



Double Diagnostic Challenge: Acute Myocardial Infarction and Complication Due to Intrauterine Device in a Diabetic Patient

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Abstract

The case presents a dual diagnostic challenge in a 40-year-old diabetic patient with a history of type 2 diabetes, smoking, and mood disorder. Initially presenting with abdominal pain and vomiting, appendicitis was suspected. However, her diagnosis changes upon performing an Electrocardiogram (ECG). During directed questioning, the patient reported chest pain and the diagnosis of acute myocardial infarction is confirmed.

Coronary angiography is performed, achieving reperfusion of the culprit vessel in 120 minutes.

Subsequently, an Abdomen and Pelvis CT Angiography revealed colonic perforation due to Intrauterine Device (IUD) migration, associated with a positive blood culture for multidrug-sensitive *Escherichia coli*. The importance of thorough medical history to identify atypical presentations of serious diseases, such as Acute Myocardial Infarction (AMI) in women, is highlighted. Additionally, the need for regular gynecological follow-up to detect and prevent complications associated with intrauterine devices is emphasized. This case underscores the importance of multidisciplinary management in complex clinical situations and underlines the relevance of maintaining a high index of diagnostic suspicion to adequately address the multiple facets of the disease in patients with comorbidities and atypical presentations.

Keywords: Acute myocardial infarction; Coronary angiography; Intrauterine device; Colonic perforation

Abbreviations: AMI: Acute Myocardial Infarction; IUD: Intrauterine Device; RIF: Right Iliac Fossa; VSS: Verbal Simple Scale, SD: Supradesnivel; ECG: Electrocardiogram

INTRODUCTION

Cardiovascular disease is the most common cause of morbidity and mortality worldwide, and Chile is no exception. The symptoms of Acute Myocardial Infarction (AMI) can vary according to the age, gender, and comorbidities of the patients. In women and diabetics, the presentation of AMI can be less typical and subtle, which is a relevant fact to consider due to the impact that early diagnosis and treatment have on the recovery and prognosis of infarcted patients. On the other hand, in women of reproductive age, there are different contraceptive methods available. Among them, the Intrauterine Device (IUD) in its two forms (copper or hormone-releasing) is a widely used method, available in Chile, and

is characterized by being one of the most effective and safe methods. However, there are complications that can be serious, such as uterine perforation, with a reported incidence of between 0.2 and 3.6 per 1000 insertions [1-6].

CASE PRESENTATION

A 40-year-old woman with a history of long-standing type 2 diabetes, insulin-requiring, active smoking, and unspecified mood disorder. She initially presented to the primary care emergency department with 48 hours of abdominal pain, localized in the Right Iliac Fossa (RIF), of insidious onset, reaching an intensity of 8/10 on a Verbal Simple Scale (VSS), without relieving or exacerbating factors, associated with multiple episodes of vomiting. Symptomatic management and home rest were indicated. Subsequently, she developed diffuse abdominal pain of greater intensity (VSS 10/10) and began angina (VSS 6/10), with mandibular and right upper limb radiation. Due to the progression of the intensity of her abdominal symptoms, she presented to the emergency department of the Clinical Hospital of the University of Chile. On admission, she was tachycardic, hypotensive, disoriented, with chills, mottling on knees, slowed capillary refill (4 seconds), tender abdomen on palpation of RIF, and positive Blumberg sign. In the admission history, the patient was asked about her main symptom, referred to as abdominal pain. The initial suspicion was oriented towards possible complicated appendicitis, given the clinical picture and signs of shock presented by the patient on admission. Management with fluid resuscitation, antibiotics, and analgesia was initiated, and tests were requested: general laboratory tests and blood cultures. Due to the severity of the condition, the patient was transferred to a monitored care unit 45 minutes after admission to the emergency department. Supradesnivel (SD) of the ST segment was

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observed on the monitor in lead DII, so an Electrocardiogram (ECG) was performed, which showed ST-segment elevation in the inferior wall and posterior leads and ST-segment depression in the anteroseptal wall (Figure 1). Upon directed interrogation, the patient reported the concomitant angina. The case was presented to Cath Lab, and dual antiplatelet therapy, anticoagulation, and statins were indicated. Coronary angiography was performed 2 hours after admission to the emergency department, and occlusion of the dominant distal circumflex artery was observed, followed by thrombectomy and angioplasty with drug-coated balloon, achieving vessel reperfusion. After the procedure, the patient reported a significant decrease in abdominal pain. Additionally, chest, abdominal, and pelvic computed tomography angiography was performed, which reported colonic perforation at the cecum level due to migrated IUD (Figure 2). Subsequently, positive blood cultures for multidrug-sensitive *Escherichia coli* were confirmed. She received antibiotic treatment for 7 days, with a good response. Cardiological evaluation was completed with transthoracic echocardiography, which showed non-thinned hypokinesia of the inferior wall, basal, and middle segments, and an ejection fraction of 43%. Evaluated by colorectal surgery, surgical removal of the IUD was scheduled for a second time. Currently, the patient is discharged, awaiting definitive surgical procedure [1-6].

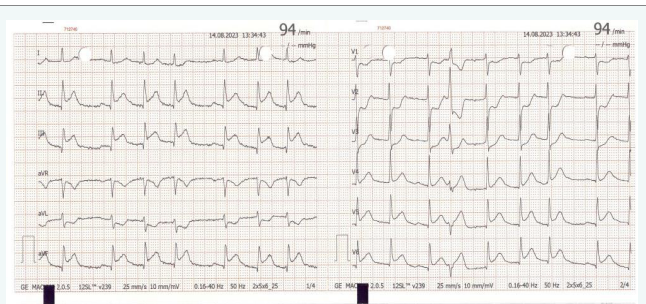


Figure 1 ECG diagnosis of AMI with ST-segment elevation in the inferior wall.



Figure 2 ECG diagnosis of AMI with ST-segment elevation in the inferior wall.

DISCUSSION

The diagnosis of myocardial infarction is often difficult, especially when the cardinal symptom is not angina. In this clinical case, the importance of thorough medical history to make early diagnoses, reducing the risk of short- and long-term complications, was highlighted. This is especially relevant in women, who often have atypical presentations of AMI. Furthermore, it is important to note that the timely management of AMI was primarily due to the detection of abnormalities in simple monitoring, emphasizing the importance of maintaining a high degree of diagnostic suspicion for AMI in all scenarios. Similarly, the patient's history also highlights the importance of periodic gynecological follow-up and education for the female population, as with adequate control, the migration and perforation of the IUD could have been detected earlier, which in this case led to bacterial translocation and complicated the clinical picture from a diagnostic and therapeutic standpoint.

CONFLICTS OF INTEREST

The authors declare no conflicts of interest.

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