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Visual Case Discussion

de-Winter syndrome; ST-T changes equivalent of acute myocardial infarction



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A 42-year-old man was admitted to the emergency room with a chief complaint of epigastric pain from three days before, which was initially waxing and waning, but short, and then became constant and severe two hours prior to admission. The pain was pushy and localized, with no radiation to the arms or back. The pain score was 8 out of 10 based on the verbal rating scale. He also reported nausea without vomiting, and had no symptoms of severe acute respiratory syndrome. His medical history suggested no similar complaints. He also had no history of heart diseases, gastrointestinal diseases, diabetes, hypertension, hyperlipidemia or hospitalization and surgery as well as no family history of coronary artery disease. The patient was a heavy smoker, but did not use alcohol or drugs. Physical examinations found the patient to be agitated but free from respiratory distress. He had a normal blood pressure of 130/80 mmHg, a normal pulse rate of 80/min and a respiratory rate of 16/min. He was found to be afebrile with an O₂-saturation level of 97% on room air. His chest examination revealed the

lungs were clear and the heart had muffled sounds. His other physical examinations were unremarkable. The electrocardiogram (ECG) revealed ST depression plus tall T wave in precordial leads (Fig. 1). Given his ECG abnormalities and ongoing pain, the patient was diagnosed as a candidate for primary percutaneous coronary intervention (PPCI), and transferred to the catheterization lab. Angioplasty was performed on his left anterior descending artery (LAD) owing to coronary angiographic findings (Fig. 2). The patient was then transferred to the CCU and discharged five days later. The ECG and angiography confirmed the diagnosis of de-Winter syndrome, which is associated with typical chest pains, characteristic ECG patterns (ST depression and tall T-waves in the precordial leads, poor R-wave progression and mild ST elevation in the AVR) and occlusion of LAD¹. This syndrome is rare and requires PPCIs to be performed; nevertheless, physicians may fail to diagnose this condition due to the absence of classic ST elevation^{2,3}.

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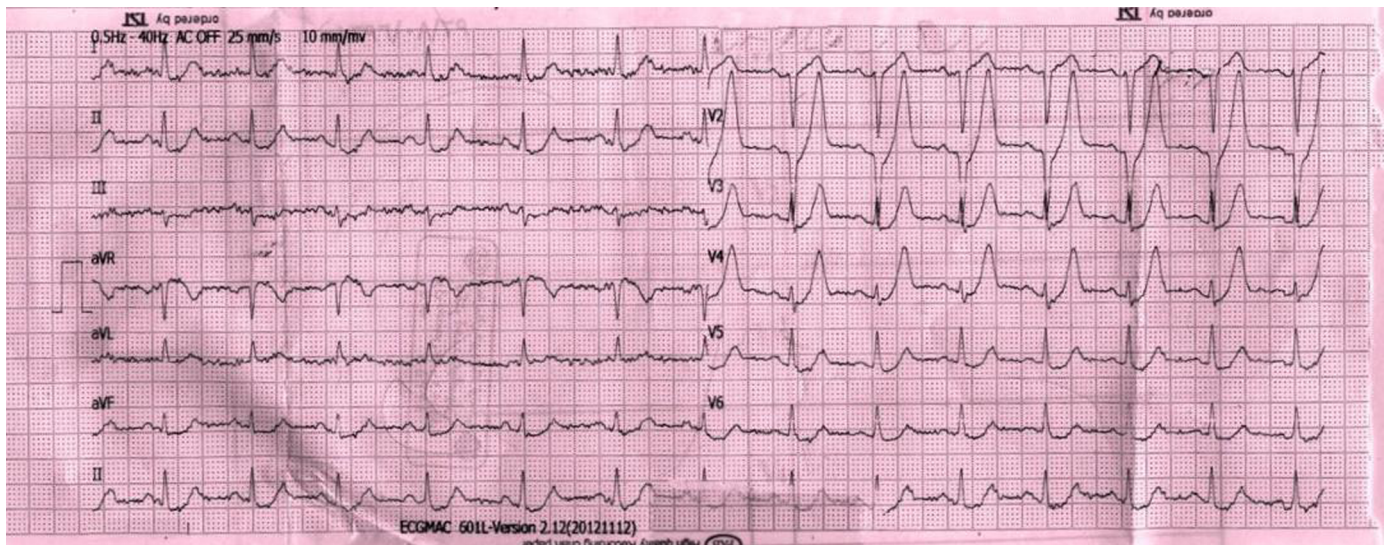


Fig. 1. An electrocardiogram of the patients on arrival to the emergency room revealed tall T-waves and ST depression in precordial leads.

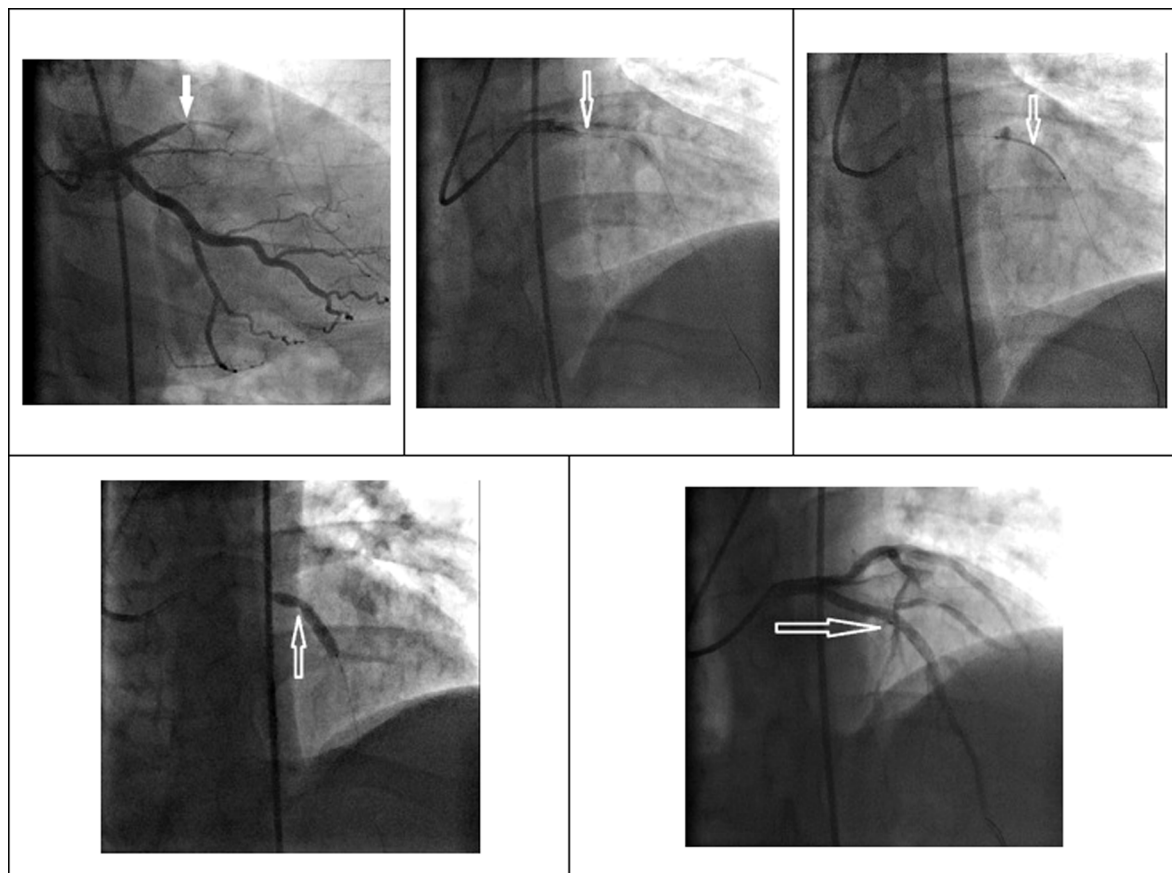


Fig. 2. Images taken from patient's angiography.

Supplementary materials

Supplementary material associated with this article can be found, in the online version, at [doi](#).

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Questions

1. Which coronary artery is occluded in de-Winter syndrome?

- a. Left anterior descending.
 - b. Left main coronary.
 - c. Right main coronary.
 - d. Circumflex.
 - e. Diagonal.
2. De-Winter syndrome is associated with ST-segment elevation in which leads?
- a. Anterior precordial leads.
 - b. Inferior limb leads.
 - c. Lateral limb leads.
 - d. Posterior leads.
 - e. AVR lead.
3. What is the treatment of choice in dealing with de-Winter syndrome?
- a. Percutaneous coronary intervention.

- b. Open heart surgery.
- c. Medical treatment.

Answers

1. Left anterior descending. Explanation: De-Winter syndrome is a condition associated with acute occlusion of the left anterior descending coronary artery.
2. AVR lead. Explanation: Electrocardiography (ECG) showed 1- to 2-mm upsloping ST-segment depression in the precordial leads, with tall and positive symmetric T waves, loss of precordial R-wave progression and small ST-segment elevation in the aVR lead.
3. Percutaneous coronary intervention. Explanation: Urgent coronary angiography shows occlusion of the left anterior descending coronary artery, which is successfully treated with angioplasty.