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Oncocytoma in adrenal gland

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A 35-year-old woman with diagnosed ulcerative colitis, depression, and attention deficit hyperactivity disorder remaining under control of a mental health centre was referred to the General and Oncological Surgery Clinic for surgical treatment due to the left adrenal gland tumour change detected during routine ultrasonography.

The patient was asymptomatic, and the physical examination was unremarkable. Hormonal tests found slightly elevated levels of normetanephrine and 3-methoxytyramine. Other laboratory values within the norm. Computed tomography (CT) examination of the abdominal cavity showed a pathological mass measuring 5.53 × 4.36 cm in the left adrenal gland consisting of cystic and solid component. Both of them demonstrated substantial contrast enhancement (with radiological density in native phase in the range 12-40 HU), with few isolated calcifications visible in the cystic component. A CT scan aroused suspicion of malignant change, and due to the non-heterogeneous character of the lesion, 2 different types of carcinoma developing side by side could not be ruled out.

Successful left laparoscopic adrenalectomy was performed. The postoperative period showed no post-procedure complications, and the wound healed properly. The patient was discharged from hospital 4 days after the procedure in good physical condition. Histopathological examination revealed encapsulated adrenal cortex tumour (6 × 5 × 2.5 cm) with extensive fibrosis reaching 70% of the mass surface. The proliferation index was 7%. With a Lin-Weiss-Biscaglia Criteria Score of zero, diagnosis of adrenal oncocytoma was favoured.

After the operation the patient was qualified to the oncological counsel. A decision was made for repeat CT imaging at 6 months, and for endocrinologist check-up.

The term 'oncocyte' was first used by Hamperl in 1950. Usually it describes a large, highly eosinophilic, granular cell, typically associated with a Hurthle cell tumour of the thyroid gland. The cytoplasmatic granularity is due to the accumulation of mitochondria that may occupy up to 60% of the cytoplasm [1]. Oncocytomas are most frequently found within the kidney, parathyroid, pituitary, salivary glands, and thyroid [2].

Adrenal masses are found in 1–2% of abdominal CT scans, detected incidentally, and they can be cortical adenomas, cysts, myelolipomas, ganglioneuromas, pheochromocytomas, adrenocortical carcinomas, or adrenal metastases [3] Oncocytomas are very rare – to this day only 287 cases have been identified [4]. Studies have shown a 2.5:1 female distribution and 3.5:1 left-sided predominance [2], which is compatible with the case presented by us. The literature reports that about 30% of them were functional, with hyperandrogenism and Cushing syndromes as the conditions most frequently associated with them [4]. Our patient's lesion was non-functional and asymptomatic, like most adrenal oncocytic tumours. Statistics show 8% recurrence and a 3% tumour mortality rate [1, 2], which indicate the importance and necessity of patient follow-up.

The tumour classification is based on the Lin-Weiss-Biscaglia Criteria Score, which consists of major criteria including a mitotic rate of more than 5 mitotic figures per 50 high-power field (HPF), atypical mitoses, and venous invasion. The minor criteria include large tumour (> 10 cm and/or > 200 g), necrosis, capsular invasion, and sinusoidal invasion. The presence of any major criteria would be diagnosed as malignant, the presence of any minor criteria would be diagnosed as borderline or uncertain malignant potential, and the presence

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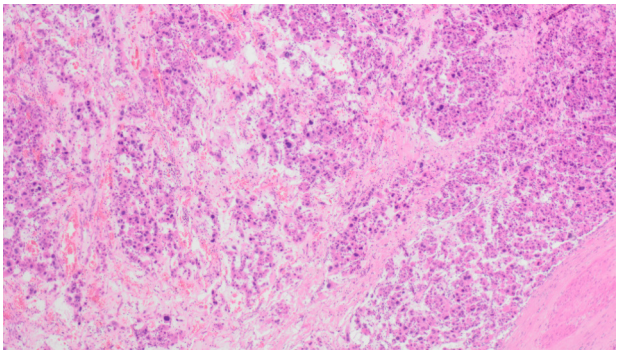

Figure 1. *Haematoxylin and eosin (H&E) low-power view (×4): Adrenal tumour composed of pleomorphic cells with prominent eosinophilic cytoplasm, surrounded by thick fibrous capsule*

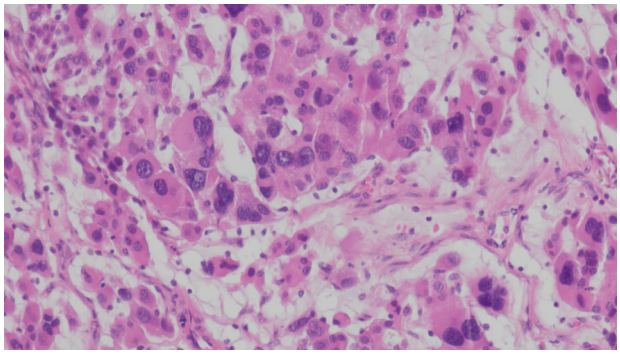

Figure 2. *Haematoxylin and eosin (H&E) high-power view (×20): Atypical tumour cells with bizarre nuclei and abundant eosinophilic cytoplasm*

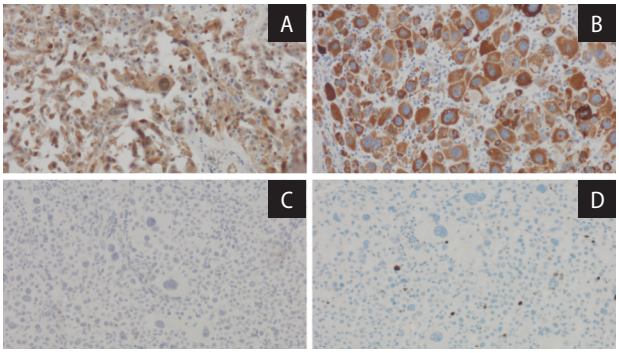

Figure 3. *Immunohistochemical stainings (×20).* **A.** *Calretinin (+);* **B.** *Melan A (+); C. chromogranin (–); D. Ki67 (+ in < 5% of tumour cells)*

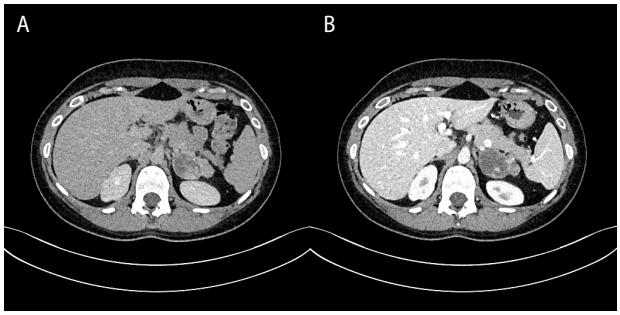

Figure 4. *Computed tomography (CT) imaging of the abdominal cavity. Pathological mass in the left adrenal gland*

of no major or minor criteria would be diagnosed as benign [5], as in our case.

Adrenal masses are treated by surgical resection, usually by laparoscopic adrenalectomy, as with our patient. Due to its minimally invasive approach, laparoscopic adrenalectomy has advantages over open surgery: decreased postoperative pain, reduced ileus, shorter hospitalisation, and better cosmetic result [6]. The procedure is safe and feasible also for benign lesions up to 12 cm in size [6]

Open transperitoneal surgery is counselled for tumours > 8 cm in size according to guidelines published by the European Society for Medical Oncology (ESMO) [2]. However, a systematic review demonstrated similar statistics of recurrence and survival rates between the 2 methods, so cases should be approached on an individual basis, with consideration of experience and preference [2].

In conclusion, despite its rarity, oncocytoma should be taken into consideration while evaluating adrenal incidentalomas. Laparoscopic adrenalectomy is the most common method of treatment. Due to possible recurrence or malignancy, follow-up of patients is necessary.

Conflict of interest

The authors declare no conflict of interest.

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