Adrenal gland under pressure

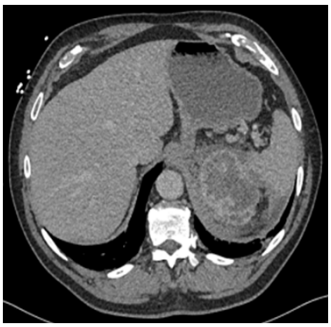
B. De Becker*[a] (Dr), G. Katsanos[b] (Dr), P. Demetter[c] (Pr), B. Corvilain[a] (Pr), N. Driessens[a] (Pr)
[a] Hôpital Erasme, Service d'endocrinologie, Université Libre de Bruxelles, Bruxelles, BELGIQUE;
[b] Hôpital Erasme, Service de chirurgie digestive, Université Libre de Bruxelles, Bruxelles, BELGIQUE;
[c] Hôpital Erasme, Service d'anatomie pathologique, Université Libre de Bruxelles, Bruxelles, BELGIQUE

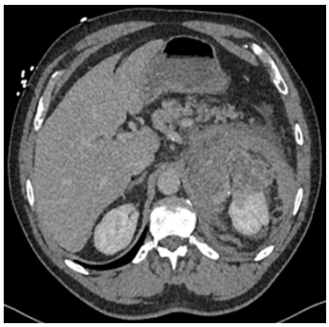
Introduction

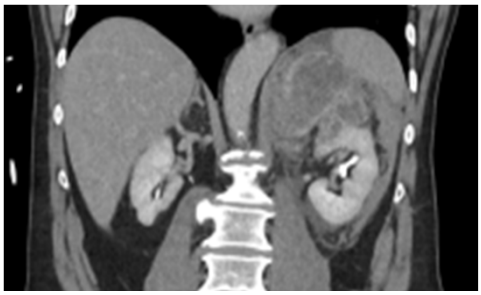
Pheochromocytoma is a rare neoplasm occuring in 0.2 to 0.5 % of patients with hypertension [1]. However, the frequence of the pathology is under-estimated.

Case Report

A 74-year-old man was admitted for sudden onset of severe pain in the left thoraco-abdominal flank. He had no palpitations and no headache. Clinically, the patient presented diaphoresis and his systolic blood pressure was measured at 240 mmHg. He had a history of hypertension treated by metoprolol, hydrochlorothiazide, felodipin and quinapril. ECG showed only signs of left ventricular hypertrophy. Biology was normal except a slight renal impairment. Thoraco-abdominal computed tomography performed to exclude an aortic dissection revealed a huge left adrenal mass (80 mm) with a left perirenal hematoma. Patient was admitted in intensive care unit to control blood pressure.







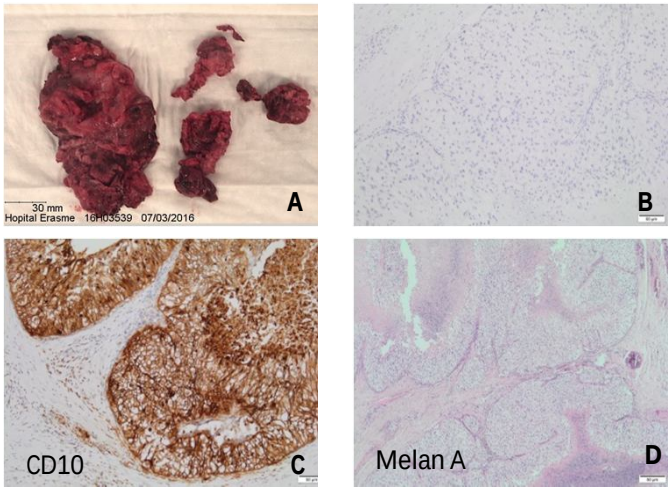
At that time, pheochromocytoma was clinically suspected. Repeated 24-hour urine fractionated metanephrines and catecholamines measurements showed elevation of normetanephrine and noradrenalin levels at 3.2- and 1.6-fold the upper limit of the normal range respectively (in 3 independent urine collections). Despite no clear cut-offs for urinary (nor)metanephrines values [2,3], we considered these increased levels as compatible with the diagnosis of pheochromocytoma.

24-hour urine fractionated metanephrines and catecholamines measurements

Sample	1	2	3
Volume (ml)	1300	1100	110
Creatinin (1-2.4 g/24h)	1.8	1.7	1.8
Epinephrin (0.5-20 µg/24h)	5	2	2
Norepinephrin (15-80 µg/24h)	170	111	100
Dopamin (65-400 µg/24h)	236	245	249
Metanephrin (74-297 µg24h)	138	95	97
Normetanephrin (105-354 µg/24h)	1343	1115	935

18F-FDG PET/CT imaging showed an FDG-avid adrenal lesion without pathological uptake elsewhere.

A laparoscopic left adrenalectomy was performed and pathological examination concluded to an infiltration of the adrenal gland by a clear-cell renal-cell carcinoma.



A : Macroscopic pieces. B : Hematoxyllin and eosin coloration showed epithelial cells. C : CD10, highly expressed, is clear-cell renal-cell carcinoma specific (not expressed by pheochromocytoma). D : Melan A, an adrenal cortical marker, was negative.

Conclusion

The present case focuses on the atypical presentation of a clear-cell renal-cell carcinoma. The adrenergic symptoms combined to the increased urinary normetanephrine levels suggested the diagnosis of pheochromocytoma but were probably related to catecholamines release caused by the hemorrhage of the renal-cell carcinoma within the adrenal medulla.

References

1) European Heart Journal (2014) 35, 1245–1254
2) JAMA (2002) 287 (11), 1427-1434
3) Nature Clinical Practice Endocrinology & Metabolism (2007) 3, 92-102

Contact

Dr. Benjamin DE BECKER
Service d'Endocrinologie
ULB-Hôpital Universitaire ERASME
808, route de LENNIK
1070 Bruxelles (Belgique)
Email : SecMed.Endocrino@erasme.ulb.ac.be

Hôpital Erasme | ULB