

RENOVASCULAR ARTERIAL HYPERTENSION, ABOUT 4 CASES OF RENAL ARTERY STENOSIS, WITH LITERATURE REVIEW**M. Khalil^{*1}, S. Driouiche¹, A. Elkharrazi¹, I. Telouhi¹, F. Karim¹, M. Habboub¹, S. Arous¹, Gh.Benouna¹, A. Drighil¹, L. Azouzzi¹ and R. Habbal¹**¹Cardiology Department, Ibn Rochd University Hospital Center, Casablanca, Morocco.***Corresponding Author: M. Khalil**

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INTRODUCTION

Renovascular hypertension represents the most common cause of curable secondary hypertension in adults. It is defined by a permanent rise in blood pressure secondary to unilateral or bilateral stenosis of a renal artery.

It is improved after correction of this obstacle. The certain diagnosis is retrospective based on total or partial reversibility after revascularization. the causes are diverse, atheromatous stenosis, fibromuscular dysplasia and vasculitis.

MATERIAL AND METHODS

Descriptive analytical monocentric study of the clinical epidemiological aspects and the therapeutic and evolutionary profile of renovascular hypertension on stenosis of the renal arteries.

Over a period of 1 year from the end of October 2020 until October 2021.

Inclusion criteria: Patients whose other origins of secondary hypertension have been ruled out. Patients hospitalized and followed in the nephrology department at Casablanca Exclusion criteria: patients not followed at the Casablanca University Hospital, or patients whose hypertension is essential or not secondary.

RESULT

We report in this work the observations of 4 cases with resistant hypertension and whose secondary renovascular origin is proven. the average age of our patients was 55 years with extremes (40; 65), the sex ratio is 3., bipolar atherosclerosis with reduced visual acuity was found in one patient (25%) at the time of the anamnesis, the 4 patients had high blood pressure figures at the time of the consultation under dual therapy, i.e. (100%), two diabetic patients on insulin and whose seniority of diabetes exceeds 5 years, i.e. (50%), there was no other extrarenal symptoms described, the clinical examination found an asymmetry of the radial pulses with the presence of a systolic murmur at the level of the aortic focus in 2 patients, i.e. (50%) a difference in arterial pressure between the arms > 20mmHg, signs of peripheral neuropathies were described in a single patient at the

level of the lower limbs accentuated at the level of the left lower limb. On the biological level, a positive proteinuria > 1g/24H had been found in the two diabetic patients. Microscopic hematuria >10 elements/mm³ in the other two patients. Microcytic hypochromic anemia, accelerated sedimentation rate, negative CRP in all of the patients. the average plasma creatinine is 11.5 mg/l for extremes (9;19) i.e. an average GFR estimated at 70ml/min/1.73m² in MDRD. Faced with the character of resistant hypertension, history of bipolar atherosclerosis, pulse asymmetry, presence of dysesthesia or paresthesia in the lower limbs: the secondary nature of hypertension has been mentioned, Renal ultrasound and Doppler ultrasound of the patients revealed an asymmetry in size with a high resistance index at the level of the hypotrophic kidney in all the patients 100% testifying to the character of renal hypoperfusion. And the renal asymmetry motivated CT angiography aortorenal which had shown images of stenosis of the renal artery, with post stenotic dilatations evoking an aortic aneurysm facing the celiac trunk in three patients (Figure 1). The degree of arterial stenosis in our patients ranging from 7% to over 50%. and renal asymmetry prompted aortorenal CT angiography, which showed images of renal artery stenosis, with post-stenotic dilatations evoking an aortic aneurysm next to the celiac trunk in three patients (Figure 1). The degree of arterial stenosis in our patients ranging from 7% to over 50%. and renal asymmetry prompted aortorenal CT angiography, which showed images of renal artery stenosis, with post-stenotic dilatations evoking an aortic aneurysm next to the celiac trunk in three patients (Figure 1). The degree of arterial stenosis in our patients ranging from 7% to over 50%.

Associated with this image of stenosis with an ischemic kidney, there is a disparity in caliber and an irregular appearance of the abdominal aorta under the kidney (Arrow 2, Figure 1) and supra kidney leading to suspicion of vasculitis of the large vessels, in particular a Takayasu. The diagnosis is all the more suspected when there is clinically an asymmetry of blood pressure and pulse in both arms.

Moreover, in the face of bipolar aphthosis and vascular involvement that could also suggest Behcet's disease, the

search for the HLAB51 antigen carried out came back negative and an ophthalmological examination eliminated the presence of ocular involvement such as anterior uveitis. On the other hand, a fundus with a fluorescein angiography concluded in a congenital amblyopia in a patient. The immunological assessment was negative. syphilitic serology came back positive in one patient (25%), hepatitis and toxoplasma serology are negative.

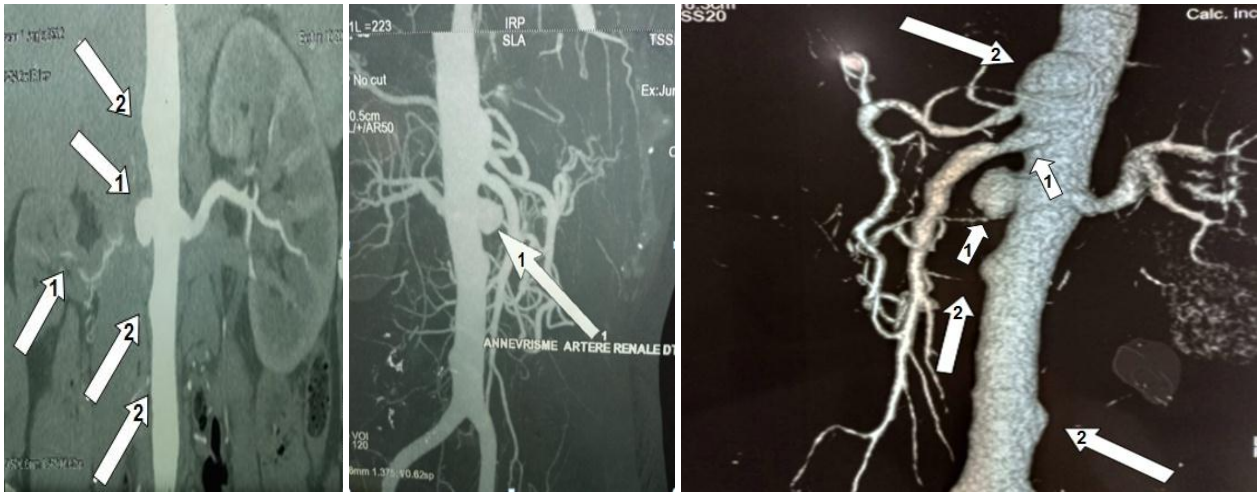


Figure 1: Abdominal CT angiography.

This CT angiography shows the presence of an aneurysmal anterior aortic curvature, facing the celiac trunk which presents a very tight postostial stenosis. Partially thrombosed aneurysm at the origin of the right renal artery which is very small and serpiginous downstream of the latter. As part of the lesion assessment, a patient had benefited from CT angiography of the supra aortic trunks and who had shown a tight stenosis of the left vertebral artery, in its V2 and V3 portions with a reduction in caliber of more than 50% (Figure 2).

The diagnosis retained is that of a stenosis on vasculitis, in particular vasculitis of large vessels (disease of Takayasu) (MT). Therapeutically, corticosteroid therapy at a dose of 1mg/kg/d with progressive reduction over six months, associated or not with biological treatment, anti-IL2 and IL6 agents, or revascularization, two of our patients benefited from revascularization with stabilization of blood pressure figures the other two remaining patients were put on biological treatment.

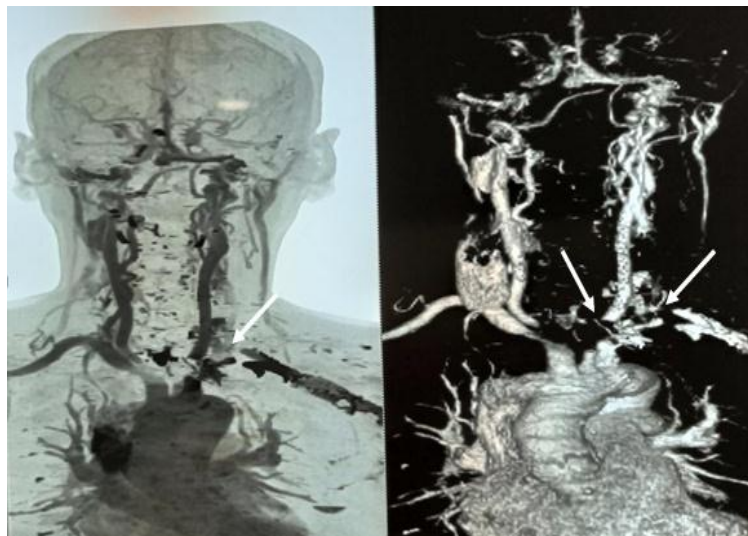


Figure 2: CT angiography of the supra aortic trunks of the patient.

This CT angiography shows the presence of a tight stenosis of the left vertebral artery, in its V2 and V3 portions with a reduction in caliber of more than 50%

DISCUSSION

Vasculitides include a set of conditions characterized by inflammatory involvement of arterial, capillary and venous blood vessels of various calibers. They are classified according to the Chapel Hill nomenclature into non-necrotizing vasculitis of large vessels (Takayasu and Horton), vasculitis of medium-caliber arteries (Pan and Kawasaki), small-vessel vasculitis. Diagnosis for large-vessel vasculitis is both clinical (decrease of at least one brachial pulse, difference in systolic blood pressure > 10 mm Hg in both arms, presence of murmur, claudication of the limbs) and radiological (attack of the great vessels at different supra-aortic and abdominal levels, or histological in the case of Horton's disease). They lead to an alteration of the vascular wall including the renal vascularization. The associated renal hypoperfusion is responsible for activation of the renin-angiotensin-aldosterone system with secondary hyperaldosteronism, responsible for arterial hypertension. CT angiography helps establish the diagnosis. Treatment depends on the etiology in question and is based on corticosteroid therapy, whether or not associated with immunosuppressants (cyclosporin, mycophenolatemofetil, azathioprine, methotrexate) or biotherapy (tocilizumab anti IL6, anti-TNF: tumor necrosis factor) and/or revascularization surgery, depending on the degree of stenosis, according to the STAR, ASTRAL, CORAL study.

CONCLUSION

Renal artery stenosis is a rare renal impairment with several etiologies involved, among them TM, the diagnosis of which is based on a set of clinical and radiological criteria. CT angiography, angio-MRI and 18F-FDG PET allow mapping of stenoses and aneurysms. Treatment is based on corticosteroid therapy and immunosuppression, however the best treatment remains revascularization.

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