ADRENAL INCIDENTALOMA - A CASE REPORT

R. Chandru*, Ramya Ramakrishnan

Department of General Surgery, Sri Ramachandra Medical College & Research Institute, Porur, Chennai -600116.

ABSTRACT

The prevalence of adrenal incidentaloma ranges between 1 to 9 percent. Such an entity is attributed to the technological advances in the current decade. A 41 yr old female presented with a right adrenal incidentaloma which was surgically managed owing to the massive size. An approach to the evaluation and management of adrenal incidentaloma is emphasized in order to optimize the outcome in such patients.

Keywords: Adrenal, Adrenal cyst, Functional tumors, Incidentaloma.

SRJM 2014;7:29-31

INTRODUCTION

Incidentalomas are incidental radio graphical findings with mass lesions of varying sizes.[1] The incidence of adrenal incidentaloma is 8.7%[2] and adrenal cysts vary between 0.064% and 0.18%[3] in autopsied patients. They vary from the benign cysts to truly malignant tumors and may occur at any age group, they are however, more common in the 4th decade. They can be either a functioning or a non functioning tumor. This incidental finding occurs in 0.4% of all the computed tomography (CT) scans[4] and 4.4% of higher resolution scanners with a relatively higher prevalence of 10% in older patients.

CASE REPORT

A 41 yr old female visited the hospital with complaints of dyspepsia for the past 3 months. She was investigated elsewhere for the dyspeptic symptoms and was found to have a right adrenal cyst on screening ultrasound. Her menstrual history was unremarkable. Systemic examination was normal with stable vitals. She was normotensive with no significant fluctuations in the blood pressure charting. Abdomen examination showed no evidence of organomegaly.

All the laboratory parameters were within normal limits including electrolytes. Her 24 hour urinary Vanillylmandelic acid (VMA) was 2.3 (ref. value <13.6mg/day) and serum metanephrine was 20.8 (ref.value <90pg/ml). Upper gastrointestinal endoscopy showed a lax lower esophageal sphincter tone. A repeat ultrasound confirmed a cystic mass of 15x16 cm occupying the right supra renal region suggestive of adrenal origin. Contrast enhanced computed tomography confirmed the sonological findings [Fig.1] with CT washout value of >60% and HU of 8. The patient was taken up for surgery even though it was a non functioning tumor, in view of the large size. Laparoscopic approach was deferred owing to the large size of the mass. Thus patient underwent a laparotomy through a Cheveron incision and right adrenalectomy was done [Fig.2]. Specimen was sent for histopathological study, which revealed a benign adrenal cyst of lymphatic origin composed of multilocular spaces filled with eosinophilic material [Fig.3]. The patient was discharged

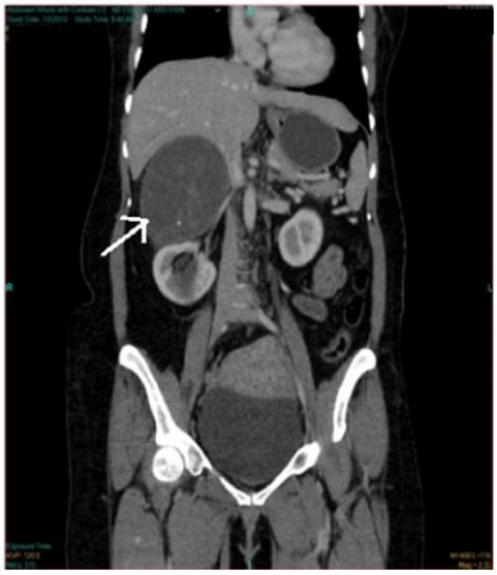

Fig.1: Contrast enhanced computed tomography Abdomen (Coronal view)

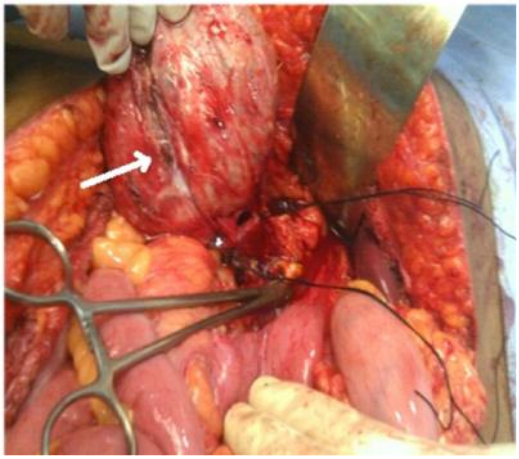

Fig. 2: Intra operative - Adrenal Mass

CORRESPONDING AUTHOR

***Dr.R.CHANDRU M**

Department of General Surgery, Sri Ramachandra Medical College & Research Institute, Porur,
Chennai - 600116, Tamil Nadu.
Email id- chandru684@gmail.com

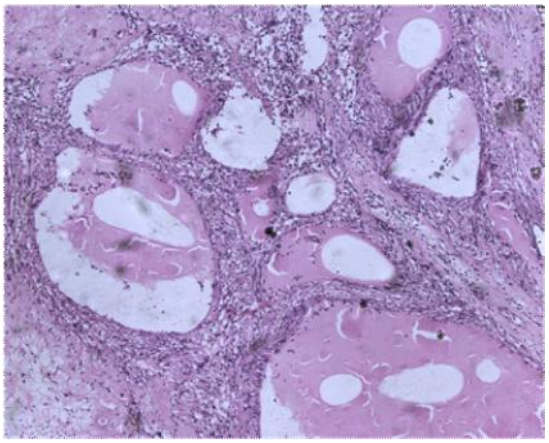

Fig. 3: Histopathology slide - Adrenal Cyst-Low power view of the adrenal cyst composed of multilocular spaces filled with eosinophilic material.

on the 7th post operative day and is doing well on her review, three months later.

DISSCUSSION

Adrenal incidentaloma is a mass lesion greater than 1cm in diameter which is an incidental radio graphical finding.[1] They may be either functioning or non-functioning in type. Most of the patients are asymptomatic; however it is important to look for subtle signs of functioning, malignant and metastatic tumors.

Adrenal incidentaloma can be of different pathology, ranging from the non-functioning type which constitutes 78%, Cushing's adenoma (7%), adrenocortical tumor (4%), pheochromocytoma (4%), Myelolipoma (2%), cysts (2%), metastasis (2%) and Conn's adenoma (1%).[4] A detailed history is necessary to differentiate between the types, such as history of headaches, weight loss, anxiety attacks, sweating, cardiac arrhythmias, or palpitations for patients with pheochromocytoma; history of weight gain, easy bruisability, severe hypertension, diabetes, virilization, proximal muscle weakness, or fatigue for Cushing's adenoma; presence of hypertension, fluid retention, or a history of hypokalemia for aldosteronism; history of recent weight loss, and a smoking history for metastatic lesions.

Histological classification of adrenal cysts includes four groups namely parasitic, epithelial, endothelial and pseudo cystic types. True cysts of the adrenal gland usually present with epithelial or endothelial lining unlike the pseudocysts. Endothelial cysts commonly manifest as lymphatic type which is secondary to developmental anomaly.

The actual frequency of primary adrenal carcinoma in patients with adrenal incidentaloma is approximately 2 to 5 percent and another 0.7 to 2.5% has non adrenal metastases to the adrenal gland.[5] There was a significant correlation between the size and occurrence of adreno-cortical carcinoma, with 90% being more than 4cm in diameter when discovered. A 4cm cut off had a 93% sensitivity of detecting adrenocortical carcinomas.[6] However adrenal mass size alone should not be used as the parameter for guiding treatment. If an adrenal mass measures <10HU on plain computed tomography, the likelihood that it is a benign adenoma is nearly 100%.[7] The usefulness of fine needle aspiration biopsy to distinguish a benign adrenal mass from adrenal carcinoma is limited, however, can differentiate a metastatic lesion from primary adrenal tumour.[8]

The indication for operative intervention of adrenal cysts are size (cysts with 6 cm in diameter or more), symptomatic cysts, functional cysts and cysts that are suspicious for malignancy (as determined by imaging studies). Adrenalectomy may be done laparoscopically, endoscopically via the posterior approach, or as an open procedure.

The anatomical location of the adrenal gland has led to a number of laparoscopic approaches, including posterior or lateral retroperitoneal, transthoracic, and lateral transperitoneal. Contraindications for laparoscopic approach include tumors larger than 12 cm likely containing malignancy and local tumor invasion into adjacent structures. Debate still remains regarding the utility of laparoscopic approach for metastatic adrenal disease and adrenocortical carcinoma.[9] Transabdominal route is recommended in cases of large (>10 cm) adrenal masses, including those benign imaging features, as the adrenal mass may be diagnosed as malignant on a definitive histologic review.[10]

CONCLUSION

Adrenal incidentaloma are relatively uncommon but still have to be kept in mind in the differential diagnosis of abdominal masses. Ultrasound imaging is a valuable tool in the diagnosis of the cyst although CT imaging studies are of definitive value. Functional cysts of the adrenal gland require screening for the serum catecholamines and urinary VMA to arrive at the diagnosis. Patients with adrenal incidentalomas who do not fulfill the criteria for surgical resection need to have radiographic reevaluation at 3 to 6 months and then annually for 1 to 2 years. For all adrenal masses more than 10cm, including those masses with benign imaging phenotypes, open adrenalectomy is preferred to laparoscopic approach.

REFERENCES

1. Young WF Jr. Clinical practice. The incidentally discovered adrenal mass. N Engl J Med 2007;356:601-10.
2. Kloos RT, Gross MD, Francis IR, et al. Incidentally discovered adrenal masses. Endocr Rev 1995;16:460-84.
3. Rozenblit A, Morehouse HT, Amis ES, Jr. Cystic adrenal lesions: CT features. Radiology 1996;201: 541-48.
4. Herrera MF, Grant CS, van Heerden JA, Sheedy PF, Ilstrup DM. Incidentally discovered adrenal tumors:

an institutional perspective. Surgery 1991; 110:1014-21.

5. Cawood TJ, Hunt PJ, O'Shea D, Cole D, Soule S. Recommended evaluation of adrenal incidentalomas is costly, has high false-positive rates and confers a risk of fatal cancer that is similar to the risk of the adrenal lesion becoming malignant; time for a rethink? Eur J Endocrinol 2009;161:513-27.
6. Angeli A,Osella G,Ali A, Terzolo M.Adrenal incidentaloma : An overview of clinical and epidemiological data from the National Italian Study Group.Horm Res 1997 : 47:279.
7. Grumbach MM, Biller BM, Braunstein GD, Campbell KK, Carney JA, Godley PA, et al. Management of the clinically inapparent adrenal mass ("incidentaloma"). Ann Intern Med 2003;138:424-9.
8. Mazzaglia PJ, Monchik JM. Limited value of adrenal biopsy in the evaluation of adrenal neoplasm: a decade of experience. Arch Surg 2009;144:465-70.
9. Matthew J. Mellon, Amanjot Sethi, Chandru P. Sundaram. Laparoscopic Adrenalectomy: Surgical techniques. Indian Journal of Urology 2008; 24: 583-9.
10. Porpiglia F, Fiori C, Daffara F, Zaggia B, Bollito E, Volante M, et al. Retrospective evaluation of the outcome of open versus laparoscopic adrenalectomy for stage I and II adrenocortical cancer. Eur Urol 2010;57:873–8.