

COMPLEX RENAL ARTERY ANEURYSM: A RARE CAUSE OF HYPERTENSION IN YOUNG SUBJECTS, ABOUT 2 CASES

M. Khalil^{*1}, M. Noël¹, A. Fadoul-Tahir¹, M. Habboub¹, S. Arous¹, Gh. Benouna¹, A. Drighil¹, L. Azouzzi¹, R. Habbal¹, A. Tmiri^{*2}, Y. Ouzidane², A. Moataz², M. Dakir², A. Debbagh² and R. Aboutaieb²

¹Cardiology Department, Ibn Rochd University Hospital Center, Casablanca, Morocco.

²Urology Department, Ibn Rochd University Hospital Center, Casablanca, Morocco.

*Corresponding Author: Dr. M. Khalil¹ and Dr. A. Tmiri²

¹Cardiology Department, Ibn Rochd University Hospital Center, Casablanca, Morocco.

²Urology Department, Ibn Rochd University Hospital Center, Casablanca, Morocco.

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SUMMARY

Renal artery aneurysms are a rare but serious pathology that can cause complications and be life-threatening for patients. It can be asymptomatic in certain situations whereas they can be responsible for arterial hypertension in young subjects with all its complications. We report two clinical cases of young patients who presented with arterial hypertension secondary to a renal artery aneurysm.

INTRODUCTION

Renal artery aneurysms (RAA) are rare with variable symptomatology. Many therapeutic choices are possible, but there is currently no consensus regarding their respective indications. Untreated RAA can be responsible for serious complications which can in certain situations be life-threatening (arterial hypertension, dissection, rupture of the renal artery, renal insufficiency).

The therapeutic indication was to pose in front of the size greater than 2 cm, renovascular hypertension, dissection, lumbar pain, hematuria or distal embolism and also in women of childbearing age.

Many advances have been made in vascular imaging which have made it possible to make the diagnosis and guide the therapeutic choice thanks to vascular opacification or angiography, endovascular imaging and the possibilities of reconstruction.

Therapeutic options include withholding and monitoring, endovascular therapy, and open surgery.

In selected patients, excellent long-term results have been reported with surgical treatment.^[1,2,3,4]

We report two clinical cases of hypertension secondary to RAA.

OBSERVATIONS**Case 1**

A 32-year-old patient, with no particular pathological history, who presented with right low back pain for 3

months associated with headaches and dizziness, without other accompanying signs, all evolving in a context of apyrexia and conservation of general condition.

And in whom the clinical examination notes a conscious patient, hypertensive at 150/80 mmhg, with the presence of right lumbar tenderness, the rest of the clinical examination is unremarkable.

A renal Doppler ultrasound was performed showing an aneurysm of the right renal artery measuring 25mm from the major axis, with a well-differentiated kidney without repercussions with a good cortical index.

The patient was put on medical treatment (Amlodipine) and monitoring of these blood pressure figures, in case of failure of medical treatment, surgery will be performed.

Case 2

A 23-year-old patient, followed for neurofibromatosis type 1, her history of the disease goes back 6 years with the installation of atrocious headaches for which the patient consulted a general practitioner who objectified the presence of severe hypertension (210/ 120mmhg) then sent urgently to a cardiologist, the patient was put on a calcium channel blocker (40mg/d in two doses) and on a thiazide diuretic (25mg/d) with persistence of the tension imbalance for 3 years, an etiological assessment was carried out showing on CT angiography of the renal arteries an aneurysm of the left renal artery measuring 27*18mm with pre-occlusive stenosis just upstream and collateral circulation in the left lumbar paravertebral (Figure 1).

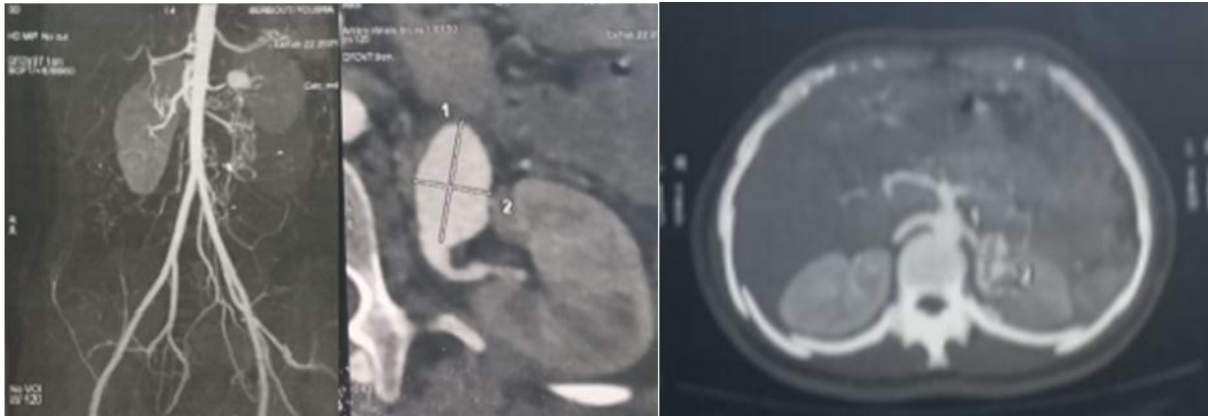


Figure 1: CT angiography of the renal arteries objectifying an aneurysm of the left renal artery.

The patient underwent a simple left nephrectomy following her unbalanced severe arterial hypertension (Figure 2).



Figure 2: Simple left nephrectomy surgical specimen.

DISCUSSION

A rare but serious pathology, RAA has benefited from advances in radiology in diagnostic and therapeutic management. In the literature, their incidence varies from 0.1% (autopsy) to 1.3% (renal angiography).

This low incidence makes it difficult to establish a consensus on the therapeutic indications of RAA and the recommendations as to the need for an intervention still have little scientific support. Surgical treatment is especially indicated in the event of complications proposed in the event of rupture, dissection, size > 2 cm, renovascular hypertension, symptoms such as lumbar pain or haematuria, distal embolisms, etc. However, the management is difficult, especially in cases of RAA in women of childbearing age, the natural history of asymptomatic aneurysms while the results of treatment are little known.^[1,2,3,4,5]

The symptomatology is varied. Hematuria is a frequent mode of revelation by fistulization in the excretory cavities, as well as arterial hypertension; the latter results from the iterative distal ischemia by haemodiversion^[6], arterial hypertension was noted in our two patients, on the other hand hematuria was absent in our patients.

Color Doppler ultrasound allows real-time identification and study of vessels. Via the postero-lateral approach, this examination allows good visualization of the intra-renal arteries and veins. It allows the highlighting of a round transonic image of a vascular nature with an intra-aneurysmal swirling flow clearly visible in color and pulsed mode. It is operator dependent and does not allow the acquisition of morphological images.^[6] A-Doppler ultrasound enabled the diagnosis of right renal artery aneurysm in the first patient.

CT angiography shows a saccular or fusiform formation becoming opacified in the arterial phase; the sequences of images in early and late times allow to have a sensitivity and a specificity of 100% and a knowledge of the exact nature of the renal malformation, its size, and its relation with the excretory cavities.^[7] The diagnosis of left renal artery aneurysm was confirmed in the second case following CT angiography.

Most authors propose surveillance by Doppler ultrasound for small aneurysms (1.5-2cm), calcified aneurysms and asymptomatic aneurysms in normotensive patients.

In selected patients, excellent long-term results have been reported with surgical treatment. Surgical methods increasingly consist of restorative interventions, which can be performed in-situ or ex-situ. The continuous improvement of endovascular techniques during the last two decades has made it possible to develop new therapeutic options for RAA. However, the current data in the literature need to be confirmed in the long term. Endovascular therapy with embolization using microcoils (systems originally designed for interventional neuroradiology) is considered a feasible alternative for the treatment of renal artery saccular aneurysms, which can be selectively excluded without compromising the blood supply to many segments of the

renal parenchyma. The indications for renal auto-transplantation (RAT) are limited: extracorporeal reconstruction of complex renal pedicle aneurysms, extensive ureteral lesion and conservative surgery for renal cancer in a patient with a single kidney. Many authors agree that RAT is effective in treating complex renal artery aneurysms with satisfactory results. Laparoscopic nephrectomy is increasingly used. Extensive ureteral injury and conservative surgery for kidney cancer in a patient with a single kidney.^[8]

In the first case medical treatment was considered with monitoring of blood pressure figures, the second patient benefited from a simple left nephrectomy following her severe arterial hypertension resistant to medical treatment.

CONCLUSION

Renal artery aneurysms are rare vascular lesions. Its incidence is 0.1% in the general population and is usually asymptomatic.

Current diagnostic methods, such as echo-doppler supported by color and spectral analysis, helical CT with spatial reconstructions and digital angiography, have enabled the discovery of asymptomatic and especially small aneurysms, thus posing a problem of therapeutic conduct.

However, surgery remains the reference treatment, indisputable in the event of complications for any location. It is the treatment of choice for renal artery aneurysms.

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