



Dr Stephen Fenton

A stumble in the dark



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An elderly man momentarily blacks out in the middle of the night.

A 72-YEAR-OLD retired Army general presents after a possible syncopal episode.

He described that he was on his way to the bathroom in the middle of the night when he apparently collapsed, although he felt that he may have tripped on a rug.

His wife had found him on the floor, semiconscious but rousable, and he recovered full consciousness soon after.

He is a non-smoker but had been a heavy alcohol drinker in his younger days. He plays bowls and golf with no dyspnoea, and there is no history of palpitations or hypertension.

Physical examination revealed a BP of 150/85 mmHg. His pulse was regular with a rate of 72 per minute.

There was no clinical evidence of a murmur or cardiac failure and examination was otherwise normal.

The ECG above was subsequently recorded.

Q1 Based on this ECG, you would regard the next appropriate test as which of the following:

1. Holter monitor study
2. Electrophysiology study
3. Repeat ECG
4. Urgent serum troponin
5. Urgent neurological consult

Q2 Based on the clinical history, physical findings and ECG, which one of the following is not likely to be an underlying cardiac issue?

1. Old anterior infarct
2. Hypertensive heart disease
3. Cardiomyopathy – possibly alcohol related
4. Conduction system disease
5. Old inferior infarct

DISCUSSION

This gentleman presents with possible syncope or pre-syncope, but the history is confused by the fact that he may have merely tripped.

The ECG is abnormal. It shows a regular rhythm with P-waves indicating sinus rhythm at a rate of 74 per minute, but the QRS is widened and is more than three small squares, or more than 0.12 seconds, and this indicates bundle branch block (BBB).

The QRS complex is predominately down in lead V1, which indicates left bundle branch block (LBBB). The QRS complexes look quite strange in the limb leads, with an unusually inverted pattern in lead 1 and AVL, and an upright pattern in AVR.

If the ECG was correct, this would indicate a very odd axis, but in fact this appearance is indicative of crossed limb leads.

The correct answer for Question 1 is No. 3 – the ECG should be repeated with limb leads corrected and this would show a more usual appearance in these leads.

In this context, LBBB is very likely to indicate some sort of underlying abnormality. The possibility of an

anterior infarct cannot be excluded. Hypertensive heart disease based on this patient's blood pressure is also a possibility.

Conduction system disease and cardiomyopathy are also options but the ECG adequately excludes the possibility of an inferior infarct.

The correct answer for Question 2 is therefore No. 5.

This patient requires further investigation. An echocardiogram is appropriate to investigate left ventricular size and function, exclude valvular heart disease and rule out other underlying pathology.

A stress test with imaging would also be appropriate. LBBB can make both stress echocardiograms and myocardial perfusion studies difficult to interpret, but either would be appropriate to assess this patient's coronary artery status. A Holter monitor study would also be a reasonable baseline test to ensure there are no conduction system issues.

If nothing untoward shows up in these tests, the management could probably be expectant, but close observation of the patient's blood pressure, lipid profile and other risk factors would be advisable.

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