

Hypertensive crisis after endoscopic ultrasound-guided fine-needle aspiration of the right adrenal gland



Fig. 1 In a 51-year-old man with suspected adrenal metastasis of lung cancer, computed tomography (CT) scan showed an enlarged right adrenal gland with a heterogeneous appearance.



Fig. 2 Endoscopic ultrasound (EUS) of right adrenal gland. A heterogeneous mass of almost 5 cm with a hypoechoic center was seen in the right adrenal gland.

A 51-year-old man was referred for endoscopic ultrasound (EUS)-guided fine needle aspiration (FNA) of a suspected adrenal metastasis of lung cancer. Computed tomography (CT) scans disclosed persistent pleural thickening of the right upper lobe after an episode of pneumonia, and an enlarged right adrenal gland (▶ Fig. 1). At positron emission tomography CT (PET-CT) scan, both sites showed increased fluorodeoxyglucose (FDG) uptake. EUS with the patient under conscious sedation with midazolam and fentanyl demonstrated an enlarged, heterogeneous right adrenal gland of 50 mm diameter, with a hypoechoic center (▶ Fig. 2). Transduodenal FNA was performed twice with a 25-gauge needle (Echotip Ultra,

Cook Endoscopy). During post-procedure monitoring for 2 h, only mild symptoms of nausea were observed and the patient was subsequently discharged. However, 5 h after discharge, he was readmitted to the hospital with severe abdominal pain, vomiting, and shortness of breath. A tachypnoeic and somnolent man was seen, with marked peripheral vasoconstriction, and abdominal tenderness without guarding. Vital parameters showed blood pressure 155/100 mmHg, pulse rate 140 bpm, and oxygen saturation 73%. Laboratory results showed a severe metabolic acidosis (pH 6.85; lactate 20 mmol/L), and hyperglycemia (glucose 37 mmol/L). Chest radiograph showed bilateral perihilar and interstitial edema.

The patient was immediately admitted to the intensive care unit with a provisional diagnosis of hypertensive crisis and secondary acute decompensated heart failure, most likely due to puncture into a pheochromocytoma. Cytologic evaluation of the FNA specimen confirmed the diagnosis as it revealed irregularly arranged monomorphic cells with round nuclei, and positive staining for chromogranin (▶ Fig. 3a, b). After laparoscopic right-sided adrenalectomy for the pheochromocytoma, the patient slowly recovered, and was discharged home a few weeks later. Further pulmonological evaluation did not demonstrate lung cancer.

Depending on its capacity to release catecholamines to the systemic circulation, pheochromocytoma may evoke mild or nonspecific signs and symptoms, and as a consequence, up to 15% of tumors remain undiagnosed during life [1,2]. EUS-guided FNA of adrenal pheochromocytomas without any complications has been described in small numbers in case series [3–5]. Accordingly, a recent American Society for Gastrointestinal Endoscopy guideline on adverse events associated with EUS-guided FNA does not describe the risk reported here [6]. Our case shows that EUS-guided puncture of pheochromocytoma may evoke an abrupt release of catecholamines, and subsequently, a life-threatening hypertensive crisis, similar to the well-known risk of percutaneous biopsy [2]. Based on this case, we advise exclusion of (subclinical) pheochromocytoma before all EUS-guided punctures of adrenal lesions, by 24-h urine collection for metanephrines and catecholamines [7].

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Competing interests: None

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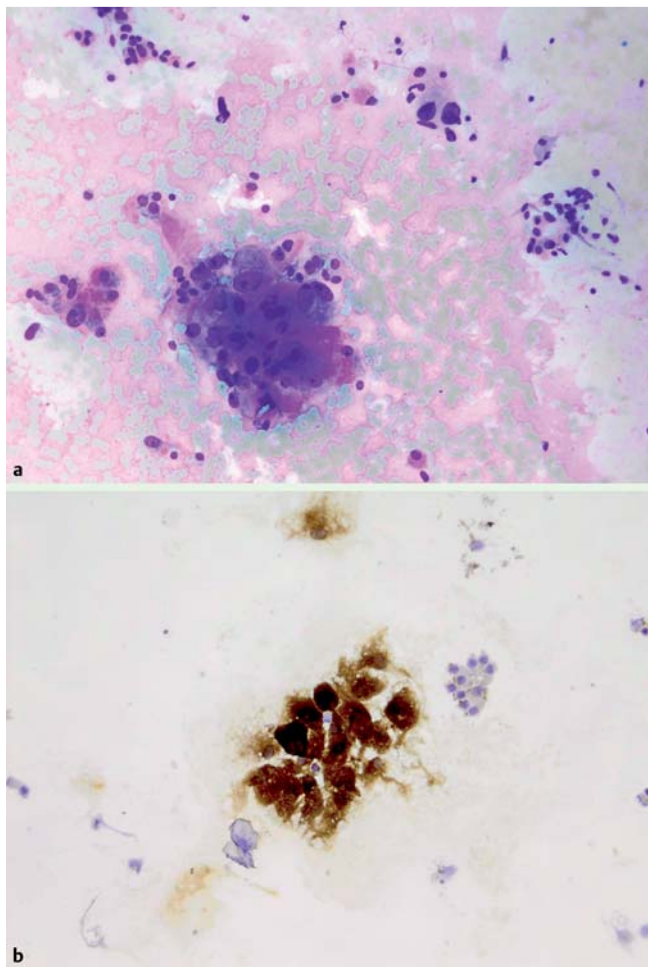


Fig. 3 Microscopy of cytology specimen: **a** hematoxylin and eosin (H&E) staining; **b** chromogranin staining.

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