Recurrent cardiogenic syncope as the first presentation of thyroid carcinoma

Alex Birly[1]

Alexander Renwick[1]

Peysh Patel[2]

Author details can be found at the end of this article

Correspondence to:
Alex Birly;
alex.birly@hotmail.com

Introduction

Syncope is a prevalent clinical condition in older patients, associated with significant mortality and risk of recurrence. It is defined as a transient reduction in cerebral perfusion resulting in loss of consciousness, often with rapid resolution. There is a wide range of causes, including neurally-mediated syncopal syndromes, orthostatic hypotension and cardiac arrhythmias. This article describes the case of a 98-year-old woman who presented to the cardiology department with a neck lump and recurrent unexplained syncope. This case highlighted the need for a considered, pragmatic and individualised approach to patient management, as well as the need for a broad differential for diagnosis when assessing a patient presenting with syncope.

Discussion

This case represents a rare complication of thyroid carcinoma. The pathophysiology was deemed to be extrinsic compression of the left carotid sinus by the large thyroid mass with baroreceptor stimulation causing heightened vagal response. The secondary bradycardia and asystole diminished cerebral perfusion and resulted in syncope. Initial management was observation and avoidance of pressure on the mass. Given the patient's age and comorbidities she would not have been suitable for any significant surgical procedures, so it was thought that insertion of a permanent cardiac pacemaker would relieve the symptom of recurrent syncope. The patient had a likely thyroid malignancy and, from her perspective,

Case report

A 98-year-old woman with a medical history of hypertension, chronic kidney disease and stroke was referred for neck ultrasound after the GP noticed a lump on her neck. During the scan, discrete syncopal episodes occurred on compression of the mass. Further questioning revealed a 1-month history of recurrent pre-syncopal and syncopal episodes up to five times a day, with no preceding symptoms and quick recovery without post-ictal phenomena. There was no history of dysphagia, dyspnoea, stridor or dysphonia.

The patient was admitted for further assessment. She was haemodynamically stable and examination otherwise unremarkable. Baseline bloods including thyroid-stimulating hormone were normal, with a 12-lead electrocardiogram confirming first degree heart block but nothing else. On neck rotation, syncope reoccurred and correlated with sinus arrest for up to 8 seconds on telemetry, with secondary severe bradycardia and spontaneous recovery.

A 12-lead electrocardiogram showed sinus rhythm with a first degree atrioventricular block at a rate of 90 beats per minute. Telemetry monitoring showed multiple sinus arrests (Figure 1). A computed tomography scan of the neck revealed a multinodular goitre with grossly enlarged left lobe, which was thought to possibly be a thyroid malignancy with retrosternal extension, lymph node involvement in the supraclavicular fossa and mediastinum as well as pulmonary metastasis. The goitre was described as not invading the trachea or oesophagus but demonstrated substantial narrowing as a result of mass effect (Figure 2).

Initial management was a period of observation on cardiac monitoring with avoidance of direct pressure on the mass. Owing to the patient's age and comorbidities, a pragmatic approach was taken to insert a single lead pacemaker for symptomatic relief. Further investigations to assess the aetiology of the thyroid mass were arranged in the outpatient setting.

At the time of writing, the patient had not experienced any further syncopal episodes since pacemaker insertion and was under best supportive care for her thyroid adenocarcinoma.

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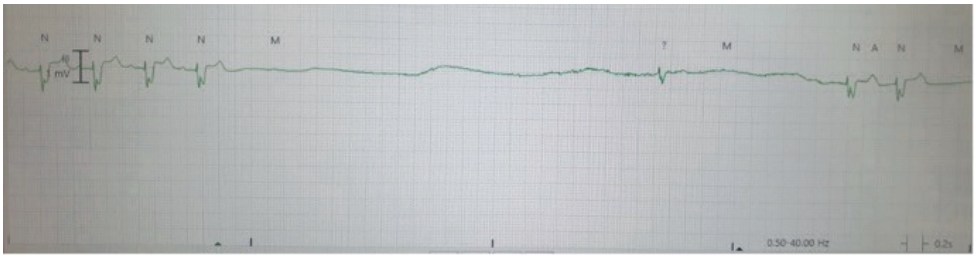

Figure 1. Sinus arrest on inpatient telemetry.

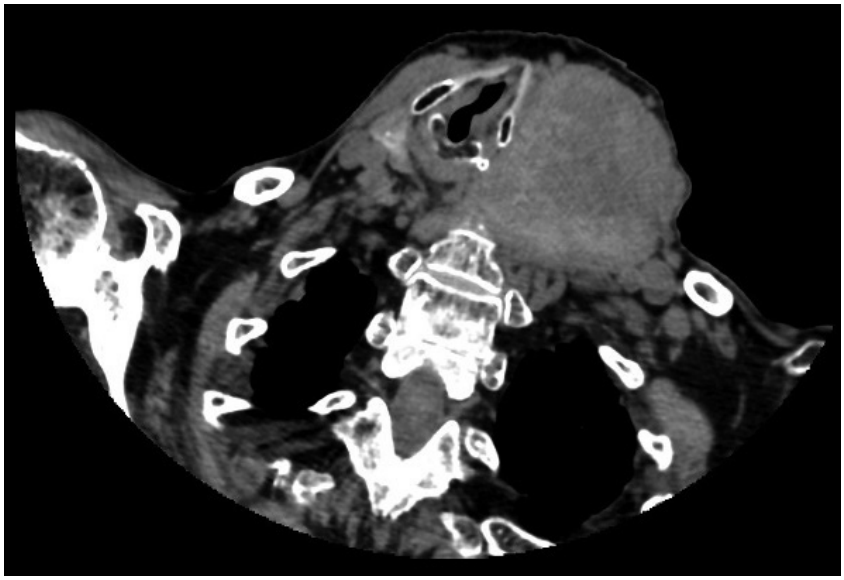

Figure 2. Computed tomography scan of the neck showing a large thyroid mass in close proximity to the left carotid artery.

the priority was not an extensive exploration of the aetiology but protection from further syncope, hence the pacemaker was implanted.

Given the patient's presentation and advanced age, it would be prudent to exclude cardiogenic syncope, either structural or arrhythmic. Other differentials include neurally-mediated syndromes including neurocardiogenic syncope, carotid sinus hypersensitivity and orthostatic hypotension. In the absence of focal neurological signs, a cerebrovascular cause would be unlikely (Arthur and Kaye, 2000).

A similar case was presented by Owen et al (2003). The patient presented with syncope, bradycardia and associated neck mass; investigations revealed a thyroid carcinoma and this was also managed with a permanent pacemaker. Deshmukh and Ozcan (2017) also presented a case of a patient with syncope and a goitre, and again a cardiac pacemaker was the treatment of choice.

Learning points

- Accurate and thorough history taking is vital when assessing a patient with symptoms of syncope because of the wide range of differential diagnoses.
- A large neck mass may result in extrinsic compression of the carotid sinus and lead to a heightened vagal response.
- Cardiac pacemakers can be considered for symptomatic relief for patients who are for best supportive or palliative care and may dramatically increase quality of life.
- This case highlights the need for a considered, pragmatic and individualised approach to patient management.

Author details

[1]Department of Cardiology, Leeds General Infirmary, Leeds, UK

[2]Department of Cardiology, Queen Elizabeth Hospital Birmingham, Birmingham, UK

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