

## Large and Rare Adrenal Oncocytoma

Pranay Pawar<sup>1</sup>, Renji Mathew<sup>2</sup>, Sanchit Chaudhry<sup>3</sup>, Amit Mahajan<sup>4</sup>,

<sup>1</sup> Assistant Professor, <sup>2</sup> Resident, <sup>3</sup> Assistant Professor, <sup>4</sup> Associate Professor,  
Department of Surgery, Christian Medical College and Hospital, Ludhiana – 141008, Punjab

### ABSTRACT

Adrenal oncocytoma is a very rare tumor, with just about a hundred reported in literature. The fact that they are mostly non-functioning and benign leads them to attain a large size or they are discovered incidentally on imaging. We describe a case of a non-functioning giant adrenal oncocytoma in a 30-year-old lady that was managed successfully. This is probably the largest case of adrenal oncocytoma reported till now.

### Key words:

Oncocytoma, non-functioning, gross examination

### Introduction

Adrenal oncocytoma is a very rare differential of adrenal incidentaloma with other possibilities being cortical adenoma, pheochromocytoma, adrenocortical carcinoma, granulomas, adrenal cysts, myelolipoma, ganglioneuroma and metastatic [1,2]. Oncocytoma or the neoplasms composed entirely of oncocytes are well described in the kidney, thyroid, salivary glands and other sites like the pituitary, parathyroid, lacrimal gland, respiratory tract and choroid plexus. Oncocytic adrenal tumors have only a few reported cases [3].

### Case Report

A 30-year-old lady presented to the out patient department with complaints of post prandial heaviness for the last 6 months. She had no co-morbidities and her personal, family and past history was unremarkable. Her general physical examination was normal and abdominal examination revealed an 8 x 8 cm smooth mass with ill-defined borders in the right hypochondrium. A computed tomography scan showed a large 20 x 15 x 7 cm well demarcated enhancing mass between the right kidney and liver with multiple internal septae and few hypodense areas suggestive of a right adrenal mass.

Her baseline tests including haemogram, renal function, and liver function were normal. Her urinary

#### Address for correspondence

Dr Renji Mathew, Resident, Department of Surgery, Christian Medical College and Hospital, Ludhiana, Punjab  
Phone- 9855397251  
E-mail: drrenjimathew@gmail.com

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metanephrines, 24 hour urinary VMA, and serum cortisol were all within normal limits. The patient underwent an open right adrenalectomy, which was uneventful.

On gross examination, the specimen weighed 3200 grams, and measured 23.5 x 17.5 x 10 cm. Microscopically the tumor was encapsulated and composed of oncocytic cells arranged in sheets, nests, trabeculae and pseudoalveolar pattern. The cells were polygonal with round to oval nuclei and abundant eosinophilic granular cytoplasm. The central area of the tumour showed necrosis and there was no capsular and vascular invasion. The periphery showed a normal adrenal gland. The tumour cells were negative for Vimentin, S-100 and Chromogranin A. The postoperative period of the patient was uneventful.



Figure 1 : Cut section of the oncocytoma showing central necrosis

### Discussion

Oncocytic neoplasms arising in the adrenal glands are extremely rare, and are usually discovered to be nonfunctional and mostly benign tumors. However,

recent data indicates that about 20% of adrenal oncocytoma's demonstrate some elements of malignancy and about 10-20% of them appear to be functioning secreting cortisol and adrenal androgens. Most of the tumors have arisen in the age group of 27 to 72 years with a greater majority present in females. The size varies between 3 to 17 cm in all reported cases, making this the largest reported case in literature [4,5].

On gross examination they are a large, rounded, encapsulated a well-circumscribed mass. They are usually brown or mahogany on cut section and may display areas of necrosis and hemorrhage. The microscopic appearance includes cells arranged in solid, trabecular, tubular or papillary patterns and the cells are highly eosinophilic and granular. On electron microscope observation, the cells contain abundant mitochondria. The immunophenotypic profile is difficult to evaluate, as it was not studied in more than half of the cases. They are generally negative for S-100 and Chromogranin and immunoreactivity being variable for vimentin [4,6].

The CT and MRI findings are non-specific and there is no characteristic imaging of adrenal oncocytoma, however it is possible to differentiate the lesion from adrenal adenoma based on fat concentration.

The approach to an adrenal mass depends on its size and function. The surgical management has traditionally been open surgical approach, however these days a laparoscopic approach carries less morbidity, quicker recovery and a shorter hospital stay. The contraindications include very large size, vascular invasion, diffusion to surrounding structures and presence of lymphadenopathy [6].

## Conclusion

Adrenal oncocytoma is one of the histological subtypes of incidentally detected adrenal masses. It is usually a large, benign, nonfunctional adrenal tumor and it usually presents as an incidental, large adrenal mass. The CT and MRI findings cannot be used to differentiate benign and malignant oncocytic neoplasms and only microscopic criteria are able to identify precise histology characterization and clinical behavior, so adrenalectomy is the mainstay of therapy and laparoscopy is now the most popular approach.

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