Unenhanced and (B and C) contrast-enhanced computed tomography scan showed the mass-like enlargement of bilateral adrenals on axial (B) and coronal (C) images. The right adrenal gland measured 4.6×6.1×6.9 cm, and the left adrenal gland measured 1.9×2.2×3.1 cm.

Positron emission tomography scan (coronal and axial views) showed intense FDG uptake in bilateral adrenal masses (arrows). There were no other areas of abnormal FDG uptake. FDG: Fluorine-18 fluorodeoxyglucose.
Histological slide of the right adrenal gland (Hematoxylin and Eosin staining ×200) showed caseous necrosis and a mixed inflammatory infiltrate with lymphocytes and plasma cells, consistent with tuberculosis.

A 37-year-old man presented with lumbar pain, fatigue, anorexia, weight loss, and pigmentation for 3 months. Laboratory findings showed a low morning serum cortisol of 76.12 nmol/L (normal range, 85.30-618.00 nmol/L) and a high adrenocorticotropic hormone of 58 pg/mL (normal range, 7-32 pg/mL). Computed tomography (CT) scan demonstrated enlargement of the bilateral adrenals (Picture 1). Fluorine-18 fluorodeoxyglucose positron emission tomography (FDG-PET) (1) was performed to identify the primary tumor. Interestingly, whole-body FDG-PET demonstrated intense FDG uptake in bilateral adrenal masses and no evidence of abnormal uptake in extraadrenal regions (Picture 2). Fine-needle aspiration cytology of the right adrenal mass was performed under CT guidance, and revealed the diagnosis of adrenal tuberculosis (Picture 3).

Adrenal tuberculosis, malignancy and idiopathic adrenal atrophy were initially noted as the causes of Addison’s disease, and subsequently other causes, including metastatic tumor, blastomycosis and histoplasmosis have also been attributed (2, 3). FDG-PET has been used to differentiate benign from malignant adrenal masses (4). In this tuberculosis patient, we identified elevated FDG uptake in both adrenal glands, which could not be differentiated from primary bilateral adrenal lymphoma or other malignancies (5). This uncommon case emphasized that benign adrenal nodules can have increased FDG uptake leading to false-positive results on PET. As there is no specific imaging feature, biopsy is required for the diagnosis.

References