

Resistant hypertension in normotensive obese young male: case report

Abstract

Hypertension is prevalent medical disorder with major impact on future health of an adult, particularly, among diabetics and obese individuals. Newer technologies provide ease and accessibility for measuring blood pressure through many devices with variable accuracy. In this report, we show clearly how modern technology may cause harm if not used appropriately. Presentations of the medical case along with recommendations based on current guidelines are discussed.

Keywords: hypertension, medical disorder, normal blood pressure, case report, guidelines, antihypertensive medications, thrombo-embolic diseases

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Introduction

Hypertension is one of the reversible risk factors for multiple future medical catastrophes if left untreated. Stroke, myocardial infarction, as well as renal failure are clearly documented to result from uncontrolled hypertension.¹⁻⁷ It has been one of the most significantly reversible risk factors for thrombo-embolic diseases provided that patients remained with normal blood pressure readings by implementing low salt diet and antihypertensive medications.

The vast majority of antihypertensive medications are with considerable side effects, and most male hypertensive patients may suffer an erectile dysfunction as a side effect. Therefore, it is of paramount importance to appropriately manage hypertension promptly to minimize the side effects. Furthermore, resistant hypertension is a clinical medical problem that may require complete workup looking for secondary treatable causes of hypertension, predominantly, in young patients.

Case report

Thirty three year old male who presented to our clinic for evaluation of persistently multiple high blood pressure readings reaching 190/110. He has been struggling with overweight for several years; however, he never used appetite suppressants or considered other modalities for weight reduction. Review of systems revealed occasional headaches as well as neck and knee aches. He recently attended a healthcare workshop and purchased an automated wrist blood pressure device to measure his own blood pressure as a preventative strategy. Over 2 weeks prior to his presentation, he has measured his blood pressure daily at different times, with readings averaging around 180/110. He consulted his primary care physician who advised him for cardiology consult for further evaluation of resistant hypertension.

On examination, he is obviously obese, weighing 153 kilograms (337 pounds), his height is 1.81 meters (71.3 inches) with calculated body mass index BMI = 46.7 indicative of morbid obesity. Apart from obesity, the rest of clinical examination is unremarkable including funduscopic examination. Blood pressure measurements seated in the right arm using standard mercury sphygmomanometer is normal at 130/80, and 128/80 in the left arm, his heart rate is regular at 82/min.

The patient was instructed to bring his automated Bp device for reading comparison, and simultaneous readings were compared with the standard mercury sphygmomanometer. The results were

surprising as there is persistent 50mmHg higher systolic readings of the automated device compared to standard apparatus, and 30mmHg higher diastolic readings of the automated device. Consequently, the patient was advised either to titrate his readings by subtracting the difference in systolic as well as diastolic readings of the wrist Bp device, or to change the device to proper arm size automated device. Follow up of these patient revealed normal blood pressure readings as he opted to change the device to the recommended arm automated device.

Discussion

Proper measurement of blood pressure is an important step in the clinical examination of patients as per current guidelines; the cuff bladder should encircle 80 percent or more of the patient's arm circumference.⁸ Moreover, mercury sphygmomanometers still are the preferred device and should be used if available and properly maintained, although they are being removed from clinical practice for environmental reasons.

Work up for finding an etiology of secondary causes of hypertension may consume considerable resources, including laboratory, radiological, and other diagnostics that may not reveal the etiology. Furthermore, prescription of antihypertensive treatment should be initiated after correctly diagnosing hypertension using current guidelines in clinical practice. Despite the happy ending of this patient, nonetheless, he was referred for management of his obesity that may keep him busy for a while. The point here is to pay attention to newer digital devices that may require titration of readings compared to standard mercury sphygmomanometer.

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Conflicts of interest

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