CASE REPORT INTERNATIONAL JOURNAL OF PURE MEDICAL RESEARCH

Cardiology

KEYWORDS: secondary hypertension ; Conn's adenoma ; primaryhyperaldosteronism ; adrenal glands ; surgery

CONN'S ADENOMA A RARE CAUSE OF ARTERIAL HYPERTENSION ABOUT SIX CASES

Volume-2, Issue-3, March - 2017

Dr.Lagziri Alae Eddine* Department of Cardiology Military Hospital of Meknes*Corresponding Author alae.lagziri@gmail.com

H.Faliouni Department of Cardiology Military Hospital of Meknes

Ezzouak A. El Younassi Epartment Of Cardiology Military Hospital Of Meknes

Article History
Received: 15.12.2016
Accepted: 17.02.2017
Published: 10.03.2017

ABSTRACT:

The aldosterone-producing adenoma (aldosteronoma) is the most important cause of hyperaldosteronism and represents one of the few curable causes of secondary arterial hypertension. The patients may be asymptomatic or oligo symptomatic with symptoms resulting from hypertension itself or from the complications generated by hypokalemia (polyuria, muscle cramps, excessive muscle weakness, paresthesia's, tetany, and even muscle paralysis). The aldosterone-producing adenoma is characterized by arterial hypertension, hypokalemia, excessive urinary excretion of potassium, and metabolic alkalosis.

Conn's adenoma, a tumor in the cortex of the adrenal gland that results in an overproduction of aldosterone. This hormone regulates the body's sodium and water retention or loss. "When the aldosterone levels rise too high, the body retains too much sodium, which in turn causes hypertension," Conn's adenoma can be surgically removed. "For many patients this means their hypertension will be cured. However, the necessary surgical procedure – known as adrenalectomy – is seldom performed, The expert says that Conn's syndrome is only rarely recognized as root cause of hypertension.. Our study's aim was to highlight this still unrecognized pathology ,analyses it's distinctive epidemiological features and detail it's diagnostic and therapeutic management

Materials and methods :

A retrospective study of six cases of Hypertension
Secondary to a Conn's adenoma, conducted in the department of cardiology, Moulay ismail Hospital Meknes, over the period between January 2002 and December 2015.

Results :

Our study included 4 women and 2 men. The average old of our Patients was 44 years (ranging from 37 to 51 years old). They were all suffering from severe hypertension at the time of the diagnosis, with blood pressure between 180 and 210 mmHg for systolic values, and between 100 and 115 for diastolic values. 50% (03 cases) were asymptomatic, while the other 50% presented clinical sign such as headache, palpitations, tinnitus and asthenia.

The majority of our patients 83% (05 cases) had Hypokalemia while 17% (one case) had normal serum potassium levels.

Primary hyperaldosteronism was mentioned and confirmed with a high Aldosterone to renin ratio in all our patients. The values ranged from 27,6 to 59 (mean of 40,78). Computed tomography has found a left adrenal mass in 05 cases and two bilateral adrenal masses in one case. Their diameter ranged from 10/10mm to 34/20mm (mean of 22,14/17,28) An iv saline infusion test was performed on the patient with two bilateral The mass to differentiate between Conn's adenoma and bilateral adrenal hyperplasia. The aldosterone secretion was not stopped by the infusion which was in favor of a bilateral Conn's adenoma.

All patients received surgical treatment. Anatomopathological results concluded to a Conn's adenoma in 05 cases, and a bilateral Conn's adenoma in one.

Normalization of blood pressure was obtained in 83% cases (05 patients) While the remaining case reported an improvement in blood pressure values without complete normalization. Hypokalemia was corrected in 100% cases, with a follow up ranging from one year to seven.

Discussion :

Arterial hypertensions (HTA) secondary, defined by their particular etiology, correspond to less than10% of the HTA The primary hyperaldosteronism (HAP) is the most frequent form of the HTA secondary . The two forms more communes the bilateral hyperplasia of the adrenal adenoma (HBS) and the adenoma of CONN (AC). [1] Primary aldosteronism (PA), also known as Conn's syndrome, is a frequent cause of secondary hypertension. If PA is due to a documented unilateral adrenal adenoma, adrenalectomy is the treatment of choice (10)The distinction between the two is of big importance,because in the case of AC, the treatment is surgical . In the case of the HBS, the treatment is medical.

EPIDEMIOLOGY :

SEX :

According to several studies, the secondary HTA with a AC is more frequent at patients of female sex. The women twice are reached than the men. [2]

The results of our study present a prevalence of the female sex among the patients with a sex ratiowoman/hommes=2. What agrees withles results of the literature

OLD :

AC is generally diagnosed at the fourth or fifth decade. Averageage at the time of the diagnosis of theHAP calculated between 9 broad series varied between 45 and 55ans, with a total average of age to 50ans. [3] these values approach those found in our study. Our patients had an average old has 44ans, with like extremes (37-51ans)

RACE :

The primary hyperaldosteronism is a cause too often underestimated at

the subject of race black (and ignored includingin the European populations) of arterial hypertension. [4] It is significantly more frequent at the subjects of black Race than at the subjects of white race (12% vs 7%) [5] In our series the subjects of black race accounted for 33% of the patients.

DIAGNOSIS :

PRIVATE CLINIC

Clinical characteristics of the HTA of the adenoma of CONN are: A HTA which is resistant: with persistence of figures tensional > 140 and/or 90 mmHg at a patient observing, subjected to one coherent combination therapy comprising diuretics , without antagonistic interferences of extra origin and after elimination of an effect "white blouse" by car measures tensional ou ambulatory. A HTA rank 3 with figures tensional with180/110 mmHg or more. A severe HTA of brutal appearance. [6]

In our work, the severe HTA was constantamong all our patients, thus joining the results of the literature.

Generally, the secondary HTA with a AC is asymptomatic on the plan private clinic, being able to be accompanied sometimes by clinical signs of head pain. [7] At the patients which presents one hypokalemia, of the clinical signs in relation to the low potassium rates can see it self with type of asthenia, muscularcramps, paraesthesias, palpitations,pseudoparalysies, and polyurie. The results of our study are in accordance with the literature. Half of our patients clinical signs of HTA and hypokalemia presented.

PARACLINIQUE :

BIOLOGY

The origin s of the HTA should be suspected in front of any patient who presents a hypokalemia. At the Sixties, and since Jerome CONN has described the HAP, it was considered that any patient who presented a HTA within a AC framework was hypokalemic. [8] However, this report is present only in the severe cases. A normal Kalemia should not in no case to exclude the diagnosis. With opposite, a study carried out in 2015 by Iachimescu et al. showed that 60% of thecases of HAP have a normal kaliemy. [9] In our study, a percentage of 16.66% of thepatients presented one normal kaliemy.

REPORT ALDOSTERONE RENIN

The data of the 20 last years literature show that the report aldosterone/renin (RAR) is the most significant parameter (68-94%) with one variability less important than other measurements [10] In our series, all our patients presented a RAR raised, not very variable with the postural change, and an excellent reproducibility (100%); Our results are similar to those of the study de Rossi and al.

TEST OF BRAKING

In the presence of a RAR significantly raised, it should be checked that the production of aldosterone is not stopped: the usual standard gold for the diagnosis HAP is the absence of freination by the fludrocortisone or possibly the containing soda load [11] In our study, the test of braking was carried only one patient who had two bilateral Conn's adenoma.

IMAGERY

Ultrasound are of no help since hormoneproducing adrenal tumors, such as adenoma in Conn's syndrome, are generally too small to be detectable by U/S (Hofer 1999). According to the "Clinical Practice Guidelines" of the Endocrine Society, it is recommended that all patients with PA undergo an adrenal CT scan as the initial study in subtype testing and to exclude large masses that may represent adrenocortical carcinoma (Funder et al. 2008). Most aldosterone-producing adenomas are less than 20 mm in diameter (Letavernier et al. 2008; White et al. 2008). In a survey on adrenal incidentalomas in Italy, done by Mantero et al. (2000), they concluded that the majority of cortical adenomas were nonfunctioning 69%, whereas 25% secreted cortisol in slight excess, and only 6% secreted aldosterone. Density assessment following i.v. contrast administration is necessary in such cases. Moderate enhancement, followed by a rapid contrast agent washout from the tumor occurs in adenomas (Papierska et al. 2013). An absolute contrast washout of >60% and a relative contrast washout of >40% characterize an adenoma with a sensitivity and specificity of 98% and 92% respectively (Dunnick and Korobkin 2002; Szolar et al. 2005). APA may be visualized as small hypodense nodules, usually (12)

In front of the suspicion of a HTA returning within the framework of an adenoma of CONN,

The main examination is the TDM of thesuprarenals. Sensitivity of the scanner for diagnosis of the adenoma is estimated at 80%[12] , its specificity with 58% and its positive predictive value with . The diagnostic performances of the MRI are comparable with those of to scan according to several studies. [13]

In our series, all our patients had profited from a TDM, only one patient (16.66%) profited from a MRIassociated. At 83.34% of our patients, TDM was sufficient to detect an adenoma.

TREATMENT :

The treatment for hyperaldosteronism depends on the underlying cause. In patients with a single benign tumor (adenoma), surgical removal (adrenalectomy) is curative. This operation is usually performed laparoscopically, through several very small incisions. (See Adrenal Surgery) After successful adrenalectomy, approximately 95% of patients notice significant improvement in their hypertension. Of this 95%, one third are cured of high blood pressure and the rest are on fewer medications or lower dosages. For patients with bilateral hyperplasia, the best treatment is a medication called an aldosterone-antagonist (spironolactone, eplerenone) which blocks the effect of aldosterone. In addition, patients are maintained on a low salt diet.

Without proper treatment, patients with hyperaldosteronism often suffer from poorly controlled high blood pressure and are at increased risk for heart attacks, heart failure, strokes, kidney failure, and early death. However, with appropriate treatment, this disease is treatable and has an excellent prognosis. Patients with difficult to control or long-standing hypertension should be screened for primary hyperaldosteronism.(15)

The surgery is the ideal therapeutic option. A unilateral adrenalectomy by laparoscopic way (called also coelioscopic) is the technique of choice to treat a HTA with adenoma of CONN. [14] Also is it preferable with the enucleation of the nodule when the TDM shows an evocative image of AC. [15]

However, the case of the adenoma of bilateral of CONN, it is recommended in literature to carry out if possible a adrenalectomy of dimensioned .

Among inoperable patients or who refuse the surgery, a treatment medical containing antagonists of the receivers of the aldosterone can be used like therapeutic alternative. The principal molecules used are aldactone and spironolactone . [16]

In our series, all our patients did not present of against indications operational, and accepted all the surgery after being put at the current of the potentials risks and benefit.

CONCLUSION :

At the end of this work concerning the HTA returning within the framework of the adenoma of CONN in connection with 06 cases treated with the Military hospital Moulay Ismail in Meknès, it appears important to insist on the methods of assumption of responsibility for this pathology, which must be multidisciplinary including cardiologists, radiologists, surgeons and anatomopathologists.

Tables and figures

	N	Minimum	Maximum	Moyenne
Age	6	37	51	44

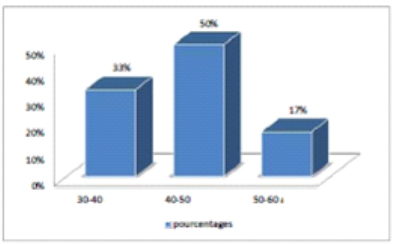


Figure 3 :Average for age

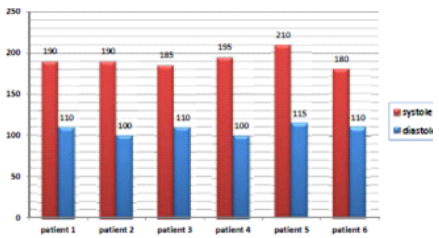


Figure4 :profil tensionnel for our patients

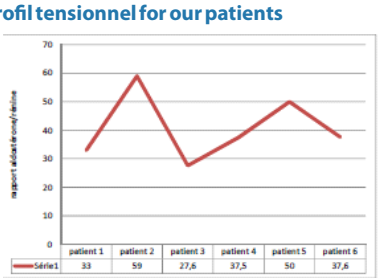
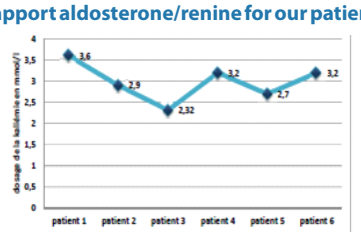


Figure 5 :Rapport aldosterone/renine for our patients



Profil of kalimie for our patients

REFERENCES

1. Conn's adenoma: surgical treatment of hypertension - Adrenal glands experts discuss diagnostic imagin Mainz (Germany), June 2018
2. Aglony M, Martinez-Aguayo A, Carvajal CA, Campino C, Garcia H, Bancalari R, Bolte L, Avalos C, Loureiro C, Trejo P, et al. 2011 Frequency of Familial Hyperaldosteronism Type 1 in a Hypertensive Pediatric Population Clinical and Biochemical Presentation. Hypertension 57 1117-U1169.
3. Obara T, Ito Y, Okamoto T. Risk factors associated with postoperative persistent hypertension in patients with primary aldosteronism. Surgery. 1992;112:987–
4. Gombet T, Steichen O, Plouin PF. Hypertensive disease in subjects born in sub-Saharan Africa or in Europe referred to a hypertension unit: a cross-sectional study. Bull Acad Natl Med 2007 Nov;191(8):1745-54; discussion 1754-5
5. Lim PO, Rodgers P, Cardale K, Watson AD, MacDonald TM. ;Potentially high prevalence of primary aldosteronism in a primary care population. Lancet 1999 ; 353 : 40.
6. Mancia G, De Backer G, Dominiczak A. 2007 ESH-ESC Practice Guidelines for the Management of Arterial Hypertension: ESH-ESC Task Force on the Management of Arterial Hypertension. J Hypertens. 2007;25:1751–62.
7. Mulatero P, Stowasser M, Loh K et al. Increased diagnosis of primary aldosteronism including surgically correctable forms in centers from five continents.
8. Caroline Schirpenbach, Martin Reincke;Klinikum der Ludwig-Maximilians-Universita¨t, Medizinische Klinik Innenstadt, Ziemssenstr. 1,80336 Mu¨nchen, Germany
9. Iachimescu A, Hamrahian A. Diseases of the adrenal gland. Center for Continuing Education. Available at:
10 in Journal of Renin-Angiotensin-Aldosterone System 18(4):1-4 · October 2017
11. Young W, Stanson A, Thompson G et al. Role for adrenal venous sampling in primary aldosteronism. Surgery 2004; 136(6): 1227e1235. C. Schirpenbach and M. Reincke
12. A short review of primary aldosteronism in a question and answer fashion ;2018
13. Novitsky YW, Kercher KW, Rosen MJ, Cobb WS, Jyothinagaram S, Heniford BT. Clinical outcomes of laparoscopic adrenalectomy for lateralizing nodular hyperplasia. Surgery. 2005;138:1009–16. doi: 10.1016/j.surg.2005.09.027
14. Ishidoya S, Ito A, Sakai K. Laparoscopic partial versus total adrenalectomy for aldosterone producing adenoma. J Urol. 2005;174:40–3. doi:
15. columbiasurgery.org/conditions-and-treatments/primary-hyperaldosteronism-conns-syndrome 2018
16. Walz MK. [Adrenal tumors] Chirurg. 2008;79: