CASE REPORT

Intrarenal Adrenal Cyst Presenting as a Renal Mass

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INTRODUCTION

Ectopic adrenal tissue detected in 20% of autopsies is relatively a common lesion. The site of its appearance is closely related to the migration of primordial adrenal cells in the course of organogenesis. Ectopic intrarenal adrenal tissue can be found in 6% of general population. They are usually discovered incidentally in autopsies, and surgical specimens are of no clinical significance. Occasionally, diagnosis of adrenal rest is difficult. If detected, they often need to be differentiated from neoplastic lesions.[1]

The present report describes a unique case of adrenal cyst in a background of ectopic intrarenal adrenal tissue, which clinically and radiographically mimicked a renal mass. Very few cases have been reported in the literature.

CASE REPORT

Patient was a 62-year-old woman with multiple medical problems, including diabetes mellitus, hypertension, and asthma. In the process of follow-up for the urinary tract infection, ultrasonography revealed a markedly echogenic mass without acoustic shadowing in the upper pole of the left kidney.

Computed tomography of the abdomen and pelvis demonstrated a 2.0 × 2.5 cm well-defined hyperdense mass in the upper pole of the left kidney with a soft tissue internal architecture, which showed enhancement after contrast administration (Figure 1). Laboratory studies, including renal function tests, hormonal evaluation (to rule out pheochromocytoma and Cushing syndrome), and

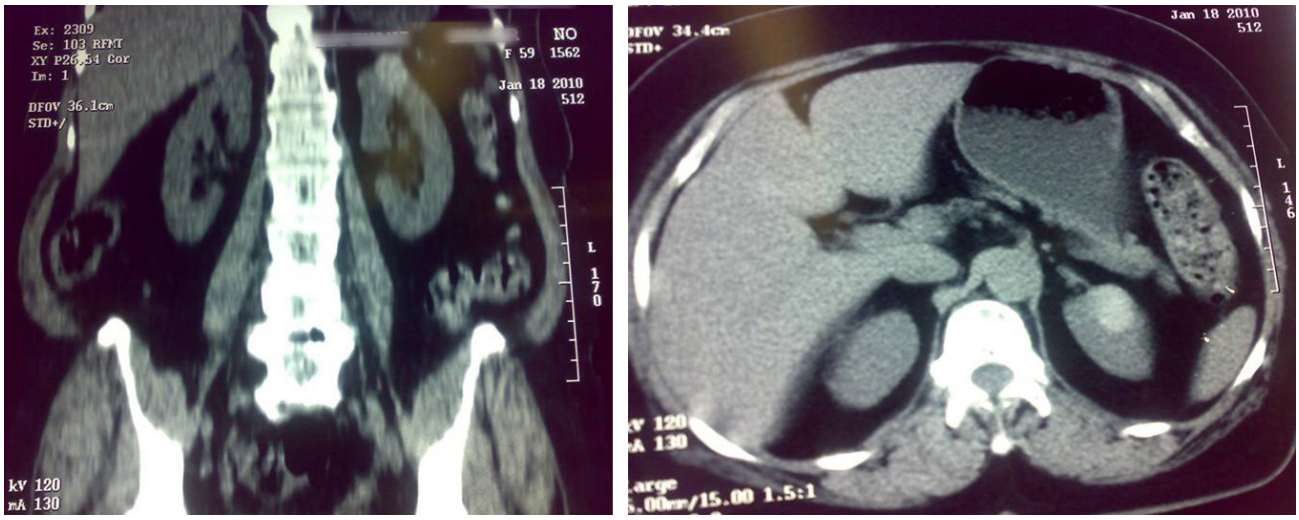

Figure 1. The computed tomography scan showed a hyperdense mass in the upper pole of the left kidney.

hematological parameters were within normal limits, and urinalysis was normal. The blood pressure was within normal limits.

Laparoscopic upper pole partial nephrectomy was performed en bloc with the adherent adrenal gland identified grossly intra-operatively.

Pathologic examination disclosed a cyst measuring 20 × 25 × 15 mm, weighing 30 g, and containing blood clot, in which some of the red cells were still intact. There is fibrotic tissue between the mass and the kidney. Microscopically, the cyst wall was made up on its innermost surface of the organizing blood clot. External to this was a densely fibrous layer, 0.3 cm in thickness on average (Figure 2). On the external surface and scattered through the fibrous portion were nodules of normal adrenal cortical tissue.

Adrenal cortical cells were positive for markers of endocrine differentiation, such as inhibin and synaptophysin, and negative for cytokeratins and epithelial membrane antigen. No deposits of calcium or cholesterol were found. Pathologic diagnosis was adrenal cyst in an ectopic intrarenal adrenal tissue.

DISCUSSION

Ectopic adrenal tissues usually consist of small clusters of cells identical to adrenal cortex, and are found in various locations. Adrenal rest is most commonly located in the retroperitoneoum near the adrenal, above the kidney, in the vicinity

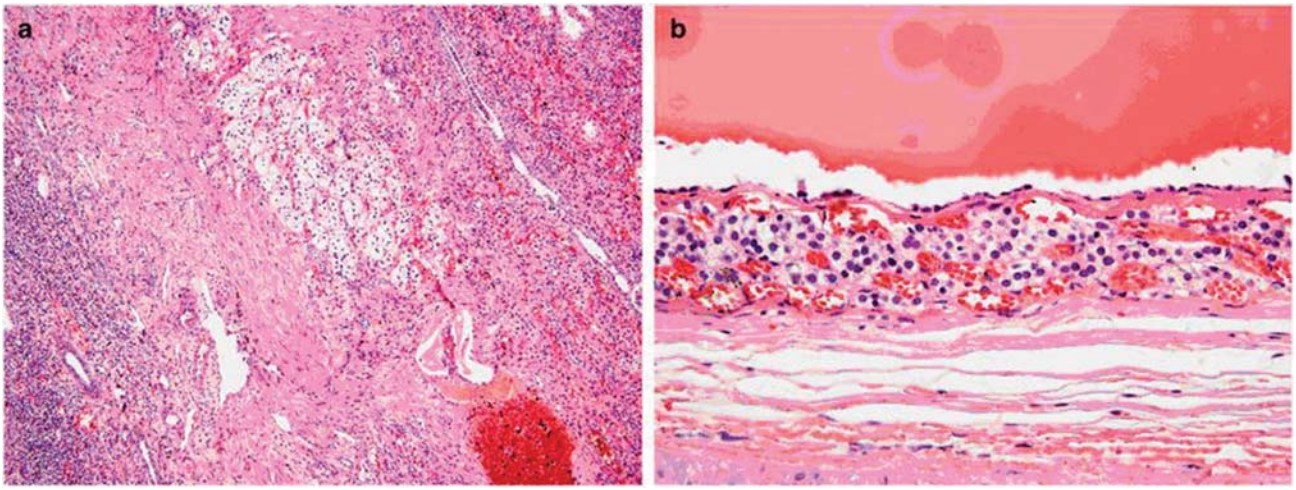

Figure 2. (a) Renal tissue cohesive to adrenal gland tissue with infiltration of benign looking cortical adrenal cells into the renal parenchyma. (b) The adrenal tissue surrounds a cyst with flat lining.

of the spermatic or gonadal vein, in the path of the testicular descent, near the tail of the epididymis, in the female gonadal region, or in the broad ligaments of the uterus. In the literature, distant unusual location of adrenal rest, such as the lung, liver, and central nervous system, has also been reported.[2]

Nine cases of intrarenal adrenal tissue and renal-adrenal fusion have been reported in a case series study, in which the adrenal fused with the kidney, and adrenal tissue infiltrated into the renal parenchyma. Seven cases have been incidentally identified in radical nephrectomy specimens removed for other reasons, but two other cases have been diagnostic problems. One case was clinically suspected to be a renal mass by radiologic study, but histologically was an adrenal cortical adenoma. The other case was similar to renal invasion by adrenocortical adenocarcinoma, but it was adenocortical adenoma which has been fused with the kidney.[3]

An adrenal pseudocyst mistaken for a cystic renal mass was also described, but radiologic studies usually show that they are separated from the kidney by a clear space allowing preoperative diagnosis.[4]

Adrenal rest usually shows vascularizing and lipid-rich natures on imaging studies.[5] In this patient, radiologic finding and gross appearance were misleading and similar to a renal mass. The adrenal cyst radiologic appearance was unusual and therefore, unique. On computed tomography scan, this mass was in the kidney and considered to be of renal origin, but histologic finding revealed that its origin was actually adrenal.

Histologically, we must differentiate intrarenal adrenocortical clear cells with clear cell type renal cell carcinoma, which may be confused with each other.[6] To the best of our knowledge, this is the only reported case of ectopic intrarenal adrenal cyst mimicking a renal mass.

CONFLICT OF INTEREST

None declared.

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