ECG INTERPRETATION FOR THE EMERGENCY DEPARTMENT

Clinical ECG interpretation—an introduction

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Twelve lead electrocardiography is now becoming an almost routine investigation in accident and emergency (A&E) practice. On many occasions, interpretation of the electrocardiogram (ECG) is relatively straightforward, especially when “classical” changes are present. However, interpretation of ECGs can be extremely difficult and over-reliance on a single ECG, while ignoring important features in the history, is well recognised as a recipe for disaster.

In this issue, Brady and Morris start a series of articles reviewing interpretation of the ECG in a patient with chest pain. Perhaps the most important article deals with a patient with chest pain and a normal ECG. The authors rightly point out the great harm that may flow from over-reliance on a normal ECG when discharging a patient with chest pain. There seems to be a “mindset”, especially among junior A&E staff, that the only diagnosis that has to be excluded in such patients is acute myocardial infarction and this exclusion can be carried out by having a normal ECG. Few consider unstable angina in these situations, giving rise to one of the commonest major errors made in A&E practice.

Unstable angina is ischaemic chest pain of recent onset, and especially if it has occurred at rest or during sleep. This must be regarded as a very serious condition with mortality similar if not exceeding that of acute myocardial infarction at one month. Unfortunately, the unwary are lulled into a false sense of security by having a patient whose chest pain has resolved and has a normal ECG. The chest pain may have resolved after a trial dose of

antacids and this is taken as proof positive that the problem is oesophagitis. The patient is then sent home, in some cases to die—“death by white medicine”. By definition the pain of unstable angina resolves spontaneously in the short term and the improvement with antacid treatment is merely a reflection of this natural history of the condition. This problem has been recognised for years and yet such patients continue to be discharged from A&E departments with serious and at times fatal consequences.

Brady and Morris emphasise the importance of a full clinical assessment of these patients and a conservative approach to the exclusion of not only acute myocardial infarction but also unstable angina.

In another article, they discuss the changes associated with acute myocardial infarction, concentrating on the indicators for thrombolytic treatment. An increasing body of evidence suggests that the most timely place to deliver thrombolytic treatment is in the A&E department but the organisational and educational aspects of this should not be underestimated. It is vital in the rush for speed and efficiency that safety and accuracy of diagnosis are not compromised. The authors go into the difficulties encountered in the interpretation of an ECG in a patient with myocardial infarction.

While much of the information contained in these articles is familiar to many A&E clinicians, there will be few who will have studied this aspect of emergency medicine in such detail as this transatlantic collaboration.

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