^{18}F -FDG-PET-positive adrenal tumour

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DESCRIPTION

A 36-year-old woman presented with a history of sudden back pain. A CT scan showed a retroperitoneal mass (60×38 mm) in the vicinity of the superior pole of the left kidney (figure 1A). She had no apparent signs of Cushing's syndrome. General examination, including complete blood

count, blood chemistry, chest X-ray and ECG were all unremarkable. Endocrinological examination, including basal adrenocorticotrophic hormone and cortisol levels, was also unremarkable. MRI was performed to characterise the lesion further, and confirmed the absence of fat within the solid lesion (figure 1B). T2-weighted MRI showed mild high

Figure 1 (A) Preoperative axial contrast-enhanced CT findings. The left adrenal mass is heterogeneously enhanced in cumulativeness. (B) Preoperative axial MRI findings. Opposed phase in the chemical shift imaging showing the absence of fat within the solid lesion. (C) T2-weighted MRI showing heterogeneous and mild high intensity.

Figure 2 Coronal (A) and axial (B) ^{18}F -fluorodeoxyglucose (FDG) positron emission tomography showing remarkable FDG uptake in the left adrenal mass.

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Learning points

- ▶ Oncocytomas in most cases are benign epithelial tumours composed of eosinophilic cells.
- ▶ Adrenocortical oncocytomas are very rare adrenal tumours.
- ▶ Adrenal oncocytomas should be considered in cases of ^{18}F -fluorodeoxyglucose positron emission tomography-positive adrenal tumour.

intensity (figure 1C). ^{18}F -fluorodeoxyglucose positron emission tomography (FDG-PET) showed intense FDG uptake in the mass (figure 2). Maximum standardised uptake value was 14.2. There was no uptake in other lesions. A left adrenalectomy was performed through a left subcostal incision after assessing the probable size of the malignancy. The histopathological analysis revealed that the tumour comprised eosinophilic cells that were diffusely immunopositive for mitochondrial antigen and steroidogenic factor 1 immunopositivity. We therefore diagnosed this tumour as an adrenocortical oncocytoma. Although the

oncocytoma showed nuclear atypia, diffuse architecture and clear cells merely comprising less than 25% of the tumour, it was classified as 'benign' according to the Lin-Weiss Bisceglia criteria.¹ Oncocytomas arising in the retroperitoneal heterotopic adrenal tissue are very rare.² High FDG uptake in adrenocortical oncocytomas is suggested to be due to the presence of numerous intracellular mitochondria.³ At 2 years after surgery, FDG-PET showed no recurrence or metastasis.

Competing interests None.

Patient consent Obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

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