Case report

Anti-Aging Eastern Europe

SUCCESSFUL MYOCARDIAL REVASCULARIZATION IN A 92-YEAR-OLD FEMALE PATIENT: A CASE REPORT

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Abstract
Introduction. Patients with acute myocardial infarction should be treated with early revascularization. Patients over 73 years have a higher risk of infarct-related cardiogenic shock, which is a leading cause of lethality. Unfortunately, little is known about myocardial revascularization care for elderly people in Ukraine. We presented a 92-year-old lady with an acute chest pain case report, which was not revealed by analgesics.
Important clinical findings. Coronary angiography revealed thrombotic occlusion of the distal segment of the left anterior descending artery (LAD) and floated thrombus in LAD mid-segment; stenosis of the left circumflex artery (LCx) close to the first obtuse marginal artery (OM1).
The main diagnosis. Acute myocardial infarction with ST-segment elevation of the left ventricle anterior wall (anterior-STEMI). Calcific aortic valve disease, severe aortic valve stenosis, significant mitral and tricuspid valve regurgitation, pulmonary hypertension. Heart failure with reduced LVEF (<40%), NYHA class III symptoms.
Intervention. The decision was to perform urgent stenting in LAD and balloon angioplasty in LCx. Successful hospital discharge was after 14 days.
Conclusions. Take-away lessons: Elderly patients with acute myocardial infarction can be successfully treated in Ukraine. Age and comorbidities are not a contraindication for early myocardial revascularization.

Keywords: myocardial infarction; myocardial revascularization; aged; heart valve disease; case report.

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Introduction

Patients with acute myocardial infarction should be treated with early revascularization [1]. The advantages of coronary revascularization are well investigated and described in «younger» patients [2,3]. However, patients over 73 years have a higher risk of infarct-related cardiogenic shock, which remains a leading cause of lethality [4]. In addition, older patients are prone to the quick development of cardiogenic shock with further complications. Moreover, elderly patients have more comorbidities, a high risk of bleeding, renal dysfunction, and, as a result, mechanical complications [1].

It is explicit that patients of age are less likely to undergo revascularization than younger people [1].

Unfortunately, little is known about the situation in Ukraine. To our knowledge, such data is not widely published, especially in English.
This study aims to inform readers about accessible, up-to-date revascularization techniques for elderly people in Lviv (Ukraine) based on a presented study with successful percutaneous coronary intervention in a 92-year-old lady with ST-segment elevation myocardial infarction (STEMI).

Patient information

A 92-year-old lady presented to the Emergency room with acute chest pain for 3 hours, which was not resolved by analgesics. Typical clinical findings on physical examination.

Diagnostic Assessment

ECG findings included ST-segment elevation in V1-V6 with sinus rhythm and heart rate of 78 bpm and were interpreted immediately at the emergency room. TroponinI–10.186ng/ml(standardupto0.16ng/ml). A bedside echo showed a 40% ejection fraction, anterior wall hypokinesia, intraventricular septum, and apex akinesia; degenerative aortic valve disease, max gradient 80 mmHg; severe mitral and tricuspid insufficiency.

Diagnosis

Acute myocardial infarction with ST-segment elevation (STEMI) of the left ventricle's anterior wall (also known as anterior STEMI). Calcific aortic valve disease (CAVD), severe aortic valve stenosis, significant mitral regurgitation (MR), Severe tricuspid valve regurgitation, and pulmonary hypertension.

Complications

Heart failure with reduced LVEF (<40%), NYHA class III symptoms.

Intervention

The primary percutaneous coronary intervention (PCI) strategy at the cath lab was chosen up to 60 minutes after STEMI diagnosis. Invasive coronary angiography revealed thrombotic occlusion of the distal segment of the left anterior descending artery (LAD) and floated thrombus in LAD mid-segment; stenosis of the left circumflex artery (LCx) close to the first obtuse marginal artery (OM1). The patient was successfully treated with urgent stenting of LAD and balloon angioplasty of LCx (Fig. 1). Right coronary artery (RCA) and Left main coronary artery without significant changes (Fig. 2).

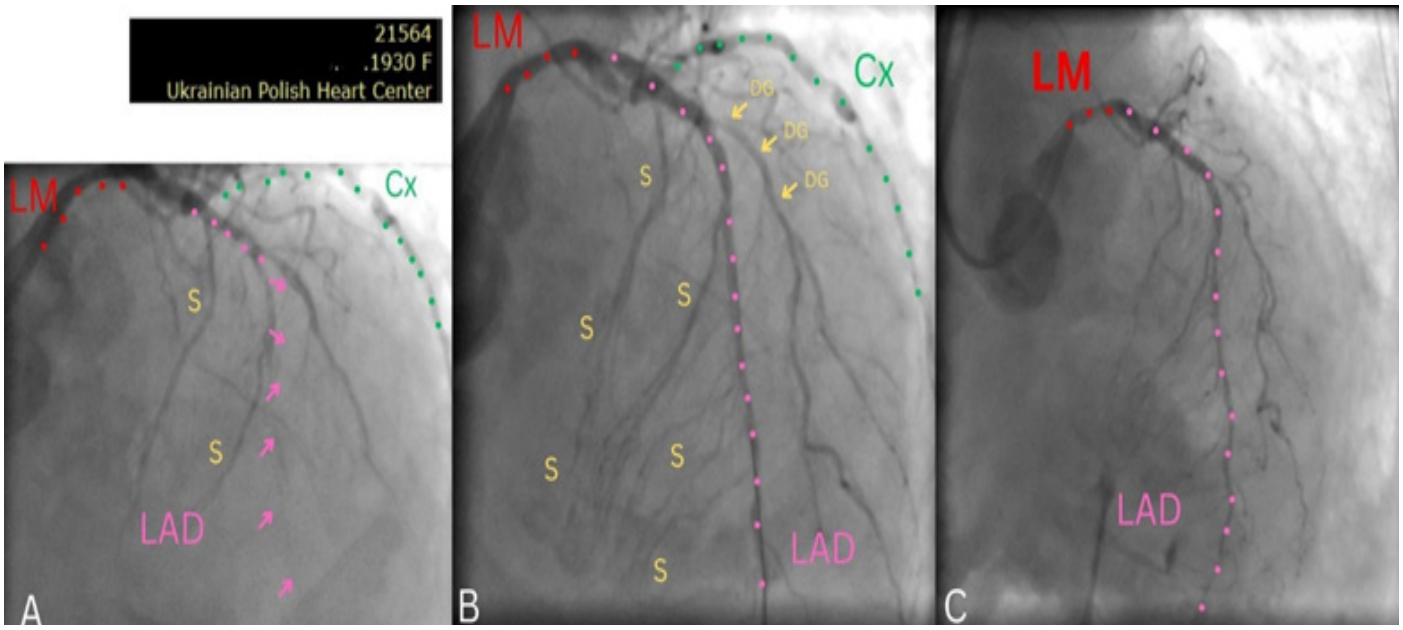

Figure 1. The left coronary angiogram of a 92-year-old lady with anterior ST-segment elevation myocardial infarction before (A), during (B) and after (C) stent implantation. Left main (red dots) with left anterior descending artery, LAD (pink dots) and the left circumflex coronary artery, Cx (green dots). The pink arrows mean the predicted LAD, which is occluded.

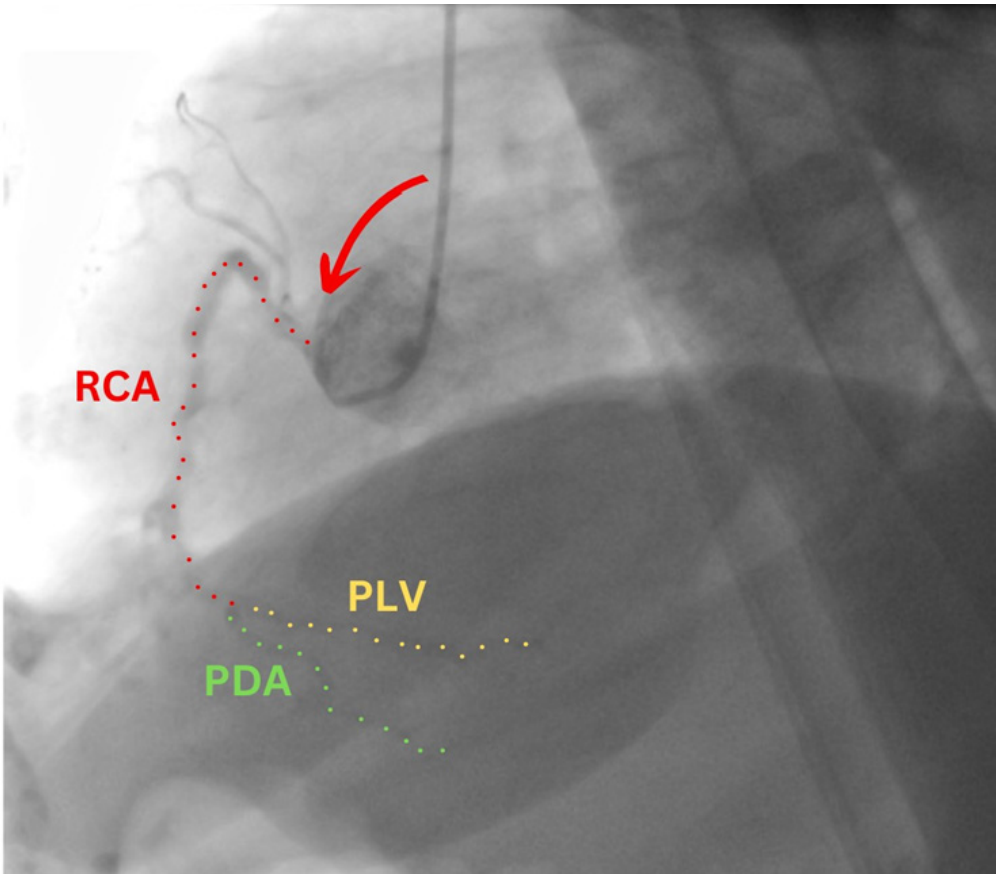

Figure 2. The right coronary angiogram of a 92-year-old lady with anterior ST-segment elevation myocardial infarction. RCA, right coronary artery with indicated ostium (red arrow); PLV, posterior left ventricular artery (or posterolateral artery, PLA); PDA, posterior descending artery. RAO: 3; CRA: 31

Diagnostic and treatment challenges

STEMI with significant comorbidities conforms to a complicated relationship. Severe heart valve diseases required additional care and affected the course of treatment.

Follow-up and Outcomes

Two days after PCI, the patient developed cardiac arrhythmia and a dramatic manifestation of heart failure with acute cardiogenic pulmonary edema. The patient required mechanical ventilation and inotropic support at the intensive care unit (ICU). Gradually the heart rhythm was stabilized, and the normal sinus rhythm was restored. Hospital discharge was after 14 days. A 92-year-old lady left the hospital with a sinus rhythm. According to ESC Guidelines, necessary medication treatment was described.

Discussion

In a presented case, a 92-year-old patient with Anterior acute myocardial infarction with ST-segment elevation (1); calcific aortic valve disease (2), severe aortic valve stenosis (3); significant mitral (4) and tricuspid valve regurgitation (5); pulmonary hypertension (6); heart failure with reduced LVEF (<40%), NYHA class III symptoms (7) was treated with percutaneous coronary intervention. In 2 days after stenting of LAD and balloon angioplasty of LCx patient developed cardiogenic shock. The elderly lady was successfully treated due to the Guidelines [1] and discharged from the hospital 14 days after the onset of symptoms.

Elderly patients with myocardial infarction have a high risk of complications [5,6]. Most of them occur in the first week after the cardiac event [7]. The presented case was complicated by cardiogenic shock two days after the cardiac event, proving the statements described.

Treatment decision is very discussible among elderly patients with STEMI due to the limited number of research [2,3]. In our case, PCI was chosen as a treatment option. Despite difficulties afterward, PCI gave successful results. However, it is still tricky to question how and when elderly people should be treated [4], especially in patients with significant comorbidities.

It is crucial to follow the time targets according to the 2017 ESC Guidelines for managing patients presenting with STEMI [1]. PCI was performed for up to 60 minutes.

Take-away lessons

Elderly patients with acute myocardial infarction can be successfully treated in Ukraine. Age and comorbidities are not a contraindication for early myocardial revascularization.

Patient Perspective

Our patient reported that she did not think a patient of such age could be successfully treated with myocardial infarction. She said that for years myocardial infarction meant disabilities or lethality. She was delighted to receive myocardial revascularization even after being 92 years old and thinking of transcatheter aortic valve implantation (TAVI) for severe aortic valve stenosis.

INFORMED CONSENT

The patient gave and signed a written consent form.

AUTHOR CONTRIBUTIONS

P.B., S.V. performed an endovascular procedure and was responsible for the treatment strategy; U.P., D.B. wrote the manuscript; U.P., P.B., S.V., D.B. reviewed the manuscript.

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CONFLICT OF INTEREST

The authors have completed the ICMJE Disclosure Form. The authors declare that there are no potential conflicts of interest.

DISCLAIMER

No part of this article is copied or published elsewhere in whole or in part.

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