



A STUDY OF ADRENAL SWELLINGS:

Urology

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ABSTRACT

The adrenal glands description and its physiology were described 500 years ago. In 1850, Thomas Addison¹ and Charles Brown-Sequard² proved the mineral and cortical function and described the adrenal disorder and its surgical management. Adrenal tumours can be benign and malignant lesions. These tumours can be either functional or nonfunctional. Malignant lesions can be primary or extra adrenal. Adrenal tumors incidence is rising due to increased use of imaging modality in current era. Adrenal tumours can be asymptomatic or symptomatic in the form of tumour related or functional. These tumours are removed surgically in view of risk of malignancy and hormonal disturbances.³ Even with the functional study and advanced imaging, preoperative diagnosis is always challenging and histopathology remains the gold standard for diagnostic confirmation. We present a retrospective analysis of adrenal tumours treated in past 2 years in our unit. A sincere effort has been made to study the adrenal swellings and to find out the most common pathologies associated.

KEYWORDS

Adrenal, Supra-renal Gland, Swellings, Pathology, Surgery.

Introduction:

The adrenal gland neoplasms include primary and metastatic malignant tumours. Incidence of adrenal gland tumours is approximately 5%. Four Tumours arising from adrenal cortex are adrenal adenoma, carcinoma and tumours of adrenal medulla are pheochromocytoma, neuroblastoma, ganglioneuroblastoma and ganglioneuroma. Rare tumours consist of myolipoma, adrenal cyst, adenomatoid tumour, mesenchymal tumours, sarcoma, malignant lymphoma and melanoma. The incidence of adrenal incidentaloma is about 20%.^{1,2,3} They can be functional or non-functional and also detected as incidentaloma lesions. Advanced imaging often reveals adrenal tumours and tumour-like conditions in both symptomatic and asymptomatic patients. Even with the functional study and advanced imaging, preoperative diagnosis is always challenging. The adrenal glands description and its physiology were described 500 years ago. In 1850, Thomas Addison¹ and Charles Brown-Sequard² proved the mineral and cortical function and described the adrenal disorder and its surgical management. Adrenal tumours can be benign and malignant lesions. These tumours can be either functional or nonfunctional. Malignant lesions can be primary or extra adrenal. Adrenal incidentaloma incidence is rising due to increased use of imaging modality in current era. Adrenal tumours can be asymptomatic or symptomatic in the form of tumour related or functional. These tumours are removed surgically in view of risk of malignancy and hormonal disturbances.³ Even with the functional study and advanced imaging, preoperative diagnosis is always challenging and histopathology remains the gold standard for diagnostic confirmation. We present a retrospective analysis of adrenal tumours treated in past 2 years in our unit. A sincere effort has been made to study the adrenal swellings and to find out the most common pathologies associated.

Aims and Objectives:

To study the adrenal swellings and to find out the most common pathologies associated.

Materials and Methods:

This study was done in the Department of Urology, Travancore Medical College, Kollam

Total 21 adrenalectomies were done in our unit between July 2009 and April 2017. These cases were studied for clinical presentation and correlation with radiological and pathological investigation. Baseline hormonal assessment was evaluated by serum potassium, serum cortisol, serum DHEA, serum aldosterone, urinary 24 hrs. metanephrine and VMA levels. All cases evaluated with contrast-enhanced CT imaging. Postoperative adrenal specimens were analysed histopathologically by gross pathology, light microscopy and IHC evaluation.

Results:

Table 1: Most common Histopathological Reports

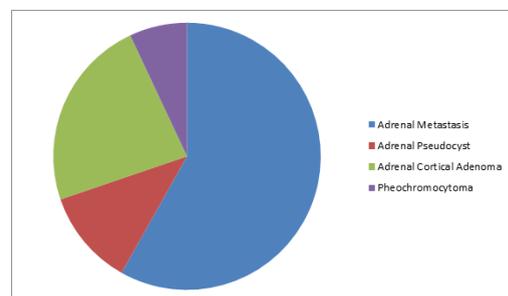
Histopathology	Frequency
Adrenal Metastasis	10
Adrenal Pseudocyst	2
Adrenal Cortical Adenoma	4
Pheochromocytoma	5

Table 2: Correlation and Significance

Metastasis	X-Value	P-Value
10	0.671	0.042

This is statistically Significant.

Image 1:



Discussion:

In our study, both patients were females with mean age of 40 yrs., evaluated for hypertension and had raised catecholamines. Most common symptoms were headache followed by palpitation and sweating. On imaging, well-defined heterogeneous enhancing lesion with mean size of 6.5 cm was identified with no signal drop out and no evidence of calcification or invasion. No discrepancy observed in pre and postoperative diagnosis. The adrenal glands are a common site of metastases. It is suspected when patients with a history of malignancy are found to have adrenal incidentaloma. Renal cell carcinoma, breast cancer, medullary thyroid carcinoma, contralateral adrenocortical carcinoma, gastrointestinal malignancies, prostate adenocarcinoma, cervical cancer, basal cell, pancreatic tumours, cholangiocarcinoma, urothelial carcinoma, squamous cell carcinoma, seminoma, thymoma, chronic myelogenous leukaemia and other malignancies can all exhibit metastatic deposits within the adrenals.⁹ Bilateral and bulky disease (>4 cm) is necessary to produce biochemical evidence of adrenal insufficiency. Our patient was a 75-year-old female with preoperative diagnosis of adrenocortical carcinoma with bone metastasis on imaging underwent CT-guided biopsy, which showed of

adenocarcinoma metastasis. Jebmh.com Original Research Article J. Evid. Based Med. Healthc., pISSN- 2349-2562, eISSN- 2349-2570/ Vol. 4/Issue 36/May 04, 2017 Page 2174 Histopathologically, diagnosis was confirmed as a 6 x 4 cm mass probably metastasised from adenocarcinoma. Initial imaging diagnosis was made in view of enhancing lesion with vertebral metastasis and later confirmed as adrenal metastasis. Adrenal cyst account for 1% to 22% of incidentally detected adrenal lesions.⁷ An increased incidence of adrenal cysts has been noted in women with a peak incidence between the third and sixth decades of life. Pseudocysts and endothelial adrenal cysts are the most common types. Most of the lesions were associated with malignancy. It is difficult to distinguish a benign adrenal cyst from cystic adrenal neoplasms. Cystic adrenal neoplasms tend to be larger (>7 cm) and have thicker walls. Adrenal cysts that are heterogeneous, large, thickwalled or symptomatic warrant further evaluation and surgical excision in risk of malignancy.

Conclusion:

There exist discrepancy (42%) between the radiological and final histopathological findings. No discrepancy was noted in pheochromocytoma cases. Even though, imaging can aid in diagnosis, histopathology still remains as gold standard investigation in adrenal tumours.

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