Clinical case study of sudden loss of consciousness
Mr Patel is a 50-year-old accountant brought in by ambulance to the emergency department having collapsed in the street. He gives a history of running for the bus and the next thing he knew was that he was on his back with blood running down his face and a passer-by calling for help. He has no idea what happened whilst he was passed out but witnesses report some brief twitching before he came round about 20 seconds later. He didn’t feel too sleepy afterwards but was in a bit of ‘shock’ and he has a lot of pain in his face. This has never happened before and neither he nor his family have any history of heart problems. The only time he’s been ill before was rheumatic fever as a child and his appendix taken out as a teenager. He did report that he regularly takes a statin and takes a spray under the tongue that his GP gave him for intermittent chest pain. He’s never smoked and doesn’t drink. He grew up in India but came to the UK 30 years ago.
What three features of the history indicate that this syncope has a sinister cardiac cause?
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- Sudden onset (resulting in injury)
- Relation to exercise
- Quick recovery time

The above features are consistent with cardiac syncope and should raise alarm bells. Quick recovery time is in keeping with cardiac syncope and would make an epileptic seizure less likely. The twitching is likely to be anoxic twitching, rather than any tonic-clonic jerking.
What three features of the history indicate that this syncope has a sinister cardiac cause?

Additional information 1:
On examination the blood pressure is 110/95 mmHg. The carotid pulsation feels slow, rising in nature and you can hear an ejection systolic murmur loudest at the right upper sternal edge, loudest on expiration with the patient sitting forward.
Can you suggest a likely aetiology based on the examination and history?
This patient has symptoms consistent with aortic stenosis.

The commonest cause of AS is senile degeneration and calcification. However, this is unlikely in a 50-year-old.

Rheumatic heart disease is a likely cause given Mr Patel’s history – this disease is more common in the developing world.

Mr Patel’s drug history implies previous angina episodes, however, in his case the angina may be secondary to outflow tract obstruction, rather than coronary artery disease and hence his medication may be of less benefit.

Can you suggest a likely aetiology based on the examination and history?
Apart from bedside observations, blood tests, CXR and ECG, what would be the next most important investigation?
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Echocardiography would confirm the diagnosis and give an accurate measure of the severity of the murmur.
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Additional information 2:
Mr Patel’s echo indicates critical stenosis with pressure gradient across the valve of 55 mmHg and valve area 0.4 cm².
What would be the next step (for you as the junior doctor looking after him)?
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- An inpatient review by the cardiology team would be very appropriate, prior to discharge
- Beta-blockers should be avoided (do not want to drop systemic blood pressure)
- Urgent follow-up should be arranged with cardiology/cardiothoracic surgery
- Mr Patel should be advised to avoid exertion
What would be the next step (for you as the junior doctor looking after him)?

Additional information 3: Mr Patel is seen in cardiology clinic 3 weeks later.
What is likely to be advice provided to him?
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- With critical stenosis along with syncope, there is 50% mortality at 3 years.
- Mr Patel should be strongly advised to undergo a valve-replacement operation.
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