Picture Quiz

Abnormal cardiac conduction in a septic patient: incidental finding or cause for concern?

Jackson M & Balasubramaniam K

Keywords
Aortic valve (AV) endocarditis; aortic root abscess; atrioventricular block

Key points

- Aortic valve endocarditis should be considered in septic patients with evidence of significant cardiac conduction disease
- Careful monitoring for PR interval prolongation is vital to allow early detection of complications of AV endocarditis such as aortic root abscess.
- Urgent cardiac surgery is recommended for aortic root abscess; however, there is a high chance of permanent pacemaker implantation

The case

A 64-year-old male presents to the emergency department in acute respiratory distress. He gives a limited history of progressive shortness of breath of one week's duration and several episodes of sudden unexplained syncope. There was no history of chest pain, palpitations or localising symptoms of infection. He takes no regular medications.

On examination, the patient was haemodynamically stable with a blood pressure of 125/70mmHg and an irregularly irregular pulse of 70bpm. He was pyrexial with a temperature of 39.1°C. Physical examination demonstrated bi-basal crepitations and quiet heart sounds.

Blood tests showed an elevated white cell count of 24.2x10^9/l with a neutrophilia of 20.9x10^9/l. There was an acute kidney injury (urea 25.3 mmol/l creatinine 155 umol/l) and deranged liver function (ALT 78 U/l, ALP 206 IU/l, GGT 686 U/l). His CRP was over 300mg/l. A random high-sensitivity troponin I was measured over 15000ng/l.

Chest radiography showed pulmonary oedema. His initial ECG can be seen in figure 1A. After initial clinical improvement following intravenous diuretics, a repeat ECG was performed (figure 1B). Shortly afterwards, the patient began to have prolonged (> 15 seconds) periods of ventricular standstill (figure 1C).

Questions

1. What abnormalities are present on the ECGs?
2. What is the likely diagnosis and how should this person be managed?

Competing interest

No conflicts of interest or financial disclosures for either author.



Figure 1. A – ECG performed in emergency department. **B –** Subsequent ECG performed on coronary care unit. **C –** Telemetry tracing showing ventricular standstill.

Jackson M
MBChB

Balasubramaniam K
MBBS PhD

The James Cook University Hospital, Middlesbrough, United Kingdom, TS4 3BW

Corresponding author
Matthew Jackson
The James Cook University Hospital
Marton Road
Middlesbrough
TS4 3BW
Email: matthew.jackson8@nhs.net / mwpjackson@gmail.com

© 2018 Rila Publications Ltd.