Orthostatic hypotension in an octogenarian—an unusual presentation

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Abstract

Orthostatic hypotension is a common problem in older adults and can be associated with falls, dizziness and syncope and their associated consequences. Therefore, it is important to recognise the condition and institute appropriate management. We report an elderly woman who presented with orthostatic hypotension and was found to have a rare, benign yet potentially fatal condition.

Keywords: older adult, angiomyolipoma of the kidneys, orthostatic hypotension

Case report

An 81-year-old woman, of previous good health, presented with a 2-day history of light-headedness with associated short episodes of collapse and loss of consciousness. She also described having experienced, just prior to her admission, some abdominal discomfort. There was no history of haematemesis, malaena or fresh rectal bleeding. She was not on any antihypertensive medication or on any diuretics. She was noted to have significant postural hypotension. There was a firm, non-tender, right loin mass. The remainder of the examination was unremarkable.

On admission, blood tests demonstrated a haemoglobin of 13.3 g/dl, mean corpuscular volume 90.3 fl, white blood cells $22.3 \times 10^9/l$, neutrophils $20.5 \times 10^9/l$, platelets $133 \times 10^9/l$, sodium $133$ mmol/l, potassium $4.2$ mmol/l, urea $9.0$ mmol/l, creatinine $78$ µmol/l. Initial investigations were otherwise unremarkable. Over the following 2 days symptoms persisted, but were of a less severe nature. A significant reduction in haemoglobin was noted over this time. No obvious source of blood loss was identified and, of particular note, no haematuria was evident on urinalysis.

Abdominal ultrasound scan revealed a large hyperechoic mass in the lower pole of the right kidney with an appearance suggestive of renal cell carcinoma. A subsequent contrast-enhanced abdominal and pelvic computed tomography scan confirmed the presence of a 6 cm, right-sided, mixed-density renal mass containing fat with early arterial enhancement (Figure 1). Adjacent to this was an area of loculated fluid (Figure 2). On the basis of these radiological findings a diagnosis of renal angiomyolipoma with associated perirenal haemorrhage was made. The haemoglobin returned to normal within 2 weeks without the need for blood transfusion.

Discussion

Orthostatic hypotension is a relatively common and potentially dangerous condition in older adults. The prevalence of orthostatic hypotension in unselected elderly people ranges from 5 to 30\% [1]. It is greater in the institutionalised population [2] and increases with age [3]. Because of age-related physiological changes in the cardiovascular system and a blunted response to the recruitment of the sympathetic system, older people tend to be more vulnerable to orthostatic stress than younger ones. Patients with orthostatic hypotension are more prone to falls along with their consequences and experience more frequent dizziness and syncope, making it an important clinical sign to look for. The diagnosis is based on clinical symptoms together with the measurement of blood pressure both in the supine and upright positions. It is defined as a decrease in systolic blood pressure of at least 20 mmHg or a diastolic blood pressure of at least 10 mmHg within 3 minutes of standing [4].

Accurate measurement of blood pressure is of paramount importance in the assessment of falls and cardiovascular risk. Large differences in measurement technique and timing of standing blood pressure could influence the individual
detection and treatment of orthostatic hypotension and the reported prevalence of orthostatic hypotension [5]. To diagnose orthostatic hypotension, physicians rely on blood pressure measurements performed by nurses. Therefore, it is critical to know how accurately these measurements are performed. It is important to choose the correct choice of cuff size, ensuring the cuff is at the heart level and choosing the correct timing for recording the blood pressure. Also, the conventional sphygmomanometer with its erratic position of the mercury column makes it difficult to assess the accuracy of blood pressure readings. There is evidence to suggest that devices such as Finapress (measures beat-to-beat blood pressure), which record continuous change in blood pressure with change in posture, can be useful in the elderly with clinical symptoms of orthostatic hypotension [6].

The other interesting component of the case was the detection of a renal angiomyolipoma as these are uncommon, benign mesenchymal tumours thought to be derived from perivascular epithelial cells and composed of thick-walled blood vessels, mature adipose tissue and smooth muscle cells [7].

More than half of renal angiomyolipomas present as an incidental finding on radiographic investigation [7]. Sporadic tumours in particular, however, present symptomatically [8] with symptoms of loin pain, a palpable abdominal mass and haematuria [8], and less commonly with anaemia [7] and fever [8]. In addition, some tumours present more dramatically. Several cases are reported of potentially fatal tumour rupture with massive intrarenal, perirenal, retroperitoneal or intraperitoneal haemorrhage. Five to ten per cent of patients are thought to present in such a fashion, the haemorrhage manifesting itself as an acute abdomen with associated hypovolaemic shock [7, 8]. Our patient falls somewhere in the middle of this spectrum of disease, presenting with episodes of light-headedness and collapse, presumably resulting from postural hypotension secondary to hypovolaemia induced by tumour rupture and haemorrhage.

The combined use of abdominal ultrasound and computed tomography facilitated the diagnostic process in this instance; investigation techniques which now form the diagnostic foundation for these tumours [8]. Typical ultrasound findings in cases of angiomyolipoma would be of a well-circumscribed, hyperechogenic lesion [7, 8]. Computed tomography classically demonstrates intratumoral fat, which is often considered diagnostic of renal angiomyolipoma [7, 8], although this axiom is not absolute. Such confidence in radiological diagnosis and the essentially benign nature of renal angiomyolipomas often permits a relatively conservative approach to their management.

This case serves to highlight this relatively rare but potentially serious condition, presenting here in a patient of more advanced years than is generally the case and in a less conventional manner, as a consequence of potentially fatal spontaneous perirenal haemorrhage. It also emphasises the importance of recognising and diagnosing orthostatic hypotension at the bedside and investigating the causes of the condition. It is also critical to look for non-gastrointestinal causes of orthostatic hypotension in the presence of anaemia in the elderly.

**Key points**

- Orthostatic hypotension is a common problem in older adults.
- It can result in falls with serious consequences and hence its recognition is important.
• Accurate measurement of blood pressure, preferably using beat-to-beat blood pressure monitoring, is of paramount importance.
• Think of non-gastrointestinal causes of orthostatic hypotension in patients presenting with anaemia.

References

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