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<td><strong>Citation</strong></td>
<td>Hong Kong Practitioner, 1997, v. 19 n. 4, p. 199-202</td>
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<td><strong>Issued Date</strong></td>
<td>1997</td>
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<td><strong>URL</strong></td>
<td><a href="http://hdl.handle.net/10722/45037">http://hdl.handle.net/10722/45037</a></td>
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A Patient With Non-Q Wave Acute Inferior Myocardial Infarction

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Summary

The occurrences of atrioventricular (AV) nodal blockade or right ventricular (RV) infarction in acute inferior myocardial infarction (MI) had been well recognised and signified a proximal right coronary artery (RCA) occlusion. However, they did not point out the extent of the RCA territory involved. We recently managed a patient with incomplete inferior MI in which ECG on presentation already showed the infarct-related RCA as the dominant vessel having proximal occlusion. Various aggressive treatments have been taken subsequently. (HK Pract 1997; 19: 199-202)

Introduction

Acute inferior myocardial infarction (MI) was once believed not to have serious sequele. Recently, new data support the contrary. We recently managed a patient with an acute inferior MI and its manifested complications. New perspectives concerning the disease are discussed.

Case

A 65-years old female non-smoker who had history of hyperlipidaemia presented with sudden onset of severe chest pain to the Accidents and Emergencies Department. ECG showed ST segment elevation (> 1 mm) over Leads II, III, and aVF; ST-depression/ T wave inversions over leads V2-V4 and inverted P waves associated with shortened PR interval over various chest and limbs leads (Figure 1). These findings were compatible with extensive acute inferior myocardial infarction (MI) associated with conduction disorder. A right sided ECG was not available. There being no contraindication to thrombolytic therapy, streptokinase 1.5 megaunits was given
Non-Q Wave Acute Inferior Myocardial Infarction

**Discussion**

It is well known that acute inferior MI can be associated with bradycardia and/or AV block. These occurrences may be transient or require temporary pacing, but occasionally a permanent pacemaker will be needed. Conduction disorder did occur in our patient but reverted back to normal sinus conduction when the infarct-related artery (right coronary artery, RCA, in this case) reperfused. In addition, the finding of ST segment elevation of 1 mm or more in lead V4R (right-sided ECG) has a high sensitivity and specificity for detecting right ventricular (RV) infarction, pinpointing the site of occlusion in the proximal RCA. When RV infarction occurs, its stiffness increases, thereby impeding diastolic filling and leads to potential haemodynamic embarrassment. When hypotension or shock occurs, expansion of vascular volume is generally employed as initial therapy. In non-responders, dobutamine or similar inotropic agents may be helpful.

The occurrences of AV nodal blockage or RV infarction in acute inferior MI had been well recognised and signified a proximal RCA occlusion. However, they did not point out the extent of the RCA territory involved (i.e. whether the infarct-related RCA is dominant or not). Certainly, if a proximal occlusion in a dominant RCA
Figure 2: ECG showing reperfusion of acute inferior MI

Figure 3: Right coronary artery in right anterior oblique view showing a critical lesion in its proximal segment (arrow)

Figure 4: Right coronary artery in right anterior oblique view after successful PTCA (arrow)
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Key messages

1. Proximal RCA occlusion in acute inferior MI is suggested by the occurrences of AV nodal blockade and/or RV infarction.

2. Presence of significant precordial ST depression (V1-V3) in acute inferior MI reflects the involvement of a large RCA.

3. Non-Q MI or incomplete MI predicts a high one year coronary event rate and therefore necessitate cardiac catheterisation and revascularisation procedure accordingly as performed here.

In summary, acute inferior MIs are not always benign and various clinical and ECG parameters can help identify those high risk cases for more aggressive treatment strategy.

References


