RENOVASCULAR HYPERTENSION IN AN ADULT : A CASE REPORT

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ABSTRACT

Radionuclide renogram was performed on a hypertensive adult male which revealed renovascular hypertension. We report it as a rare case.

KEY WORDS Renogram, Renovascular hypertension.

INTRODUCTION

Hypertension is reported to affect from 7% to 20% of the adult population. An exact prevalence is unknown, mainly because of differences in the study populations and the diagnostic criteria. Among the rare secondary causes of hypertension renovascular disorder is the most frequent. The prevalence depends not only on the source of the study population but also on the definition of hypertension in that population and on its severity. The prevalence of renovascular hypertension in a hypertensive population with diastolic pressure between 90 and 104 mmHg is probably less than 1% whereas in a population with a diastolic pressure above 125 mmHg the prevalence is reported to about 30%. With such a low prevalence in the largest group of patients, screening of all hypertensive patients for renovascular hypertension with either scintigraphy, intravenous urography (IVU), or digital angiography is not advisable owing to the low number of true positives, the cost and the unacceptably high false-positive rate. Before the patient is referred for an imaging examination, some selection must take place. Patients with a diastolic pressure above 110 mmHg, young patients, those with a sudden rise in blood pressure independent of age and patients with a poor response to therapy should be examined further. The captopril-enalapril renogram appears to be the most cost-effective procedure for screening those patients.[1] We like to report a case of renovascular hypertension in an adult considering its rarity.

CASE REPORT

A retired army commander aged 69 years was referred by a cardiologist for isotope renogram. His past medical history includes hypertension for the last 18 years and diabetes mellitus for the last 12 years (controlled by diet) and renal asymmetry in a recent ultrasonography (Left kidney 5x7 cm, right kidney 6x9 cm). Drug history includes methyldopa (6x250 mg daily), carvedilol (6.25 mgx2 per day), losan (50 mg daily) and nifedipine (4x10 mg/day). Renogram using intravenous 99m Tc DTPA under a computerized gamma camera (Siemens microdelta PC upgraded) revealed normally functioning right kidney, but left kidney showed small arterial (vascular) phase, prolonged secretory (glomerular) phase and delayed clearance (excretion) phase (Figure 1) suggesting renovascular hypertension.

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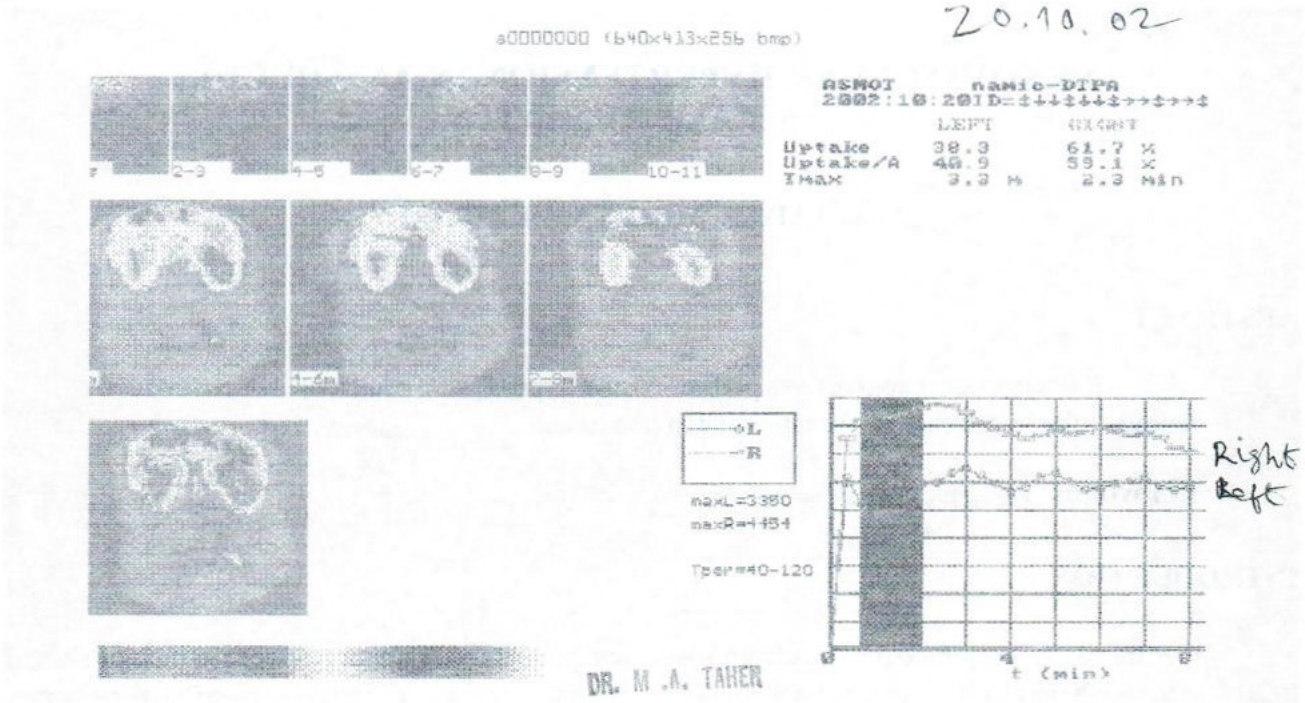

Fig. 1 Normal right kidney and ischemic left kidney suggesting renovascular hypertension.

DISCUSSION

In renovascular hypertension, one or both renal arteries are affected by a stenotic lesion that causes renal ischemia and subsequent stimulating of the renin-angiotensin system. The stenotic lesions are of 2 types-(a) fibromuscular hyperplasia, characterized by proliferation of the vascular media and is more commonly seen in young, otherwise healthy women, (b) atheromatous lesion affecting proximal renal artery, usually seen in older men who have evidence of widespread atherosclerotic disease.[2] Radionuclide renography is indicated in (a) patients under the age of 40, (b) those who have history, clinical examination or baseline investigation suggestive of renal pathology and (c) in older patients where difficulty in the control of hypertension or a sudden increase in severity may indicate a renal artery stenosis, IVU provides more information about urinary tract anatomy whereas radionuclide renogram gives a more direct estimate of renal hemodynamics. Measurement of plasma renin activity is a useful test in suspected renovascular hypertension but care is needed to ensure that samples are taken under proper basal conditions and are not affected by diuretic therapy and salt restriction.[3] Treatment of renovascular hypertension is surgical revascularization or angiotensin-converting enzyme inhibitors and/or other antihypertensive drugs.

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