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IMAGING IN CARDIOLOGY

Electrocardiographic abnormalities caused by acute pancreatitis

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A 51-year-old man presented with severe acute upper abdominal pain and elevated serum levels of pancreatic enzymes due to acute pancreatitis associated with alcohol consumption. On admission, his heart rate was 60 beats per min, blood pressure was 90/65 mmHg, and temperature was 37.1°C. There were no signs of right-sided heart failure. The heart sounds were normal, no murmurs, and no pericardial friction rubs were heard. The electrocardiogram (ECG) on admission (Fig. 1) demonstrated sinus rhythm, normal axis, normal conduction and generalised aspecific ST-segment abnormalities. The ST-segment abnormalities were not limited to a specific coronary territory. Serum electrolytes and cardiac markers were normal. Transthoracic echocardiography demonstrated a normal left ventricular function, without valvular abnormalities or pericardial effusion. Coronary angiography was normal. The patient received general supportive care including fluid administration and pain control. After 4 days the electrocardiogram had substantially improved (Fig. 2).

Previous studies have described the association between pancreatitis and ECG abnormalities; up to 50% of patients hospitalised for acute pancreatitis have non-specific ST–T changes, diffuse T-wave inversions or ST-segment elevation [1, 2]. Transient wall motion abnormalities may also be present in patients with acute pancreatitis in the absence of coronary artery disease [1]. Potential pathophysiological mechanisms are circulating proteolytic enzymes, a vagally mediated reflex or systemic inflammatory response [1–4].

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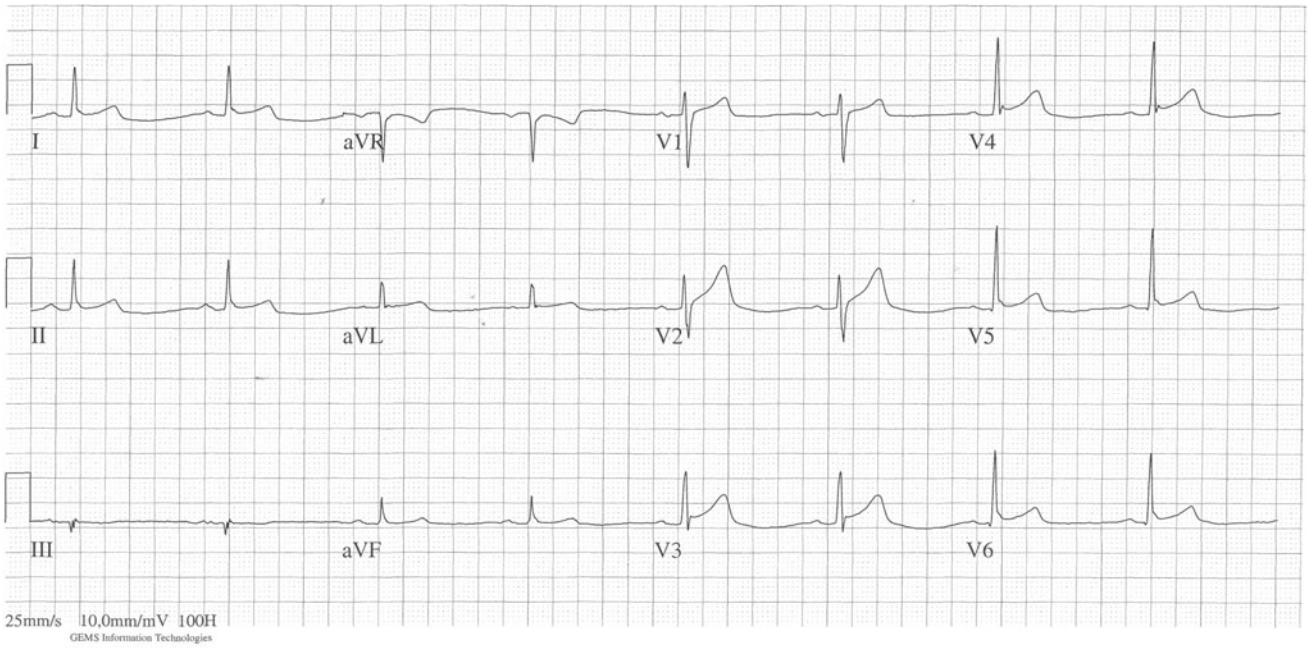

Fig. 1 Twelve-lead electrocardiogram on admission demonstrating generalised ST–T abnormalities caused by acute pancreatitis

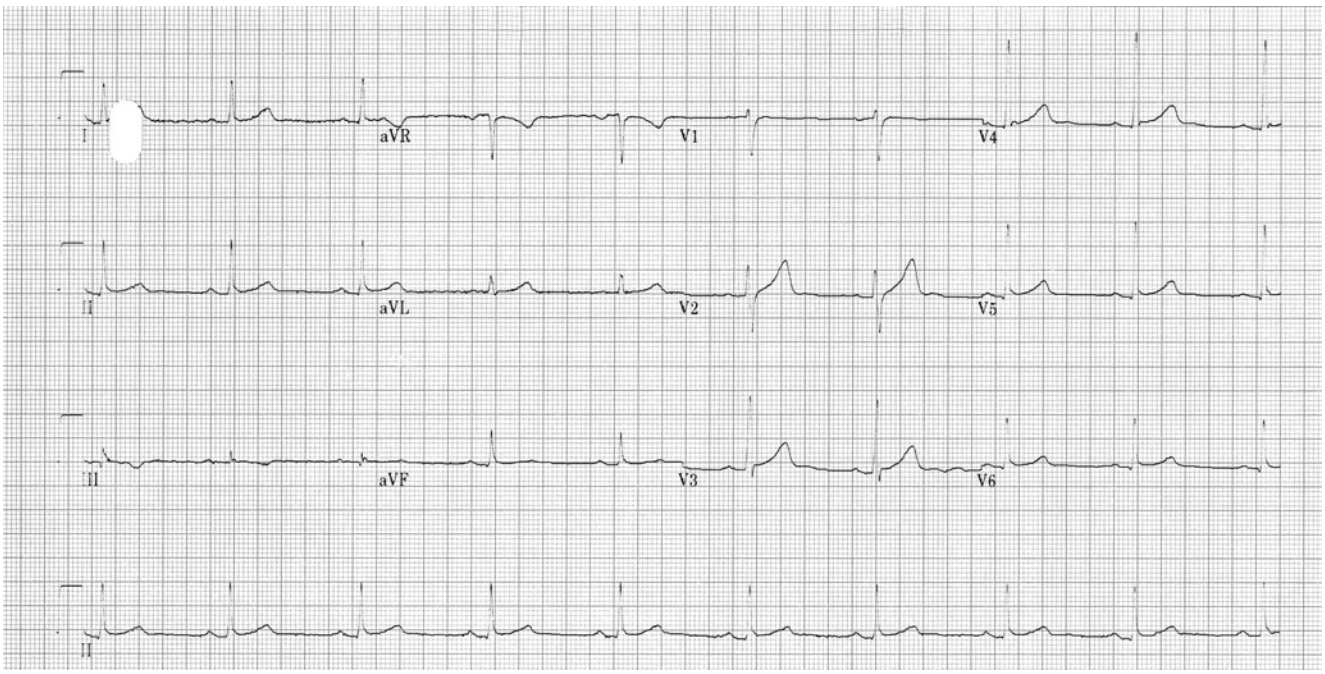

Fig. 2 Twelve-lead electrocardiogram after 4 days demonstrating few residual ST–T abnormalities

References

1. Rubio-Tapia A, Garcia-Leiva J, Asensio-Lafuente E, et al. Electrocardiographic abnormalities in patients with acute pancreatitis. J Clin Gastroenterol. 2005;39:815–8.
2. Hung SC, Chiang CE, Chen JD, et al. Images in cardiovascular medicine: pseudo-myocardial infarction. Circulation. 2000;101:2989–90.
3. Whitcomb DC. Clinical practice. Acute pancreatitis. N Engl J Med. 2006;354:2142–50.
4. Ro TK, Lang RM, Ward RP. Acute pancreatitis mimicking myocardial infarction: evaluation with myocardial contrast echocardiography. J Am Soc Echocardiogr. 2004;17:387–90.