Pseudo myocardial infarction due to postoperative ileus

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DESCRIPTION

An abnormal ECG triggered a cardiology consultation in a 65-year-old woman with postoperative ileus, a week after a complex abdominal wall reconstruction for recurrent incarcerated incisional hernia. She had no history of cardiovascular disease or risk factors. She presented with abdominal pain, emesis, diaphoresis and tachycardia at 115/min. Blood pressure was 141/74 mm Hg. Physical examination was benign, except for diffuse abdominal distension and tenderness. Basic metabolic panel and complete blood count were unremarkable and serial troponin T remained undetectable. So was postoperative troponin a week earlier, performed due to transient hypotension.

The ECG showed Q waves in precordial leads (V3–V6), inferior leads, and tall R waves in V1V2, raising concern for anterior, inferior and posterior infarcts. Of note, if it were not for the left axis deviation, this ECG could also have mimicked dextrocardia (figure 1). There were no associated ST-T changes. No previous ECG was available for comparison. In this postoperative context, tachycardia and mildly decreased oxygen saturation 94% on room air prompted a CT scan that ruled out pulmonary embolism but confirmed significant colic distension.

The ECG was repeated to make sure that the infarct aspect was not related to inappropriate lead placement;¹ it was unchanged. The absence of any ST-T shift, combined with normal troponins allowed to exclude an acute coronary syndrome.^{2–4} It was felt that the aspect of pseudo infarct was due to the upward displacement of the diaphragm and the heart by the distended bowels.

The patient was treated with supportive care for partial small bowel obstruction, that is, was kept nil by mouth and a nasogastric tube was placed.

Figure 1 Admission ECG, during ileus: sinus tachycardia, left axis deviation and pseudo infarct in the anterior (Q waves in V3–V6) and inferior (Q waves in DII–DIII–aVF) territories, as well as in the posterior territory (tall R waves in V1V2).

Figure 2 ECG 2 days later, abdominal distension resolving: reappearance of R waves in precordial leads.

Symptoms settled within 48 hours and the repeat ECG showed reappearance of R waves in the precordial leads (figure 2), confirming the diagnosis of pseudo infarct, merely due to cardiac axis horizontalisation. Left axis was still present, either due to residual abdominal distension, or pre-existing axis modification and in this case, meaning either old inferior infarct or isolated benign axis variation.⁵ The patient was discharged home a few days later, and follow-up ECG recommended due to potential clinical significance in case of left axis persistence.⁶

Older patients have a higher risk of early perioperative myocardial infarction after non-cardiac surgery.^{4,7} However, ECG abnormalities may occur for different reasons than atherosclerotic coronary disease, such as pericarditis, stress cardiomyopathy, vasospastic angina or non-cardiac causes, including alteration of the heart position due to external compression.^{8–10} Although we suspect ileus-related ECG changes may be frequent, only few publications address this issue.^{8–10} Better described are the ECG changes during the second and third trimesters of pregnancy, where a similar mechanism of upward displacement of the diaphragm can be encountered,

Learning points

- ▶ ECG modification mimicking myocardial infarction or pseudo dextrocardia may occur following ileus with significant abdominal distension.
- ▶ Ileus-induced abdominal distension may be responsible for upward displacement of the diaphragm and the heart with horizontal electrical axis, featuring Q waves in inferior, posterior and even anterior territories.

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resulting in frequent left axis deviation with Q waves in inferior leads and sometimes in V4–V6.^{11 12}

Likewise, an ileus-related abdominal distension may lead to ECG axis modification, mimicking myocardial infarct. A proper diagnosis may avoid unnecessary invasive testing.

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Case reports provide a valuable learning resource for the scientific community and can indicate areas of interest for future research. They should not be used in isolation to guide treatment choices or public health policy.

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