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## CASE REPORT

# Post-angioplasty Psychosis Following Inferior ST-segment Elevation Myocardial Infarction: A Case Report Highlighting an Uncommon Occurrence

Amir Shakarami<sup>1,\*</sup><sup>1</sup>Department of Cardiology, Faculty of Medicine, Lorestan University of Medical Sciences, Khorramabad, Iran

**Abstract: Introduction:** Myocardial infarction (MI) is a common disease. Nowadays, progress in the rapid management of acute coronary syndrome (ACS) has resulted in saving time and reduction of MI complications.

**Case Representation:** A 68-year-old male musician with a history of coronary artery disease (CAD), while playing fiddle, complained of severe compressive retrosternal chest pain. In the present study, we report a case of inferior ST-segment elevation MI with a post-angioplasty delusion of persecution.

**Conclusion:** Our case report has presented a distinctive occurrence of post-angioplasty psychosis following inferior ST-segment elevation myocardial infarction. The patient displayed symptoms consistent with brief psychosis, including persecutory delusions, jealousy delusions, and second-person auditory hallucinations.

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**ARTICLE HISTORY**

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**Keywords:** Myocardial infarction, ST, persecutory delusion, CAD, chest pain, angioplasty.

## 1. INTRODUCTION

Myocardial infarction (MI) is a common disease. Nowadays, progress in the rapid management of acute coronary syndrome (ACS) has resulted in saving time and reduction of MI complications [1]. However, in some patients, some consequences may occur. In the present study, we have reported a case of inferior ST-segment elevation MI with post-angioplasty delusion of persecution.

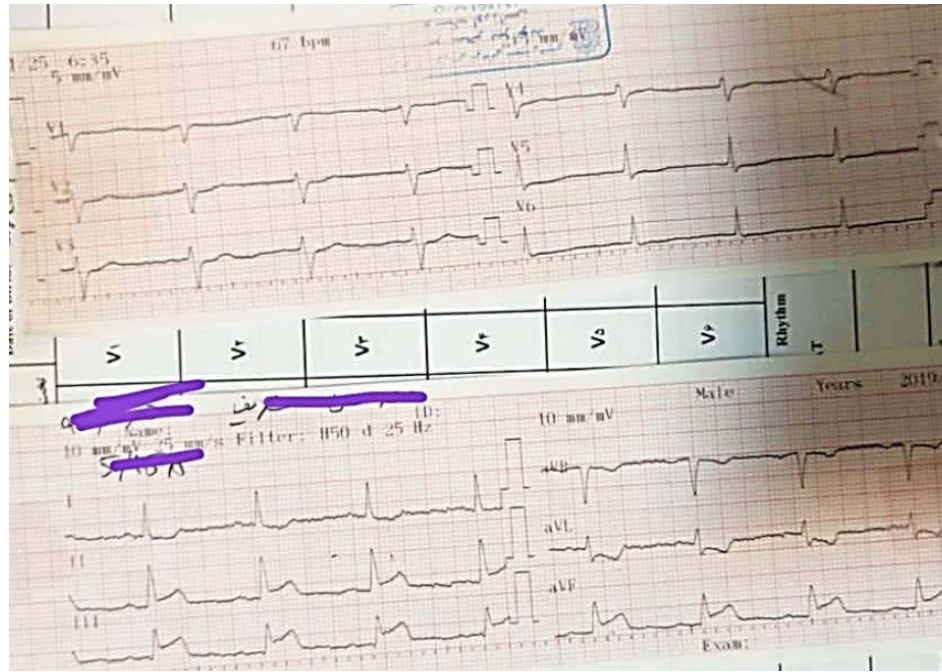
## 2. CASE PRESENTATION

A 68-year-old male musician, while playing fiddle, presented to our cardiac emergency complaining of severe compressive retrosternal chest pain. His past medical history included coronary artery disease (CAD) and angiography conducted 5 years ago showed the left anterior descending (LAD) artery as ostially cut-off, but the right coronary artery (RCA) and left circumflex artery (LCX) were patent, and the patient's left ventricle ejection fraction (LVEF) was 40%. The patient received aspirin 80 mg/day and atorvastatin 20 mg/day. He did not have any other medical or psychological history. He had good family care and social relationships. His vital signs were as follows: blood pressure 80/50 mmHg and heart rate 40 beats/min.

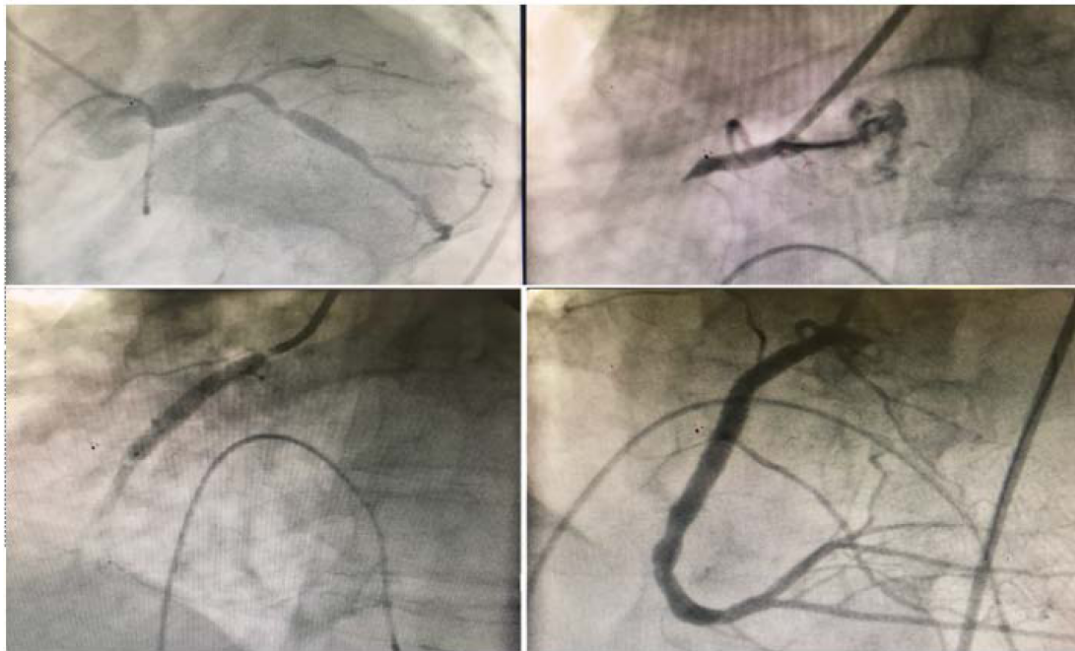
Initial electrocardiography (ECG) showed inferior ST-segment elevation MI (Fig. 1) as well as second-degree atrioventricular (AV) block (Wenckebach). The patient was referred to a catheterization laboratory (cath lab) and a temporary pacemaker was applied to the right ventricle (RV) apex. Then, coronary angiography showed RCA proximally cutoff and either LAD. RAD was directly stented by a 4mm-28 mm stent (Fig. 2). Door-to-device time was 60 min and total ischemic time was 90 min. In the end, the patient was discharged from the cath lab with RCA TIMI3 flow and blood pressure 100/60 mmHg. Patient's hemodynamic status was stable. His consciousness was clear and he was oriented in time, place, and person. However, 3 hours later, he became agitated and very aggressive with nursing personnel. 12 hours later in a coronary care unit (CCU), he had a delusion that the monitors were controlling his activities and some people want to hurt him. He thought we were recording his talking and checked medical orders to find any writing related to him. Some of his delusions had sexual content. He thought that his wife was treacherous (delusional jealousy). He had some auditory hallucinations (he said that some people have commanded to hang him). His speech was normal and had not any lateralized signs. His neurological examination was completely normal. His brain computed tomography (CT) scan and brain magnetic resonance imaging (MRI) were also normal. He had no past psychiatric history. The patient was administered risperidone 1 mg/day and his symptoms resolved after 2 weeks.

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\*Address correspondence to this author at the Department of Cardiology, Faculty of Medicine, Lorestan University of Medical Sciences, Khorramabad, Iran; E-mail: [md.amirshakarami@gmail.com](mailto:md.amirshakarami@gmail.com)



**Fig. (1).** Initial ECG of the patient showing ST-segment elevation in leads II, III, and aVF. (A higher resolution / colour version of this figure is available in the electronic copy of the article).



**Fig. (2).** Coronary angiography of the patient. (A higher resolution / colour version of this figure is available in the electronic copy of the article).

### 3. DISCUSSION

Our case report has presented a distinctive occurrence of post-angioplasty psychosis following inferior ST-segment elevation myocardial infarction. The patient displayed symptoms consistent with brief psychosis, including persecutory delusions, jealousy delusions, and second-person auditory hallucinations. Notably, the absence of dementia indicated that the observed psychiatric symptoms were not related to cognitive impairment.

While assessing potential differential diagnoses, paranoid schizophrenia and neurological conditions were considered. However, the brief duration of symptoms (<1 month) ruled out schizophrenia, and the normal brain CT scan and brain MRI effectively eliminated gross structural damage resulting from cerebrovascular accident (CVA). The relatively short total ischemic time and the absence of circulatory cessation, combined with the patient's alertness and consciousness, effectively ruled out hypoxic-ischemic encephalopathy as the cause of the observed psychosis.

While this case is the first to report psychosis following myocardial infarction, it does prompt consideration of factors contributing to the patient's psychological manifestations. Contrast agent encephalopathy, for instance, emerges as a potentially relevant consideration. Contrast agents, routinely used in angiography procedures, have been associated with neurological complications, including encephalopathy. Although in our case, this interaction has not been explored, it is plausible that the administration of contrast agents during the angioplasty procedure could have contributed to or exacerbated the development of the patient's psychiatric symptoms.

Regarding treatment, the patient's response to risperidone aligned with previous reports of its effectiveness in treating delusional disorders. Instances, such as Fear and Libretto's (2002) case of a 50-year-old woman, demonstrate the utility of antipsychotic medications in managing similar presentations [2]. Existing literature primarily focuses on patients with delusional disorders accompanied by hallucinations or psychosis [3]. Our case report contributes by shedding light on the less-explored scenario of psychosis following myocardial infarction without any prior history of psychiatric conditions.

## CONCLUSION

This case is reported as the first case of brief psychosis disorder following a cardiovascular event.

## ETHICS APPROVAL AND CONSENT TO PARTICIPATE

Not applicable.

## HUMAN AND ANIMAL RIGHTS

Not applicable.

## CONSENT FOR PUBLICATION

A written informed consent was obtained from the patient for publication of this case report and accompanying

images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

## STANDARDS OF REPORTING

SCARE guidelines were followed.

## AVAILABILITY OF DATA AND MATERIAL

Data sharing is not applicable to this article as no datasets were generated or analyzed during the current study.

## FUNDING

None.

## CONFLICT OF INTEREST

The author denies any conflict of interest in any terms or by any means during the study.

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Declared none.

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