INTRODUCTION

Adrenocortical oncocytoma is exceptionally rare. Most of these tumors are benign and non-functioning. Oncocytomas are epithelial tumors composed of cells with large granular cytoplasm packed with mitochondria which are arranged in alveolar, tubular, or solid patterns. They occur in various locations throughout the body including the kidney, salivary glands, thyroid, parathyroid glands, lung, pituitary gland, ovary, and several other organs. Only 51 cases have been reported in the literature to-date, adrenocortical oncocytoma is an exceedingly rare pathological variant of adrenal neoplasm. We report a rare case of a non-functioning adrenal oncocytoma.

CASE REPORT

A 20 years old unmarried female patient, with no known comorbid condition, presented to outpatient department with complaints of low intensity right lumbar pain for 15 days. Pain was dull in nature and localized with no aggravating or relieving factors. She had normal menstrual cycle.

On examination, her blood pressure was 110/60 mmHg; pulse was 82/minute. An ultrasound showed 6 x 5 cm homogeneous mass of right adrenal gland. A computed tomogram showed hypodense mass lesion 6 x 4.2 cm involving right adrenal gland. Differential diagnosis of non-functional adrenal adenoma was made. Based on the above findings, a working diagnosis of non-functional adrenal adenoma was made.

A laparoscopic right adrenalectomy was performed using the 3-ports lateral transperitoneal approach. There was minimal blood loss of around 10 ml. Operative time was 65 minutes. The mass was completely encapsulated and easily dissected from the superior pole of the right kidney. The postoperative recovery was uneventful. Patient was discharged on the first post-operative day.

The operative specimen was a light brown nodular tissue measuring 6.6 x 5 x 4.5 cm in dimension. On serial slicing, it was firm in consistency with encapsulated light brown cut surface, focally reaching close to radial excision margins.

Microscopy revealed thinly encapsulated tumor composed of neoplastic cells arranged in diffuse sheets focally separated by fibrous septae. The cells were arranged in polygonal and reveal round nuclei showing mild pleomorphism with open vesicular chromatin and abundant dense eosinophilic cytoplasm. Diagnosis of adrenal oncocytoma was made.

DISCUSSION

The adrenal oncocytoma is rare benign neoplasm, oncocytic neoplasm has been seen mostly in kidney, thyroid and salivary glands. Large size (> 5 cm), heterogeneous appearance and presence of necrosis can be confused with adrenal cortical carcinoma.

These adrenal oncocytomas are detected incidentally, because of non-functional and should be included in the differential diagnosis of adrenal incidentalomas,
especially if large tumors are detected.\textsuperscript{3} It has been seen that approximately 22% patients have adrenal oncocytoma with malignant behavior.\textsuperscript{1} The pathogenesis of adrenal oncocytoma is not well established. Females are more affected than male with left side predominance.

Adrenal gland masses are best visualized on CT or MRI but still no definitive features can differentiate benign from malignant adrenal oncocytic neoplasm on imaging.\textsuperscript{4} There are some features which can differentiate the adrenal oncocytic tumor from adenoma, like non-homogeneous appearance, increased attenuation, fat-poor on CT scan and loss of signal intensity on appose phase MR images, fat poor on MRI. Sometimes adrenal pheochromocytoma can be confused with adrenal pheochromocytoma on CT scan but clinical and biochemical parameters can differentiate it. Definitive diagnosis of oncocytoma can be made pre-operatively by fine needle aspiration cytology after careful exclusion of functionality of tumor and when the tumor outline is preserved along with no invasion to surrounding structure.\textsuperscript{5}

Histopathologically, Weiss system is the most popular for differentiating benign from malignant adrenocortical neoplasm.\textsuperscript{6} In rare situations, histopathology is unable to differentiate it from other adrenal masses so by doing immunohistochemistry like negative chromogranin A and absence of neurosecretory granules on microscopy will differentiate from pheochromocytoma. Adrenal oncocytoma demonstrate numerous mitochondria in tumor cell cytoplasm at electron microscopy and absence of mitochondria will give clue to the diagnosis of adrenocortical adenoma.

Laparoscopic adrenalectomy is the procedure of choice from small as well as large functioning and non-functioning adrenal masses. Even bilateral large functioning adrenal tumors can be treated safely by laparoscopically in single stage when the operator has sufficient experience.\textsuperscript{7}

Transperitoneal laparoscopic approach was adopted in this patient, which has been proved to be an extremely reliable procedure for benign pathologies and isolated metastases.\textsuperscript{8} Laparoscopic surgery offers a safe alternative in confronting adrenocortical neoplasms, even when the biological behavior of the tumors cannot be pre-operatively evaluated in a definite way.\textsuperscript{9} It remains challenging, however, to distinguish between benign and malignant adrenal oncocytomas. A combination of biochemical, histopathologic, radiologic, and clinical features can be used to guide appropriate management, but surgical resection remains the mainstay of treatment for lesions deemed to be malignant.

REFERENCES