Adrenal carcinoma, a rare incidental finding: case presentation

Authors: Ana Maria Hilma[1,2], Adriana Gogoi[1], Simona Jercalau[1], Adrian Santa[3], Corin Badiu[1,4]

1 -„C.I.Parhon" Institute of Endocrinology, Bucharest, Romania
2- SC *"Geviana Medica" SRL*
3- „L. Blaga" University, Faculty of Medicine, Dpt. Radiology, Sibiu, Romania
4- „C. Davila" University of Medicine and Pharmacy, Bucharest, Romania

Introduction:

Adrenal carcinoma is a very rare malignancy accounting for 0.05-0.2% of all cancers(2), with an incidence 0.5-2/10^6.

Case presentation:

We present the case of a 60 year old woman with impaired fasting glucose and hypertension, who was incidentally diagnosed, after a non-enhanced abdominal CT, with a right adrenal tumor of 4.5/6 cm. The mass was described as having smooth borders (Fig.1), and a heterogeneous aspect including solid parts, necrotic areas and 1 microcalcification (Fig.2) with no detection of local invasion or tumor extension. The CT scan was performed after a routine abdominal ultrasonography, that raised the suspicion of an adrenal tumor.

Laboratory findings:

- high fasting blood glucose (126/125 mg/dl)
- low-normal ACTH (8.2 pg/mL, nv: 7.2-63.3)
- normal morning serum cortizol (13.4 µg/dl, n.v.: 3.7-19.4) with insufficient suppresion after the over night and the two-day low dose dexamethasone tests (**3.3/2.7** ug/dl)
- low DHEA-S (**15.9** ug/dl nv: 29,7-182)
- Normal testosterone
- We excluded a pheocromocytoma: repeated normal CgA, plasmatic metanephrines and normetanephrines.
- The patient also presented chronic autoimune thyroiditis with hypothyroidism: TSH=**22.19** mU/L (0.3-5.6), fT4= **0.5** ng/dl (0.6-1.2), ATPO= **182.1** mU/ml, and a slightly high CEA- **13.05** ng/ml (n.v.<10), probably due to the hypothyroidism. She was given 50 ug LT4/day.

The MRI exam showed a T2 hyperintense mixed right adrenal tumor (Fig.3), with heterogeneous enhancement seen with administration of gadolinium. The apparent diffusion coefficient (ADC) (Fig.4), did not exclude malignancy.

Surgery: The patient was operated by laparoscopic anterior transperitoneal approach (Fig. 5,6).

The histopathology exam showed an adrenal carcinoma (**pT3NxMx**) with a Weiss Score of 4 and IHC was positive for Vimentin, Inhibin, Synaptofizin, Chromogranin. Ki-67 was 5-10%.

Postoperatory, the patient did not present adrenal insufficiency and was reffered to the Oncology ward for initiation of Mitotan therapy.

Conclusions:

- Adrenal carcinomas may be oligosymptomatic and incidentally diagnosed after routine check-ups. Adrenal lesions are seen in up to 6% of patients undergoing imaging studies(3).
- The DWI (Diffusion-weighted imaging) /ADC (apparent diffusion coefficient) MRI sequences have the highest diagnostic utility in differentiating between benign and malignant nodules, although, some studies consider computed tomography (CT) and magnetic resonance imaging (MRI) to be equally effective(2).
- The imaging appearances of ACC are diverse because of the variable presence of necrosis, hemorrhage, calcification, and intracellular lipid content(1).
- The proportion of incidentally discovered ACC is increasing (2) and complete surgical removal is the mainstay of potentially curative approaches.

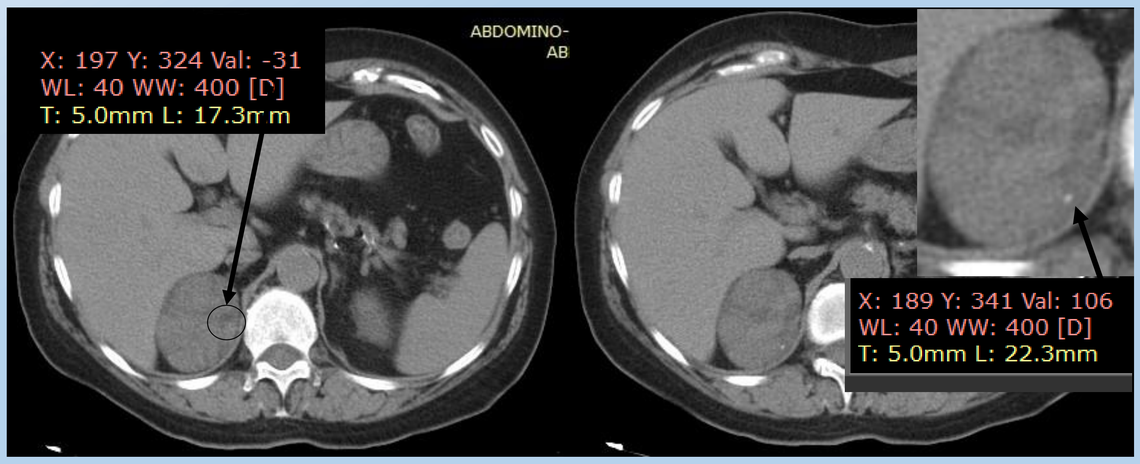

Fig.1: Abd. CT scan. Right adrenal tumor of 4.5/6 cm with smooth borders, and a heterogeneous aspect including solid parts and necrotic areas.

Fig. 2: Abd. CT scan. Right adrenal heterogeneous tumor including only one microcalcification

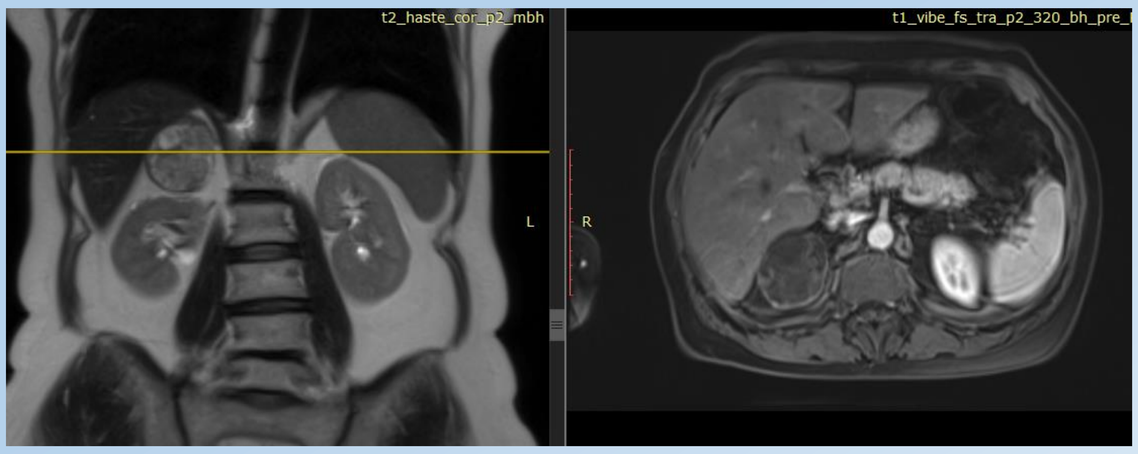

Fig.3: T2 and T1 MRI aspect of the right adrenal tumor

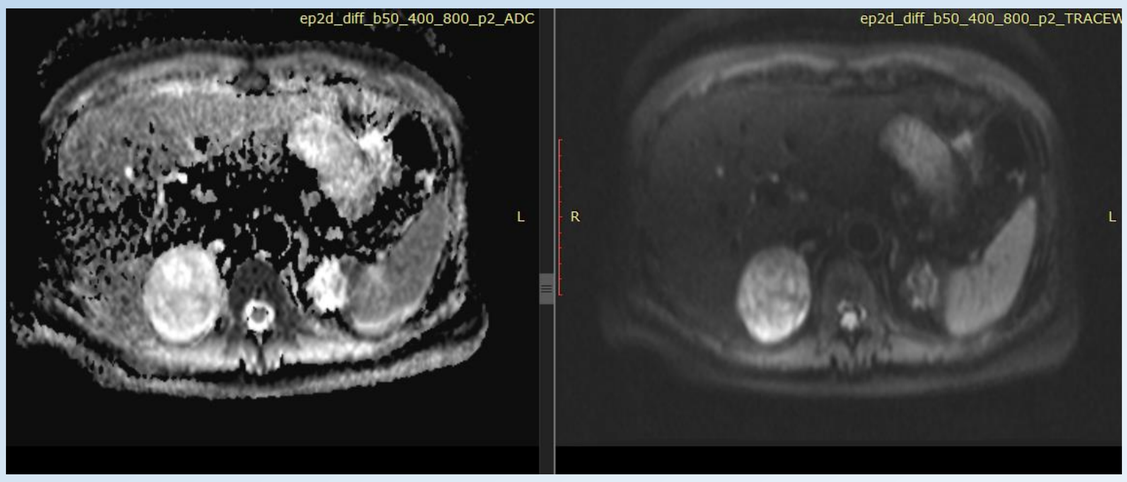

Fig.4: ADC/DWI aspects showing restrictive areas suggestive for malignancy

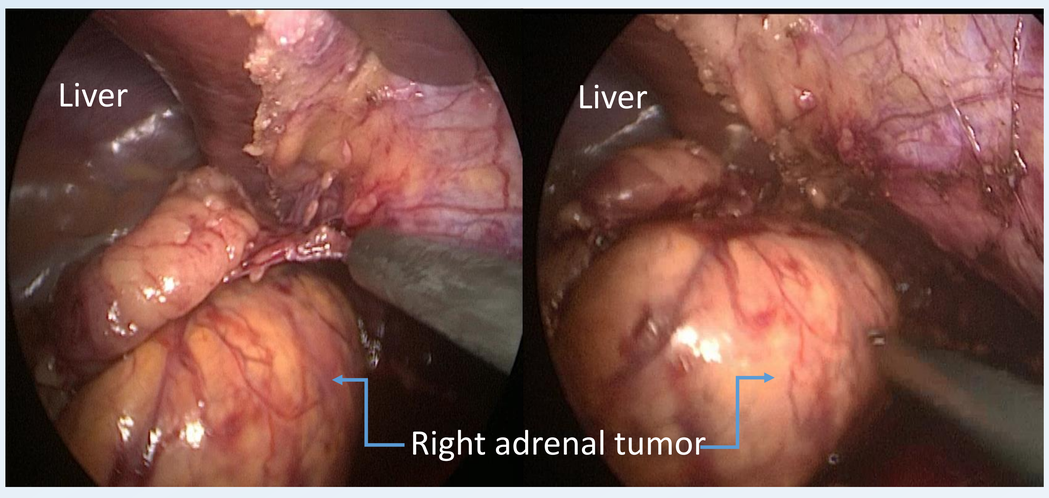

Fig. 5, 6: Intraoperatory view of the right adrenal tumor

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