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CASE REPORT

INCIDENTAL AORTIC AND CORONARY ARTERY ANOMALIES DURING INVESTIGATIONS FOR AN ADRENAL TUMOUR

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Summary

Patients with high cardio-metabolic risk may associate an adrenal incidentaloma discovered during a routine ultrasound procedure. Many performing investigations as computed tomography bring more data, for instance anomalies of abdominal vessels as calcification or dilatations. We introduce such a case. A 72-year old male had arterial hypertension, type 2 diabetes mellitus, dyslipidemia, stable ischemic angina. High blood pressure was partially responsive to medication so an endocrine assessment was done. An abdominal ultrasound discovered a 2.4 centimetre (cm) tumour at the level of right adrenal. The serum potassium was mildly elevated as well as uric acid with normal creatinine. All the baseline and dynamic adrenal tests pointed a non-secretor profile while the computed tomography showed similar adrenal aspects as did the ultrasound (the tumour was of 2.15 by 2.92 by 1.95 cm). Moreover, the other findings were an aortic aneurysm of 2.96 cm in diameter having a length of 5.05 up to 7.05 cm (and multiple calcifications), a left coronary artery calcification of 2.52 cm. Doppler ultrasound also confirmed a wall thrombus at the level of aortic aneurysm. Because of the vessels anomalies, further investigations were recommended as angio-magnetic resonance imagery and angiography which the patient delayed to perform. Multidisciplinary approach offers a better perspective of both metabolic and cardiovascular conditions and adrenal masses as well as a potential pathogenic link between these.
Key words: adrenal tumour, high blood pressure, aortic calcification

Résumé

Anomalies incidentelles des artères coronaire et aortique pendant les investigations pour une tumeur surrénale

Les patients présentant un risque élevé cardio-métabolique peuvent associer un incidentalome surrénal découvert au cours d'une procédure d'échographie de routine. Plus de recherches performantes comme la tomodensitométrie apportent plus de données, par exemple des anomalies de vaisseaux abdominaux comme la calcification ou les dilatations. Nous introduisons un tel cas. Un homme de 72 ans avait de l'hypertension artérielle, diabète de type 2, la dyslipidémie, l'angine ischémique stable. L'hypertension artérielle n'a pas été très sensible aux médicaments alors une évaluation du système endocrinien a été faite. Une échographie abdominale a découvert une tumeur de 2,4 cm au niveau de la surrénale droite. Le potassium sérique a été légèrement élevé, ainsi que l'acide urique, mais la créatinine était normale. Toute la ligne de base et les tests dynamiques des surrénales ont signalé un profil non-sécréteur tandis que la tomographie a montré les mêmes résultats surrénaux comme l'échographie (la tumeur était de 2,15 par 2,92 cm par 1,95). Par ailleurs, les autres résultats étaient un anévrysme aortique de 2,96 cm de diamètre ayant une longueur de 5,05 à 7,05 cm (et de multiples calcifications), une calcification de l'artère coronaire gauche de 2,52 cm. L'échographie Doppler a également confirmé un thrombus pariétal au niveau de l'anévrisme de l'aorte. En raison des anomalies de vaisseaux d'autres investigations ont été recommandées comme l'imagerie et l'angiographie dont le patient a tardé à effectuer la résonance angio-magnétique. L'approche multidisciplinaire offre une meilleure perspective des deux conditions métabolique et cardiovasculaire et des masses surrénales ainsi qu'un lien pathogène potentiel entre ceux-ci.
Mots clefs: tumeur surrénale, hypertension, calcification aortique

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Introduction

High blood pressure or multiple cardio-metabolic risk factors need a routine abdominal scan, for instance, using an ultrasound to evaluate the kidney status as well to exclude an adrenal tumour as a potential cause for the cardiovascular damage as seen in pheocromocytoma or Cushing's disease (either clinical or subclinical). (1,2) Sometimes, an adrenal incidentaloma is discovered in patients previously diagnosed with different types of cancer requiring a complete imagery check-up. (3,4) Moreover, if the scans for a prior adrenal incidentaloma are detailed, some other anomalies may be discovered, for instance, calcifications of large abdominal vessels, and this is the target in this present case.

Case presentation

The case report introduces the adrenal profile and the computed tomography (CT) scans (with intravenous contrast administration) findings. The informed consent was signed by the patient in 2016.

This is the case of a 72-year old male who was a smoker for a few years so he has been evaluated in different centres of cardiology for metabolic syndrome including arterial hypertension, type 2 diabetes mellitus under oral specific medication, dyslipidemia, stable ischemic angina. High blood pressure was partially responsive despite several regimes of drugs tried and the patient was compliant, thus a second opinion of an endocrinologist was asked. He associated episodes of arterial hypertension of maximum systolic level of 180 mm Hg, without an obvious trigger. An abdominal ultrasound was done, leading to the discovery of a 2.4 centimetre (cm) tumour at the level of right adrenal. The serum potassium was as high as 5.5 mmol/L, with normal levels between 3.5 and 5.1 mmol/L while serum uric acid of 9 mg/dL was above the upper normal limits of 2.6 between 7.2 mg/dL. The renal function was normal. Thyroid gland displayed normal tests. Morning plasma cortisol (at 8 a.m.) after screening dexamethasone suppression test with 2 milligrams for 2 days showed normal cortical function based on the level of 1.22 μUI/mL (normal response is less than 1.8 μUI/mL). The circulating chromogranin A as a neuroendocrine marker was of 50 ng/mL, with normal ranges between 20 and 125 ng/mL. Adrenal medulla had a normal profile: plasma metanephrines of 15.22 pg/mL with normal between 10 and 90 pg/mL, plasma normetaneprines of 36.8 pg/mL, which have normal ranges between 15 and 180 pg/mL. The aldosterone/rennin ratio was normal, too. Based on these aspects, the non-secretor adrenal profile was confirmed without any relationship to increased potassium levels. Computed tomography showed the same adrenal findings as did the ultrasound (the tumour was of 2.15 by 2.92 by 1.95 cm). Moreover, the other findings were a right kidney cyst of 1.8 cm and an aortic aneurysm of 2.96 cm in diameter having a length of 5.05 up to 7.05 cm (and multiple calcifications), a left coronary artery calcification of 2.52 cm. (fig. 1) Doppler ultrasound also confirmed a wall thrombus at the level of aortic aneurysm. Because of the vessels anomalies, further investigations were recommended as angio-magnetic resonance imagery and angiography which the patient delayed to perform. Close follow-up is recommended.

Discussion

The adrenal tumours causing a vascular damage are Conn's syndrome (or primary hyperaldosteronism), Cushing's syndrome (or persistent hypercortisolemia) and pheocromocytoma. (5,6,7) The first two are more frequent. On the other hand, an adrenal incidentaloma may be correlated with some metabolic features based on some studies, especially if subclinical hypercortisolemia is displayed. (8,9,10) In this particular case, despite the metabolic syndrome and associated management, the patient was discovered with an adrenal tumour, more likely non-related to prior cardiovascular profile but the endocrine loop allowed a more severe diagnosis like the abdominal artery and coronary artery anomalies. However, since no endocrine condition was confirmed in this mentioned case, close self-monitoring of the blood pressure (with adequate intervention in case of paroxysms) is required.

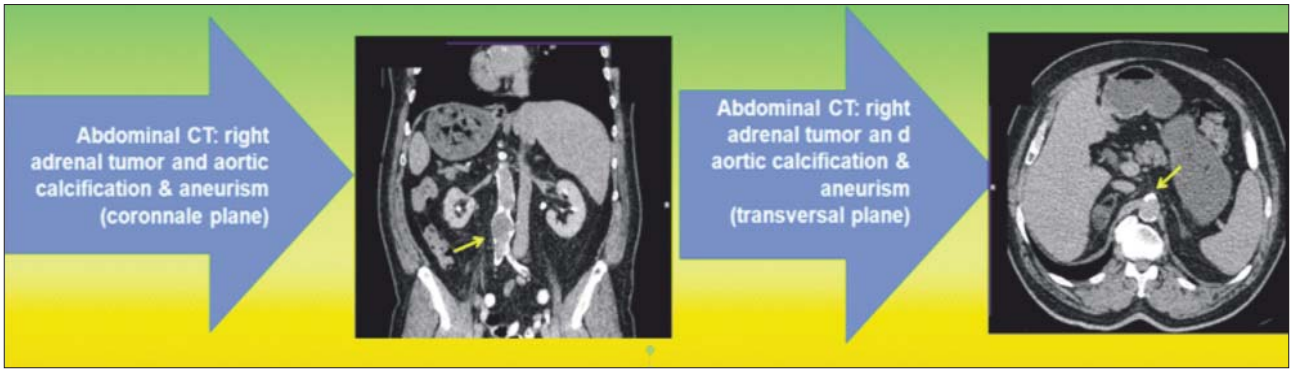

Figure 1 - Contrast computed tomography showing the aortic anomalies on a patient with right adrenal tumour and high blood pressure (different sections and planes)

Conclusion

Multidisciplinary approach offers a better perspective of both metabolic and cardiovascular conditions and adrenal masses as well as a potential pathogenic link between these.

Conflict of interest

The authors have nothing to declare.

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