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A Left Adrenal Mass on Workup Which Turns Out To Be A Gastric Stromal Tumor at Surgery

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Abstract **Case Report**

A left adrenal mass was incidentally detected in a 61 years old male as he was evaluated for a dysuria. The man had a 20 years-long history of high blood pressure and used to snuff tobacco. All the adrenal hormones were normal levelled but that of the aldosterone. The aldosterone to renin ratio was low. However, the mass turned out to be an extra-adrenal one, typically a stromal tumor pedunculated into the gastric fundus. The urologists should be aware that a gastro-intestinal stromal tumor may misleadingly presents as a left adrenal tumor and consider it especially when an adrenal mass exhibits atypical hormone levels.

Keywords: Adrenal – Gastro-Intestinal Stromal Tumor (GIST).

INTRODUCTION

We report a case of an abdominal mass clinically detected as a left adrenal tumor which intraoperatively turn out to be a pedunculated gastric stromal tumor.

CASE PRESENTATION

A 61 years old man consulted for a mild dysuria. A ultrasonographic exploration of his urogenital tract incidentally detected a left adrenal mass. An abdominal computed tomography confirmed a left adrenal tumor of 42 millimeters (Figure 1). The tumor which had a density of 53 Hounsfield's units was moderately contrast-enhanced to 56 Hounsfield's units. There were also four biliary cysts in the liver and a 6-millimeter stone in the gallbladder. An abdominal magnetic resonance imaging also confirmed the left adrenal mass (Figure 2).

The man had been suffering from high blood pressure for nearly 20 years. His current anti-hypertensive treatment combined perindopril 10mg, indapamide 2.5mg and amlodipine 10mg. Still his blood pressure was around 180/100 millimeter of mercury during the physical examination. Four years earlier he underwent a medical treatment for a duodenal ulcer. He had been inhaling tobacco snuff for several years. On workup, the patient demonstrated the following hormonal levels: serum free cortisol at 8 hours a.m. = 97ng/mL (62<normal<194), serum aldosterone = 150pg/mL (30<normal<146) and normetanephrine = 32 ng/mL (normal<73). He had a normal serum natrium, potassium and chlorine levels. Hence, the mass seemed to be a Conn's adenoma with normal potassium level. Therefore, we requested anew the hormonal dosage including the renin level. The new hormonal levels were: cortisol = 430.9 nmol/L (171<normal<536), aldosterone = 3.167pmol/L (0.230 <normal<1.123), i.e. 2.82 times the upper limit of normal range, renin = 1mIU/L (2.8<normal<39.9). The aldosterone to renin ratio was 3.17, far below the 64 thresholds. We definitely concluded that the case was that of a Conn's adenoma with a normal potassium level. Thus, the patient underwent a left adrenalectomy. On intraoperative observation however, the mass proved not to be an adrenal one. It was a stromal mass located behind the epiploon. A pedicle connected it to the posterior wall of the gastric fundus. The tumor was dissected and removed, unruptured. A cholecystectomy was also performed in compliance with the patient's demand. The pathological examination of the 7 centimeter (7x4x3.5cm) and 44 grams specimen revealed that it was a stromal tumor. That stromal tumor had a low mitotic activity, i.e. *less than 5 mitoses per 25 fields (40-fold magnification)* and thereby had a

moderate recurrence potential. It was CD117, CD34 and smooth muscle actin positive. Therefore, no adjuvant imatinib therapy was proposed. Eight months after surgery, an abdominal computed tomography had detected no residual disease. Six years after the surgery, the patient had no complaint, an abdominopelvic computed tomography had detected no recurrence of the GIST and no mass in the adrenals. Also, his high blood pressure had not disappeared and continued to be controlled by means of a daily combination of perindopril 10mg, indapamide 2.5mg and amlodipine 10mg.

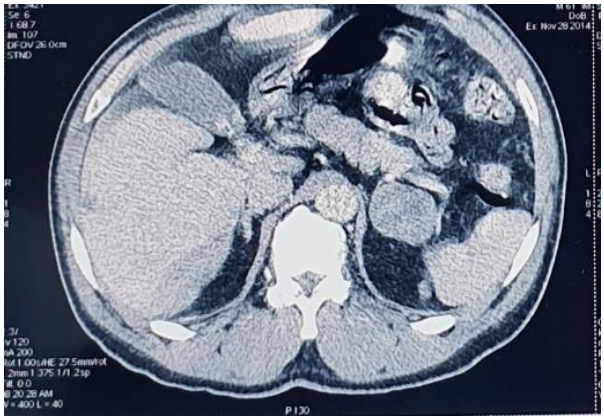

Figure 1: The left "adrenal mass" on an abdominal computed tomography

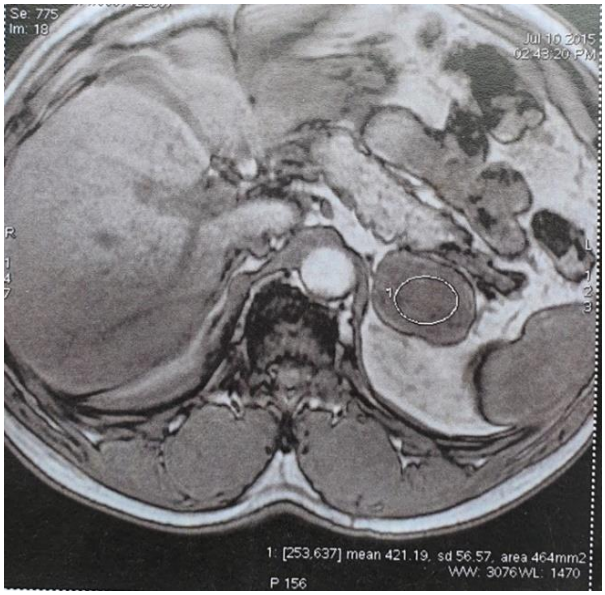

Figure 2: The left "adrenal mass" on an abdominal magnetic resonance imaging

DISCUSSION

This is a typical example that the diagnosis of an adrenal mass may be difficult or even misleading. The location of the mass on two different types of sectional imagery is the first source of confusion. The history of high blood pressure coupled with the increased levels of aldosterone have contributed to the misdiagnosis in our patient. A normal aldosterone level could not have suggested a non-adrenal mass either as not all adrenal tumors are hormone-secreting [1, 2]. The moderately elevated aldosterone with a very low aldosterone to renin ratio makes a Conn's adenoma less likely but it could hardly suggest that the tumor might be an extra-adrenal one. Maybe, a computed-tomographic vascular reconstruction might have preoperatively demonstrated the tumor's relationship to the stomach [3]. No matter the prediction, the surgery appears to be the best procedure that can reliably demonstrate the extra-adrenal origin of such a mass.

The trans-peritoneal approach has helped us to easily locate the mass and detect its relationship with the stomach. Still the surgeon should take care not to unknowingly recline the tumor and remove a non-tumoral left adrenal gland [4].

The post-treatment surveillance is important on the long run for many reasons: adrenal tumors may cohabit with a GIST [5], a gastric GIST the type of the one in our patient may locally invade the adrenal gland [6] or exist in a context of multiple endocrine neoplasia [5]. However imaging and hormonal surveillance in our patient have detected neither a GIST recurrence nor an adrenal mass up to more than six years after surgery.

CONCLUSION

The urologists must be aware that a gastric stromal tumor may misleadingly presents itself as a left adrenal mass and consider it especially when adrenal hormones' levels are atypical.

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