

IT IS NOT ALWAYS "ESSENTIAL" - REGARDING A HYPERTENSIVE URGENCY

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Abstract

Hypertension is, in a minority of cases, secondary to an identifiable cause. In this context, the aetiology of the blood pressure elevation is essential since it may be treatable. We present a case of a young woman with hypertension secondary to fibromuscular dysplasia (FMD) of the renal artery in which the endovascular treatment was crucial for its management.

Keywords: Fibromuscular dysplasia; Secondary hypertension; Hypertension.

INTRODUCTION

In around 5-15% of the cases, a cause for secondary hypertension can be identified. Among these, the renovascular cause is present in around 1-10% of the cases. Atherosclerosis is the main cause of renovascular arterial hypertension, and fibromuscular dysplasia (FMD) is responsible for less than 10% of these cases.¹

A European Consensus classified FMD in two angiographic types: multifocal ("string-of-beads") that represents most of the cases (more than 80%) and unifocal (rarer, typically in individuals under 40 years old).² Therefore, one must consider this entity in the course of the etiological investigation of arterial hypertension, especially in young female patients.

CASE REPORT

A 53-year-old woman with a history of thrombocytopenia JAK2 positive and no chronic medication, presented to the

emergency department (ER) with an intense headache lasting for two days, with progressive worsening, a blood pressure (BP) of 220/130mmHg, and no other complains. The EKG was normal, brain computer scan (CT) ruled out major vascular events (including venous sinus thrombosis) and a summary laboratory panel showed a mild acute kidney injury (creatinine 1.2mg/dL, for a basal value of 0.6mg/dL in this patient) with no other disturbances (including negative troponin and normal natriuretic peptides). Dyslipidaemia, diabetes, proteinuria, changes in the thyroid function and in catecholamines levels were ruled out. Echocardiogram was normal (ruling out coarctation of the aorta). An hyperrenemic hyperaldosteronism was diagnosed (which is in line with the discoveries stated below). The doppler ultrasound showed an increase in systolic peak velocity greater than 2m/s in the intermediate portion of the left renal artery and a decrease in the resistance index in the distal territories with an increase in the systolic acceleration index which translates in a hemodynamically significant stenosis of this territory. Furthermore, the magnetic resonance (MRI)


Figure 1

Angiography showing stenosis of the left renal artery.


Figure 2

Angiography showing the left renal artery after balloon angioplasty.

angiography showed a critical stenosis (10mm long) in the middle third of the left renal artery.

Accordingly, after evaluation with vascular surgery the patient went under digital subtraction angiography that confirmed the diagnosis of fibromuscular dysplasia of the left renal artery and a percutaneous balloon angioplasty (Armada™ 35 percutaneous transluminal angioplasty catheter, 4x20mm) was performed with an immediate good angiographic result.

The immediate response was positive and the patient was able to be discharged with two anti-hypertensive drugs (ramipril 2.5mg and amlodipine 10mg). At 3 months follow-up, BP was controlled with 20mg of telmisartan and the renal ultrasound didn't show any signs of re-stenosis. These results were sustained over 3 years (time of follow-up until this article).

Given the diagnosis of FMD of the renal artery, other vascular beds were screened (such as the carotids) with doppler ultrasound and MRI angiography that excluded dysplasia of the carotid arteries.

DISCUSSION

Secondary hypertension means that there is an identifiable cause for the blood pressure rise, and the identification of the underlying condition is crucial because it might be treatable.³

In the presence of a caucasian female patient presenting with grade 3 hypertension, without cardiovascular risk factors (such as dyslipidaemia and diabetes) one must suspect of a secondary aetiology. Thus, in this case, the association of the absence of atherosclerotic disease in other territories and the imaging pattern (stenosis of the middle third of the renal artery, without reaching the ostium), renal artery stenosis is admitted in context of focal fibromuscular dysplasia, which is present in less than 10-20% of cases of FMD.⁴⁻⁵

The early identification of this entity is paramount since it allows endovascular treatment with resolution of the condition in a large majority of patients.⁶⁻⁹

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