Periadrenal Bronchogenic Cyst, with Milk of Calcium, Clinically Mimicking a Pheochromocytoma

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INTRODUCTION
Diagnosis of an adrenal mass is challenging and requires clinical, biochemical, and radiological evaluation. The primary goal is to distinguish between benign and malignant. The most common incidental tumors of the adrenal gland are adenomas and metastases. The size, function and mass development on imaging are useful criteria. A periadrenal bronchogenic cyst (BC) is extremely uncommon; very few cases have been reported, some of them with intracystic milk of calcium as our case. BC are congenital malformations derived from the embryonic foregut and usually develop in the mediastinum and lung (1). Subdiaphragmatic BC are rare and retroperitoneal ones distinctly unusual. BC are usually asymptomatic, unless they become secondarily infected, perforated, or large enough to compress adjacent organs. Most of the reported cases have been diagnosed incidentally.

CASE REPORT
We present the case of a 50 y/o female with history of high blood pressure and hypothyroidism that presented with a periadrenal BC mimicking a pheochromocytoma. MRI showed a stable retroperitoneal left adrenal nodularity measuring 1.6 cm which did not follow the criteria for adenoma. However, a laboratory test showed a mild increase in plasma epinephrine levels (52 pg/ml; Reference = 0 - 34 pg/ml), and the patient was presenting high blood pressure suspicious for a pheochromocytoma. A left retroperitoneal laparoscopic adrenalectomy was performed. The postoperative course was uneventful. Macroscopic evaluation of the specimen revealed a 2.0 cm cyst with an intracystic yellow-tan proteinaceous fluid, adjacent to the unremarkable adrenal gland (Figure 1). Microscopic evaluation revealed a pseudostratified ciliated columnar epithelium lining the cyst wall (Figure 2); the adrenal gland was unremarkable (Figure 3). Immunohistochemical studies (Figures 4 through 8) were negative for the neuroendocrine markers chromogranin and synaptophysin. Histology and positive immunostains for pankeratin, p63, TTF-1 were consistent with the diagnosis of a periadrenal bronchogenic cyst with milk of calcium.

DISCUSSION
Bronchogenic cysts (BC) are congenital malformations derived from the primitive foregut during the 3rd to 7th weeks of development. BC arising later in gestation are more peripheral, and can be located below the diaphragm as the esophagus grows longer caudally during the second month of gestation (1). Retroperitoneal location is extremely rare (4), and a few periadrenal cases have been reported (1,2,3,5,6). Even though periadrenal cysts are nonfunctioning lesions, cases of increased catecholamines levels and hypertension have been described, with a possible explanation being the compression of the adrenal medulla by the adjacent cyst (2). When this occurs, the differential diagnosis include a pheochromocytoma and the pre-surgical diagnosis depends on imaging studies. However, the variable intracystic fluid composition (water, proteinaceous material, blood products, and calcium oxalate) present in bronchogenic cysts can produce increased CT attenuation mimicking a solid lesion, making the diagnosis even more difficult (6,7). This patient is currently asymptomatic.

BIBLIOGRAPHY