor), and unfractionated heparin<sup>4</sup>.

## Case Report

A 31-year-old man referred to our hospital with severe exertional chest pain. The Physical examination was unremarkable. Electrocardiogram revealed ST-segment elevation in precordial leads. Echocardiography demonstrated preserved left ventricular ejection fraction. Coronary arteries angiography (CAG) revealed normal right and left circumflex coronary arteries, but a visible clot at proximal part of left anterior descending artery (LADA) was seen (Fig. 1). As the thrombolysis in myocardial infarction (TIMI) flow of LADA normalized and the patient became asymptomatic, conservative management was considered. The patient was commenced on anticoagulant, glycoprotein 2b/3a inhibitor, aspirin, and clopidogrel. Follow-up CAG showed

normal flow with no clot existence (Fig. 2).

## Discussion

Studies have shown that the most important substrate for acute coronary syndromes is coronary disease complicated by thrombosis. In this case, thrombosis was documented in proximal part of the vessel in CAG. Faced with such cases, there are two suggested strategies: First is aspiration of thrombosis and deployment a stent<sup>5</sup>, and second is conservative management<sup>6</sup> (with enoxaparin or unfractionated heparin, GP 2b/3a inhibitor in addition to dual antiplatelet) and follow-up the patient. We decided to choose the second way. Follow-up CAG showed no clot. Two days later, we discharged him and recommended to



Figure 1. First angiogram.



Figure 2. Second angiogram.

modify life style and take dual antiplatelet, statin and beta-blocker.

## Conclusion

Coronary thrombus is an etiology of acute coronary syndrome. Patients often have varying levels of concurrent atherosclerosis. It's management is anticoagulation, thrombolysis, and occasionally percutaneous coronary intervention (PCI). Thrombus aspiration may be considered in patients with a heavy thrombus burden; but there are some cases which can be managed conservatively. so decision making is an important part of these patients' management.

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