ISSN: 0975-8585

Research Journal of Pharmaceutical, Biological and Chemical Sciences

Incidental Adrenal Cortical Adenoma: A Case Report.

R.S. Gayathri Priyadarshini*, Hemalatha Ganapathy and B.O.Parijatham.

Department Of Pathology, Sree Balaji Medical College, Bharath University, Chrompet,Chennai, Tamil Nadu, India.

ABSTRACT

A benign incidental non functioning adrenal cortical adenoma is presented. The case we reported belongs to the benign category as per the criteria proposed by Weiss. Adrenal cortical tumors(ACT) are usually unilateral and common in female patients in 40-60 years age group . We are reporting a case in a male patient of age 28 who presented with hypertension. All blood investigations and 24 hours Urinary VMA & Metanephrines were within normal limits. Hypertension not related to the mass. There is no recurrence of the tumour in the last six months follow up. The case is presented for its rarity.

Keywords: Adrenal cortical adenoma

Corresponding author

ISSN: 0975-8585

Case Report

A 28 year old male came with complaint of uncontrolled Hypertension for 1 year along with frequent Headaches, Palpitations /Giddiness , increased sweating and occasional Anxiety.

He was on multiple drugs for hypertension and also on Eltroxin 150mcg for hypothyroidism. He was evaluated by a physician, elsewhere, and found to have left adrenal mass lesion. He was referred to our hospital for further management.

Clinically he was well built and nourished. Not Anemic or jaundiced. No pedal edema . No features suggestive of Cushing syndrome . Physical examination showed normal signs.

Investigations for various tests like Blood Sugars, Renal function test, Serum Electrolytes were normal.

24 hours urine V. M. A - 9.19 mg/24Hrs (Reference range upto 15.0 mg /24Hrs).

24 Hrs Urine Metanephrine - 94.52ug/day (Reference range upto 374.7).

CT Abdomen Showed A Well Defined Lesion Measuring 33mm ×28mm Involving The Lateral Limb Of Left Adrenal Gland, Probably Adenoma.

Colour Doppler Study Of Both Renal Arteries Showed No Haemodynamically Significant Renal Artery Stenosis.

Diagnosed as Left Adrenal Mass Lesion.
Hence Laproscopic Adrenalectomy under GA was done.

We in pathology department received adrenalectomy specimen measuring 4x2x2.5cm, partially showing disruption of capsule with irregular surface. Cut surface yellowish brown with yellowish orange specs and nodules, Capsule intact in 60% of the periphery and Adjacent fat measuring 4x2x1cm.

Histopathologic report: Sections show the structure of adrenal gland with a capsulated neoplasm composed of oval to polygonal cells with abundant eosinophilic cytoplasm and uniform dark staining nuclei arranged in acinar and trabecular pattern in a background of thin fibrous stroma. Focally the cells show dark eosinophilic granular cytoplasm. Focal areas show cystic degeneration, hyalinization and stromal edema with myxoid areas. No evidence of mitosis or nuclear atypia seen.

DISCUSSION

Adrenal cortical tumors(ACT) are usually unilateral and common in female patients in 40-60 years age group (1). These tumors have an incidence of 1 per million population (2). The cause of adrenal adenomas is unknown, but the current accepted theory is that they arise because of p53 germline mutation. Rarely *menin* gene mutations and a few GNAS1 mutations seen in sporadic ACT.(3). These tumors are usually small and increases in size with age (4). Adrenal tumors are categorised as functional or non functional and further benign and malignant. Most of these tumors are benign and non functional and hence found incidentally during imaging or during autopsy(incidence 1-32% autopsy)(5).

The adrenal mass should be evaluated and determined if it is benign or malignant and functional or nonfunctional, in order to determine treatment options. In 43% of cases, hypertension is a common symptom (3). Other hormone associated syndromes are Hyperaldosteronism, Cushings syndrome, Adrenogenital syndrome (6).

There are various studies which showed the size of the tumor can be used as a marker of malignancy along with various clinical parameters(4). Benign adrenocortical tumors, with a diameter of 3–3.5 cm are common (5). The following staging criteria is adopted for ACT [3]:

Stage I : Tumour totally excised, tumour volume <200 cm3, absence of metastasis, normal hormone levels after surgery.
Stage II : Microscopic residual tumour, tumour >200 cm3, tumour spillage during surgery or persistence of abnormal hormone levels after surgery.
Stage III : Gross residual or inoperable tumour
Stage IV : Distant metastasis

Investigation

Clinicians need to know before surgical intervention if the lesion they are dealing with is benign or a malignant one, as adrenocortical carcinomas are usually associated with a dismal prognosis. Both CT and magnetic resonance imaging (MRI) are useful in evaluation; CT is currently regarded as the most accurate imaging modality for the preoperative localization of these tumors. Besides signs of local invasion, lymphadenopathy, distant metastasis and few other imaging parameters, size of the tumor remains to be one of the most important pre-operative predictor in making such differentiation. Laboratory evaluation for patients suspected of having ACT includes measurement of various hormonal levels to assess its functional capacity (4). This comprehensive panel of tests not only contributes to the diagnosis, but also provides useful markers for the detection of tumour recurrence. Urinary 17-KS frequently provide the pivotal clue to a diagnosis of ACT(7). Plasma DHEA sulfate levels are abnormal in 90% of cases of ACT and serve as a second sensitive tumour marker. Urinary 17-OHCS levels are elevated in all cases with clinical signs of excessive glucocorticoids. (3)

Tumours larger than six cm are highly suspicious for malignancy and tumours between three and six cm represent diagnostic challenge for differentiation between benign and malignant ACT. To avoid misclassification of a small ACT as benign neoplasia, follow-up imaging is mandatory to detect early tumour growth and should be performed initially every 3-12 months. MRI with dynamic gadolinium enhanced- and chemical shift technique is equally effective as CT in distinguishing malignant from benign lesions(8).

The tumours show Low molecular weight keratin- strong positivity and weak positivity for Vimentin (6).

The differential diagnosis of these adrenal masses include: cortical adenoma, pheochromocytoma, aldosteronomas, metastatic lesions, adrenal cortical carcinomas, and a host of non neoplastic lesions (1).

Prognosis

These tumors generally carry a poor prognosis, commonly related to delayed diagnosis, particularly in nonfunctional ACs, as a tendency to grow rapidly and 82% of the patients already had dissemination of the tumor at the time of diagnosis. Common sites of distant metastasis included lung (71%), lymph node (68%), liver (42%), and bone (26%). Prognosis appears more favorable in patients with less than 50 years with localized disease, or non-functioning status, complete tumor resection may be associated with improved survival.

Ultimately, histopathological examination continues to be the benchmark for diagnosis.

In our case, the tumor was 4x2x2.5 cm in size. Referring to the criteria proposed by Weiss, the case we reported belongs to the benign category. There is no recurrence of the tumour in the last six months follow up. The case is presented for its rarity.

ISSN: 0975-8585

Figure 1:Gross image

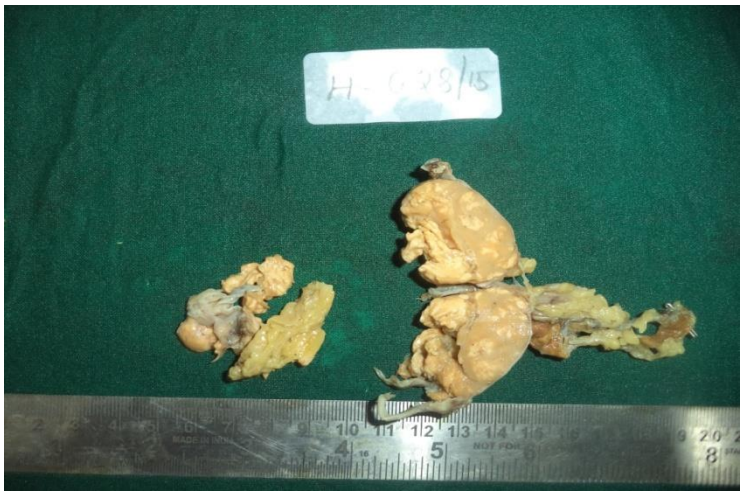
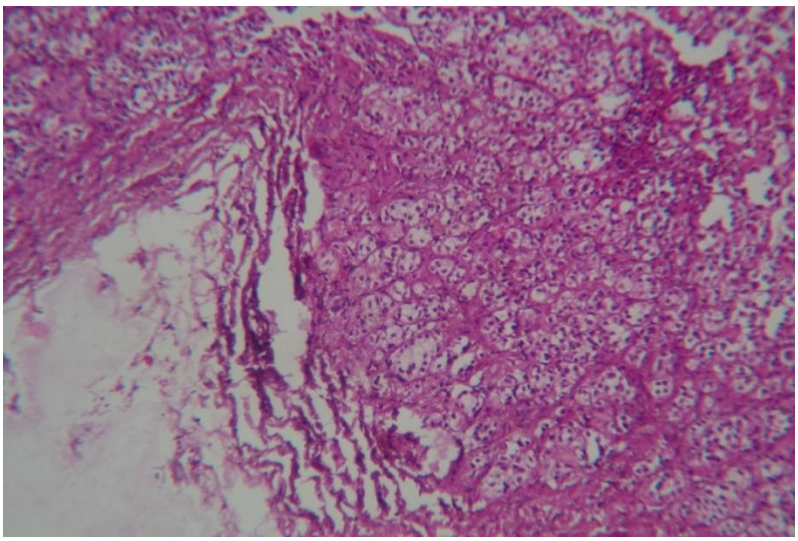


Figure 2

Figure 3



ISSN: 0975-8585

Figure 4

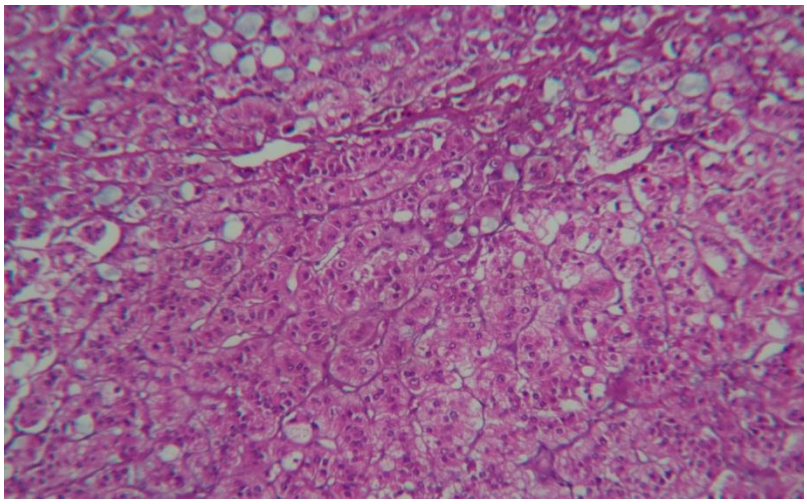


Figure 5

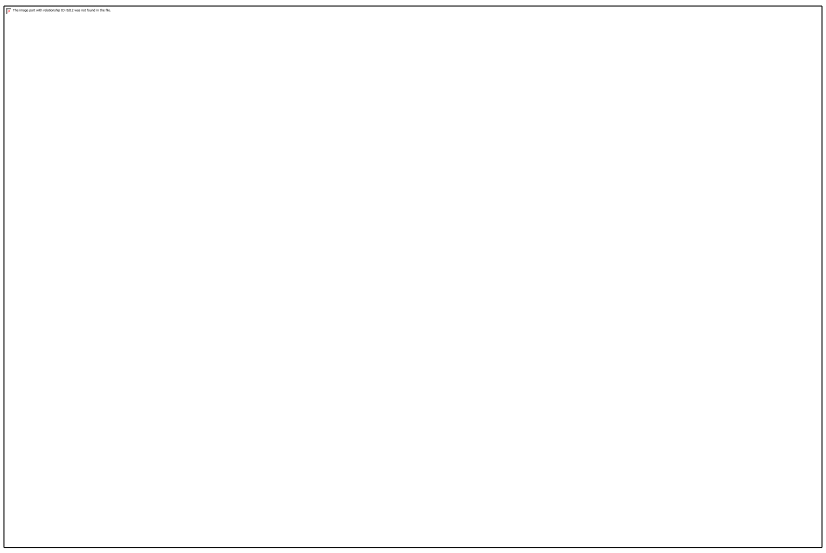
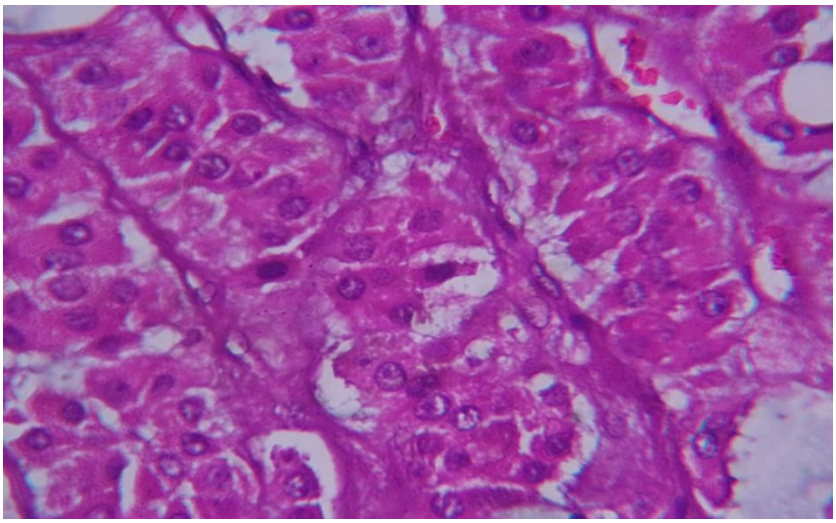


Figure 6



ISSN: 0975-8585

Figure 7

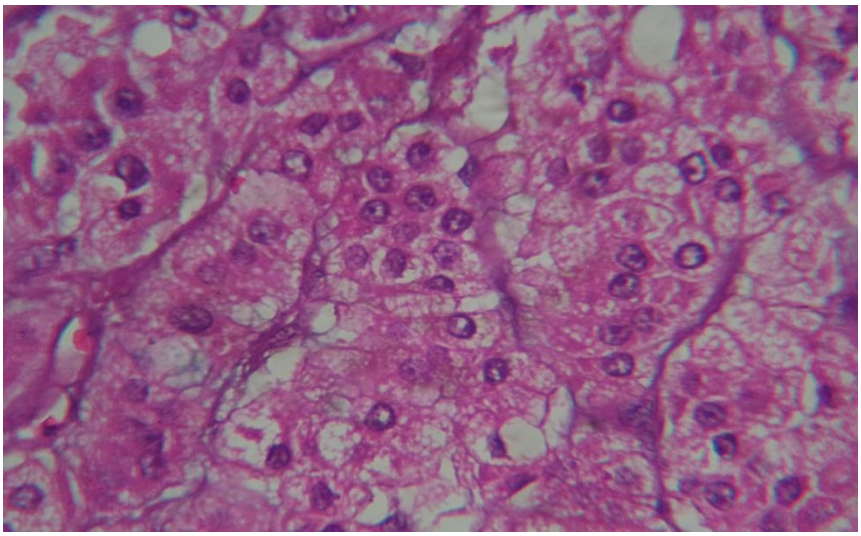


Figure 8

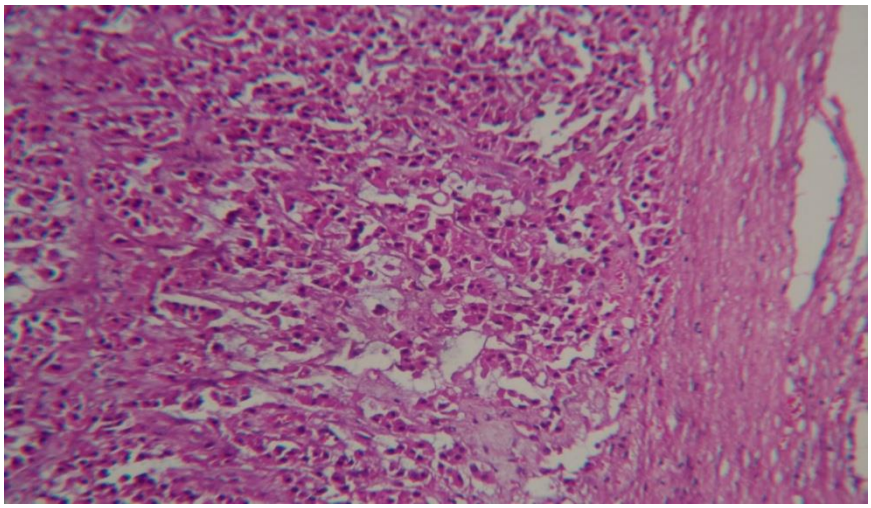
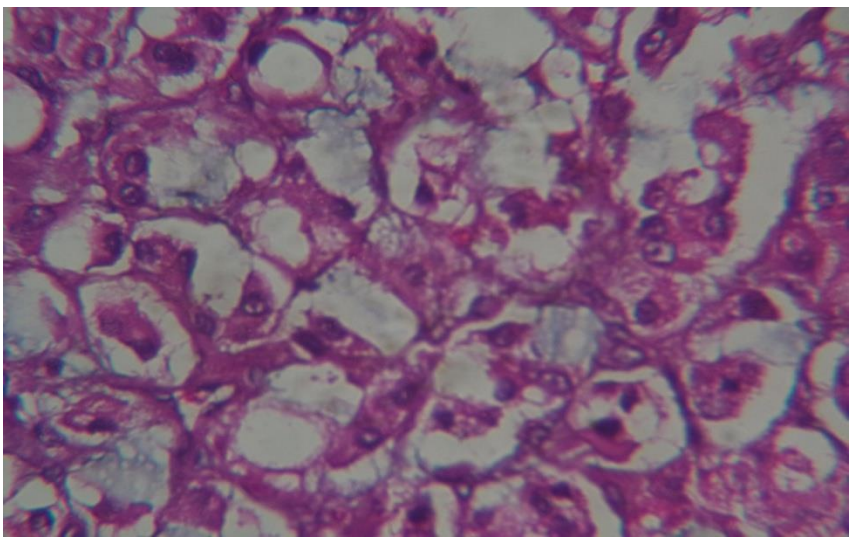


Figure 9:



ISSN: 0975-8585

REFERENCES

1. P Kaur, A Chauhan, G Singh, S Kataria, S Mathur. Incidentally Discovered Nonfunctioning Adrenal Cortical Carcinoma: A Case Report And Review Of Literature. The Internet Journal of Third World Medicine. 2008 Volume 7 Number 2. DOI: 10.5580/2980 .
2. Aparna, C., et al. "Adrenocortical carcinoma: Report of two cases." *Indian journal of endocrinology and metabolism* 15.3 (2011): 217.
3. Prasad, A. N. "Functional adrenocortical tumour in young." *Medical Journal Armed Forces India* 66.3 (2010): 269-271.
4. Gupta M, Ankit S, and S.M.Rajendran. "Unusually Large Functional Adrenal Adenoma: A Rare Case Report with Review of Literature." JIMSA April-June 24.2 (2011) : 77-78 .
5. Li, Baozhong, et al. "Giant non-functional adrenal adenoma: A case report."*Oncology letters* 5.1 (2013): 378-380.
6. Baudiz J, Quinkler M, Beyersdroff D, Wermke W. Improved detection of hepatic metastasis of adrenocortical cancer by contrast enhanced ultrasound. Oncol Rep.2008 May; 19(5)1135-9.
7. Wajchenberg BL, Albergavia Pereira MA, Medonca BB, Latronico AC etal. Adrenocortical carcinoma: clinical and laboratory observation. Cancer 2000 Feb 15; 88(4):711-36.
8. Coen JJ. Adrenal gland: In: Perez and Brady; Principles and Practice of Radiation Oncology, 5th ed. Welters Kluwer: Lippincott Williams & Wilkins 2001:1770-85