

A Mysterious Case of ST-Elevation Myocardial Infarction; an Old Man with Weight Loss and Dyspepsia

Morteza Safi ¹, Isa Khareshi ^{1*}, Mehdi Memaryan ¹,
Mohammadreza Naderian ²

¹ Cardiovascular Research Center, Modarres hospital, Shahid Beheshti University of Medical Sciences, Tehran, Iran

² Non-Communicable Diseases Research Center, Endocrinology and Metabolism Population Sciences Institute, Tehran University of Medical Sciences, Tehran, Iran

* Corresponding author: Isa Khareshi, MD, Cardiovascular Research Center, Modarres hospital, Shahid Beheshti University of Medical Sciences, Tehran, Iran.
E-mail: isa.khareshi@gmail.com

DOI: 10.21859/ijcp-020404

Submitted: 08.10.2016

Accepted: 09.15.2016

Keywords:

Myocardial Infarction

Dyspepsia

Pancreatic Neoplasms

Peritoneum

Abstract

We present a 65-year-old man who developed retrosternal compressive chest pain. A 12-lead electrocardiography demonstrated ST-segment elevation in leads II, III and aVF. Emergent coronary angiography showed significant thrombus in the distal portion of the left main coronary artery. Abdomino-pelvic computed tomography scan, which was performed the next day, confirmed a pancreatic mass with peritoneal seedings, compatible with peritoneal carcinomatosis. This case underscores the importance of malignancies that may lead to a catastrophic ST-elevation myocardial infarction due to a hypercoagulable state and following thrombosis in the left main coronary artery.

© 2017. International Journal of Cardiovascular Practice.

INTRODUCTION

Coronary artery thrombosis is a cause of acute ST-elevation myocardial infarction (STEMI), which can be caused by diverse pathologic causes including secondary to plaque rupture with following thrombus formation, determined hypercoagulable state, vasospasm and cocaine abuse [1]. This thrombosis may involve the left main coronary artery, which is clinically an uncommon and dangerous diagnosis. There is no characteristic ECG finding for left main thrombosis. Management of left main thrombosis is often controversial [2, 3].

CASE PRESENTATION

A 65-year-old man without a history of prior ischemic heart disease was admitted to our hospital with a complaint of abdominal pain from 5 months ago that was constant and accompanied with night sweating, anorexia and weight loss of 4-5 kg during 6 months ago. He denied any constipation, diarrhea, icterus, nausea, vomiting or gastrointestinal bleeding. His past medical history was unremarkable. He was a smoker (30 packs/year). Also, he had no history of recent travel to specific regions. He was underwent colonoscopy that showed no remarkable finding. Due to continued symptoms, esophagogastroduodenoscopy was performed that revealed erosive gastritis; biopsies were taken and pathology result was negative for *Helicobacter pylori* or any type of malignancy. Laboratory tests including complete blood tests, thyroid, renal and

liver function tests were all within normal ranges except for mild normochromic normocytic anemia (hematocrit: 35%). Pantoprazole 40 mg once daily was initiated for him and he was discharged to follow his anemia work-up in outpatient setting. After 3 weeks, he was readmitted in our hospital with a complaint of abdominal distension. On physical examination, he was icteric and pale. Heart and lung examinations were unremarkable. Abdominal examination showed distention of the abdomen compatible with ascites and positive shifting dullness. However, the abdomen was not tender or guarded. The lower extremities showed bilateral mild edema. Complete diagnostic work-up was planned to investigate the probable source. On the second night of his admission, the patient developed retrosternal compressive chest pain with radiation to left shoulder and back accompanied with cold sweating. A 12-lead electrocardiography (ECG) immediately was performed, which demonstrated ST-segment elevation in leads II, III and aVF (Fig 1: A). Due to ECG findings and clinical setting, which was compatible with inferior STEMI, the patient was prepared for emergent coronary angiography which showed significant thrombus in the distal portion of left main artery (Fig 1: B, C and D). According to angiographic findings, systemic thrombolytic therapy (streptokinase 1500000 IU during 90 minutes) was administered. Thirty minutes after the end of the thrombolytic therapy, the chest pain and ST-segment elevation in ECG were resolved

significantly. Transthoracic echocardiography (TTE) showed ejection fraction of 50%, mild left ventricular hypertrophy, mild mitral regurgitation and mild left ventricular diastolic dysfunction. On the next day, an abdomino-pelvic CT-scan confirmed a pancreatic mass with dilation of common bile duct (CBD) and peritoneal seedings, which was compatible with peritoneal carcinomatosis (Fig 1: E and F).

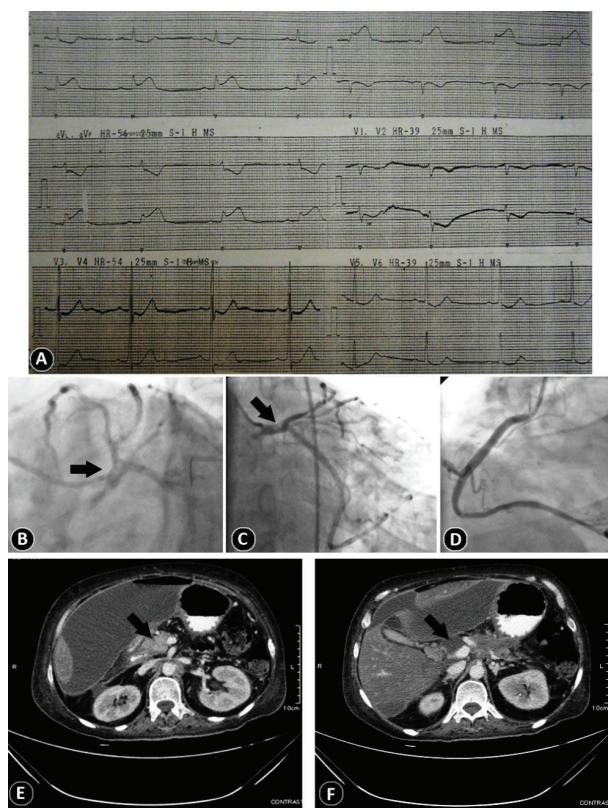


Figure 1. A: 12-Lead ECG Demonstrated ST-segment Elevation in Leads II, III and aVF. B, C and D: Emergent Coronary Angiography Showed Significant Thrombus in the Distal Portion of Left Main Artery (Black Arrows) with no Significant Lesion in other Major Vessels. E and F: Abdomino-Pelvic CT-Scan Confirmed Pancreatic Infiltration (Black Arrow in E) with Dilation of Common Bile Duct (CBD) (Black Arrow in F) and Peritoneal Seedings, which was Compatible with Peritoneal Carcinomatosis.

The patient's medical condition was deteriorated on the following days due to occurrence of contrast nephropathy, refractory ascites and subacute bacterial peritonitis. According to volume overload, hypotension and respiratory distress, he was intubated to be supported with the ventilator. Unfortunately, the patient was expired after 3 days following an asystole episode and unsuccessful 1-hour cardiopulmonary resuscitation.

DISCUSSION

We presented a rare case of inferior STEMI as a result of left main thrombosis. Left main thrombosis is clinically an uncommon and dangerous diagnosis. Left main coronary artery thrombus is caused by diverse pathologic causes including secondary to plaque rupture with following thrombus for-

mation, determined hypercoagulable state, vasospasm and cocaine abuse [4-6]. The incidence of left main thrombosis is estimated to be 0.8%, but is thought to be underdiagnosed; given abrupt left main coronary artery thrombus may present with sudden cardiac death [4, 6, 7]. The substantial point, which should be noted is that there is no characteristic ECG finding for left main thrombosis [2]. The initial ECG findings of our patient were compatible with inferior ST-elevation which suggested a right coronary artery or dominant left circumflex artery as expected culprit lesion in the coronary angiography. This issue will be so challenging when you are in a center without catheterization properties and should decide about administration of thrombolytic agent in the setting of an isolated inferior STEMI.

The probable cause for left main thrombus in our patient could be a hypercoagulable state as a result of underlying pancreatic malignancy, which was discovered at the end of the clinical scenario. Although we commonly expect venous thrombosis in the setting of malignancies, an arterial thrombosis revealed the first manifestation of hypercoagulable state of the underlying cancer [3]. Management of left main thrombosis is often controversial including conservative approach with antiplatelet drugs, mechanical aspiration thrombectomy, stenting, intracoronary or systemic thrombolytic delivery or urgent CABG [1, 2, 8]. This case underscores the importance of malignancies that may lead to a catastrophic STEMI due to a hypercoagulable state and following thrombosis in the left main coronary artery. Also, it emphasizes that left main coronary artery thrombosis may exhibit with non-specific and various ECG findings including inferior STEMI as revealed in our patient.

DISCLOSURES

Authors declare that they had no conflict of interest.

REFERENCES

- Kardasz I, De Caterina R. Myocardial infarction with normal coronary arteries: a conundrum with multiple aetiologies and variable prognosis: an update. *J Intern Med.* 2007;261(4):330-48. DOI: [10.1111/j.1365-2796.2007.01788.x](https://doi.org/10.1111/j.1365-2796.2007.01788.x) PMID: [17391108](https://pubmed.ncbi.nlm.nih.gov/17391108/)
- Gupta R, Rahman MA, Uretsky BF, Schwarz ER. Left main coronary artery thrombus: a case series with different outcomes. *J Thromb Thrombolysis.* 2005;19(2):125-31. DOI: [10.1007/s11239-005-1924-2](https://doi.org/10.1007/s11239-005-1924-2) PMID: [16052304](https://pubmed.ncbi.nlm.nih.gov/16052304/)
- Selvanayagam JB, Iler MA, McRitchie RJ. Coronary thrombosis due to malignancy-induced thrombophilia. *Intern Med J.* 2002;32(5-6):268-70. PMID: [12036227](https://pubmed.ncbi.nlm.nih.gov/12036227/)
- Ikkitur B, Gurmen T, Tabakan A, Suzer K. Acute coronary syndrome caused by a mobile mass in the left main coronary artery. *J Am Coll Cardiol.* 2010;55(15):e131. DOI: [10.1016/j.jacc.2009.11.074](https://doi.org/10.1016/j.jacc.2009.11.074) PMID: [20378070](https://pubmed.ncbi.nlm.nih.gov/20378070/)
- Klein AJ, Casserly IP, Messenger JC. Acute left main coronary arterial thrombosis - a case series. *J Invasive Cardiol.* 2008;20(8):E243-6. PMID: [18688072](https://pubmed.ncbi.nlm.nih.gov/18688072/)
- Mischie AN, Nazzaro MS, Sinescu C, Violini R. Successful management of ostial left main thrombus by systemic thrombolysis. *Eur Heart J.* 2011;32(5):654. DOI: [10.1093/eurheartj/ehq416](https://doi.org/10.1093/eurheartj/ehq416) PMID: [21113065](https://pubmed.ncbi.nlm.nih.gov/21113065/)
- Dwyer N, Kanani R. Images in clinical medicine. Left main coronary artery thrombosis. *N Engl J Med.* 2012;366(14):e21. DOI: [10.1056/NEJMim1105065](https://doi.org/10.1056/NEJMim1105065) PMID: [22475617](https://pubmed.ncbi.nlm.nih.gov/22475617/)
- Karavelioglu Y, Ekicibasi E, Tanalp AC, Karapinar H, Aung SM. Worm-like thrombus in left main coronary artery after cytostatic treatment. *Blood Coagul Fibrinolysis.* 2010;21(5):491-3. DOI: [10.1097/MBC.0b013e328339cc33](https://doi.org/10.1097/MBC.0b013e328339cc33) PMID: [20595825](https://pubmed.ncbi.nlm.nih.gov/20595825/)