

Bilateral adrenal tuberculosis diagnosed by endoscopic ultrasound-guided fine-needle aspiration cytology

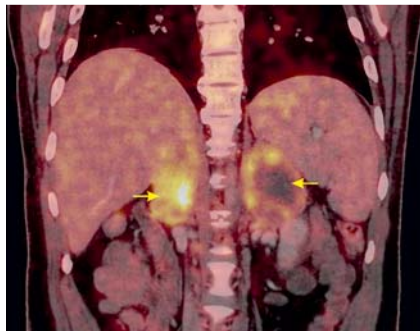
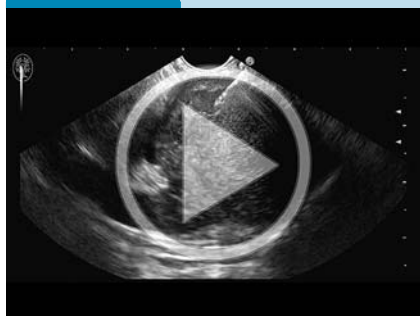


Fig. 1 Positron emission tomography – computed tomography scan showing the uptake in both adrenal glands (arrows).

Video 1



Endoscopic ultrasound-guided fine-needle aspiration of the left adrenal gland.

A 35-year-old patient presented with a 1-month history of fever, fatigue, and loss of weight and appetite. Clinical examination was unremarkable except for hypotension (90/60 mmHg). The cause of fever could not be ascertained from routine investigations. Biochemistry results were: serum albumin 2.8 gm/dL, international normalized ratio 1.4, serum cortisol 4 µg/dL, serum sodium 122 mEq/L, and serum potassium 5.8 mEq/L.

A contrast-enhanced abdominal computed tomography (CT) scan showed bilateral adrenal enlargement. Positron emission tomography (PET)-CT showed uptake only in the adrenal glands on both sides (● **Fig. 1**). Endoscopic ultrasound (EUS) showed a 5×4 cm well-defined, hypoechoic, left adrenal mass, with a definite outline (● **Fig. 2a**). The right adrenal gland showed a 4×3 cm mass (● **Fig. 2b**). EUS-guided fine-needle aspiration (FNA)

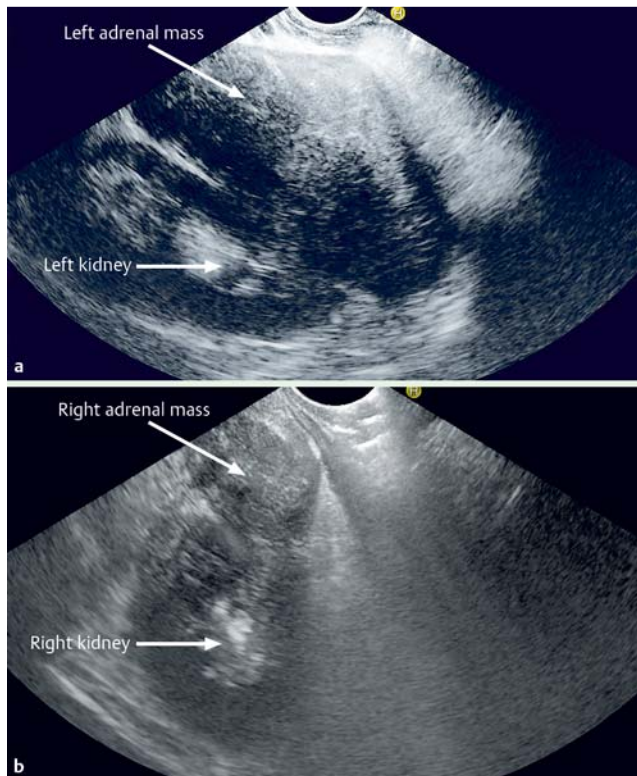


Fig. 2 Endoscopic ultrasound images.
a Left adrenal mass.
b Right adrenal mass.

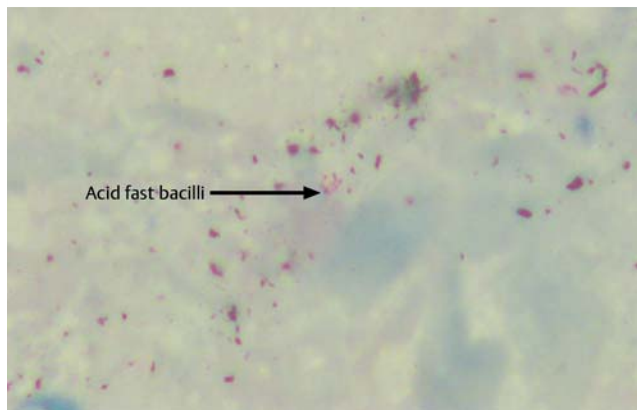


Fig. 3 Acid-fast bacilli against a background of necrotic cells.

was performed on the left adrenal gland (● **Video 1**).

Cytology revealed numerous acid-fast bacilli against a necrotic background (● **Fig. 3**). A diagnosis of adrenal insufficiency secondary to tuberculosis was made, and treatment with corticosteroids for adrenal insufficiency and antitubercular therapy was started. Patient symptoms showed improvement within 2 weeks. Differential diagnosis of bilateral enlarged adrenal glands includes infections such as

tuberculosis, histoplasmosis, neoplastic masses (malignant metastases, adrenal carcinoma, pheochromocytoma, lymphoma), and autoimmune disease (Addison's disease) [1,2]. Tissue diagnosis can be undertaken by ultrasound, CT or EUS-guided FNA of adrenal glands. Various approaches have been used for ultrasound and CT-guided adrenal sampling. Complications occur in 2.8%–8.4% of cases and include adrenal hematoma, pneumothorax, perinephric hemorrhage, pain,

needle-tract metastasis, and pancreatitis [3]. EUS-guided adrenal FNA has emerged as a safe alternative to ultrasound and CT-guided adrenal FNA [4]. Advantages of the EUS-guided approach include proximity to the left adrenal gland thus avoiding passage through other organs, real-time monitoring of needle passage, and high accuracy for adrenal identification. The accuracy of transabdominal ultrasound for adrenal identification is 70% for the left adrenal gland and 90% for the right gland [5]. Hence, complication rates are lower with EUS-guided FNA than with percutaneous approaches [5].

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Competing interests: None

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Bibliography

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