

A collapsed overseas visitor

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Emergencies can spring up at any time and in many incarnations. Are you adequately equipped to deal with them? Each month we present a case study in emergency medicine based on real cases and events. Would you have been able to help this patient?



Recently you have noticed a sharp increase in the number of tourists in your own general practice and in the emergency department of the local hospital where you do regular shifts.

During one of your hospital shifts you are asked by the emergency medicine consultant to see a patient whom the triage sister has categorised as category 2 (to be seen in 10 minutes). On the ambulance stretcher with oxygen and an intravenous line running is an anxious white-haired man with an even more anxious well-dressed white-haired lady holding his hand. You introduce yourself to them and become part of the caravan into the resuscitation cubicle. You presume the lady to be his wife although many an assumption like that has been quite wrong and embarrassing. That is why you now tactfully find out the relationship.

The patient is quickly transferred onto an emergency patient bed and set up on all the monitors by the nurses. The procedure is that the patient is put on our bed before the ambulance officers give their formal report, which helps prevent back injuries by having many people available to lift the patient over. Talking with the ambulance officers often gives useful supplementary information to that written on the transport sheet.

The collapse

From their accent you determine the couple are from the United States. Apparently the man had been sitting down at breakfast and had collapsed.

The ambulance officers found a 63-year-old man lying supine on the floor of a railway station concourse café. He was being attended to by a couple of railway first aid officers who stated that his wife had put him in the left lateral position after his collapse. He had been totally unresponsive for a couple of minutes. When they found him he was pale, diaphoretic and bradycardic. He was fully conscious (normal Glasgow coma scale of 15), with a pulse of 52 beats per minute (bpm) and a blood pressure

of 80/50 mmHg. His wife also confirmed a slow pulse when he was unconscious.

It turns out that he is a gynaecologist and she a nurse, and they are having a holiday after attending a conference in Sydney. It is relatively easy to find out that he had an acute infarct three years ago with four stents put in, and also that he is on a long list of mainly cardiovascular medications. The patient also tells you that until the collapse he had felt no pain and had not been sick or symptomatic.

A finger prick test by the ambulance indicated that the patient's blood sugar was raised at 9 mmol/L (normal 3 to 8 mmol/L). The nurses also document similar observations, including blood pressure in both arms as our department recently had three thoracic aortic dissections in one day!

Investigating the problem

The crowd in the treatment cubicle dissipates and you are left with a very pleasant patient, his wife and the problems of what has gone on and what is going on now in this patient who is still hypotensive after his collapse.

All the mechanical monitoring, ECG,

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arranging a portable chest x-ray and the taking of bloods is being quickly and quietly done by the nurse helping you. You go into automatic mode as well: airways – OK, breathing – oxygenation 98%, respiratory rate 20, but circulation – bradycardia and hypotension. However, the ECG shows sinus rhythm with no acute ischaemia visible.

As the patient has no pain or major symptoms you pull up chairs for his wife and yourself. Being an old hand at this, you have got ready everything you need to do a detailed history and admission – clipboard, forms, paper, reflex hammer – you know the only way to go now is to get a meticulous history, examination and work-up.

History

The doctor and his wife had flown out five days ago nonstop from Minnesota and today they were going to catch a train to Melbourne. Sitting in the station cafe, the patient had felt perfectly well, but just as he was about to drink a cup of tea he felt clammy and collapsed into unconsciousness.

A detailed search for associated symptoms of fevers, angina, breathlessness, pain are all negative. He does not even have a headache now. However, he volunteers that just before collapsing he had noticed his palms being red.

He is a nonsmoker and a nondrinker. His acute infarct three years ago in 1998 had happened, curiously, at another medical conference – he'd had classic chest pain and a feeling of impending doom as he was infarcting before he was stented. In an accident in 1997 he was up a tree, cutting off branches, when he looked up at a steep angle, became dizzy and fell, sustaining a fractured neck of the femur and a rotator cuff tear. (You reinforce your resolve that nobody should be up trees or ladders at the age of 60 years.) He also had benign prostatism and lactose intolerance.

His medications (all eight) include a

beta blocker, an antidepressant (SSRI), a statin for raised cholesterol, aspirin and blood pressure tablets.

Examination

Except for the bradycardia of 56 bpm and BP now 90/50 mmHg, physical examination is once again entirely unremarkable. Stools are haemoccult-negative.

You have no definite idea of causation. Although there are no neurological signs or any of fitting (jerks or incontinence), a head CT is suggested to you as part of this work-up.

The bloods come back with some minor abnormalities of a raised glucose level of 9.5 mmol/L (normal 3 to 8 mmol/L), a creatine kinase just over 137 U/L (normal < 130 U/L) and a creatinine of 0.14 mmol/L (normal 0.06 to 0.12 mmol/L). All the cardiac enzymes and markers were normal.

CT and V/Q scanning

Time to call in cardiology as they look after the initial work-up of collapses. The registrar does another five page assessment. In the meantime, another bit of history is remembered by the patient – a similar thing happened in 1998 at home, a collapse with red palms just before, for which he was admitted overnight, with many tests but no diagnosis. By now the BP is 130/80 mmHg with no postural drops, the pulse is up to 60 bpm and there are no neurological signs.

The CT scan with no contrast (due to the raised creatinine) was NAD (no abnormality detected).

Since the patient had travelled by air recently and some crackles were heard in the midzone of the right lung, a ventilation–perfusion (V/Q) lung scan is organised as well because of the risk of 'economy class syndrome'. Arterial blood gases off oxygen revealed decreased P_{O_2} of 69 mmHg (normal 75 to 103 mmHg).

The V/Q scan provisional report comes back as 'subsegmental mismatching', indicating a high probability of pul-

monary embolus.

The cardiology registrar 'turfs' (quickly arranges the transfer) to the vascular medicine service. He also arranges for full heparin anticoagulation, leg venous Dopplers and antiembolism stockings. The vascular medicine registrar pops down before bringing the boss and adds a spiral lung CT, to show any emboli, to the 'to do' list.

The hospital is fortunate in having a vascular physician who is expert at venous clots and emboli. He reviews the patient and the V/Q scan and does not share the opinion of mismatch, nor that any such lung pathology caused the symptoms. A nuclear medicine consultant formally reviews the scan and agrees. The spiral CT shows no emboli or pathology. The duplex scan of the legs also reveals no flow problems or clots.

Cardiology review and discharge

An expedited review by cardiology is requested. The patient is kept on subcutaneous fractionated heparin and a cardiac monitor. As there are no beds in coronary care the patient is kept in the emergency department and monitored. This allows you to catch up with the patient on your next shift.

The next day a professor of cardiology sees the patient and is happy to state there is no cardiogenic cause for the collapse. The patient is discharged on basically the same medications as he was previously taking except the dose of beta blockers is lower.

On reflection

This patient was comprehensively, maybe too well, investigated (they even found a decreased level of thyroid hormone with a normal thyroid stimulating hormone)

for what probably was a simple vasovagal syncope – bradycardia and possible initial vasodilation (red palms). However, the fear of missing a crucial, treatable diagnosis in a collapsed patient, even in less litigious non-Americans, is appropriately great.

The patient and his wife were very grateful and impressed by the care and attention they received, even writing a letter of thanks. Also, they could not get over how little it was going to cost them, compared to home!

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