

# Diagnosis Under Pressure: An Unusual Case of Orthostatic Hypotension

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## ABSTRACT

A 75-year-old man with a history of BPH and squamous cell carcinoma of the tongue, presented to hospital with a one-month history of recurrent falls associated with orthostatic lightheadedness. On initial examination he had a blood pressure (BP) of 132/75 and heart rate (HR) 86 while supine and BP 101/54, HR 88 while standing. Physical exam revealed a left neck mass, and computed tomography confirmed a large left nodal mass with encapsulation of the left carotid artery. He was not a surgical candidate and had symptomatic improvement with midodrine and fludrocortisone. This case highlights a unique cause of orthostatic hypotension due to mechanical disruption of blood supply and autonomic innervation, and exemplifies the lack of compensatory tachycardia with autonomic dysregulation.

## RESUME

Un homme de 75 ans ayant des antécédents d'HBP et de dysrégulation spinocellulaire de la langue s'est présenté à l'hôpital avec des antécédents d'un mois de chutes récurrentes associées à des vertiges orthostatiques. Lors de l'examen initial, il avait une tension artérielle (BP) de 132/75 et un rythme cardiaque (HR) de 86 en position couchée et une BP de 101/54, HR 88 en position debout. En évaluant les causes communes, une tomographie informatisée de la tête/cou a révélé une grande masse nodale gauche avec encapsulation de l'artère carotide gauche. Il n'était pas un candidat à la chirurgie et présentait une dysrégulation symptomatique grâce à la midodrine et à la fludrocortisone. Ce cas met en évidence une cause unique d'hypotension orthostatique due à une perturbation mécanique de l'approvisionnement en sang et à une innervation autonome, et illustre l'absence de tachycardie compensatoire avec dysrégulation autonome.

## Case Description

Mr. M, a 75-year-old gentleman with a history of benign prostatic hyperplasia (BPH) and squamous cell carcinoma of the tongue, presented to hospital with a 1-month history of recurrent falls associated with orthostatic lightheadedness. His medications were tamsulosin and morphine as needed. On initial examination, he had a blood pressure (BP) of 132/75 and heart rate (HR) 86 while supine and BP 101/54, HR 88 while standing. On head and neck exam he was found to have a large left neck mass which was solid and nontender, measuring 8 × 10 cm. Cardiovascular, respiratory, and abdominal examination were noncontributory. Extensive diagnostic workup ruled out evidence of neurodegenerative disease, adrenal insufficiency, or peripheral neuropathy. A CT head/neck was subsequently performed, revealing a large left nodal mass with encapsulation of the left carotid artery.

Initially, he was supported with aggressive intravenous fluid administration and discontinuation of both tamsulosin and morphine. A surgical consultation was obtained and given the location of the left nodal mass, he was deemed not a surgical candidate and conservative management was recommended. Clinically, his orthostatic symptoms persisted, and a trial of salt tablet replacement was started with some improvement of symptoms, however, it was not until he was started on midodrine and fludrocortisone that his orthostatic symptoms resolved.

## Discussion

Orthostatic hypotension is defined as either an increase in HR of  $\geq 30$  bpm, a decrease in systolic BP  $\geq 20$  mmHg or a decrease in diastolic BP of  $\geq 10$  mmHg, within 3 min of standing from a sitting or supine position.<sup>1</sup> The prevalence of orthostatic hypotension increases with age, affecting 16% of people over 65 years old.<sup>2</sup> The most common etiologies include volume depletion,

autonomic and endocrine dysfunction, cardiovascular disease, medications (predominately antihypertensives, antiadrenergics, anticholinergics, and antidepressants), and alcohol.<sup>1</sup> Patients with documented orthostatic hypotension should undergo a thorough diagnostic workup including complete history and physical, medication review, routine bloodwork, ECG, 24-h urine sodium excretion, and autonomic function testing. Functional cardiac evaluation and imaging should be considered in the appropriate clinical context. In patients with a history of malignancy, carotid bulb dysfunction due to mass compression, or previous radiation remain important potential causes.<sup>3</sup>

Treatment of orthostatic hypotension requires a multisystem approach beginning with patient education on falls prevention, dietician evaluation, and a slow taper of offending medications, if necessary. If the patient does not have a history of cardiovascular disease, salt tabs can be trialed. In patients who fail conservative therapy, fludrocortisone, midodrine, droxidopa and pyridostigmine have been shown to be effective.<sup>4</sup> This case highlights a unique cause of orthostatic hypotension due to mechanical disruption of blood supply and autonomic innervation, and exemplifies the lack of compensatory tachycardia with autonomic dysregulation.

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