IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)
e-ISSN: 2279-0853, p-ISSN: 2279-0861.Volume 20, Issue 1 Ser.3 (January. 2021), PP 25-28
www.iosrjournals.org

Analytical Study of Histomorphological Features of Adrenal Tumours-An Instituitional Experience

Dr.C.Srilekha (IIIyr PG), Dr.Trsn Lakshmi(Resident), Dr.G.Baleswari
(Prof & Hod)- Kurnool Medical College, Kurnool.

ABSTRACT:
INTRODUCTION:
Adrenal lesions are relatively rare arising from a composite gland. It produces various benign and malignant tumours which require detailed examination and expertise for diagnosis.
AIMS &N OBJECTIVES:
To signify the role of histomorphology and its related scoring systems in the diagnosis of various adrenal tumours.
MATERIALS AND METHODS:
It is a 2 yr study conducted in the department of pathology, Kurnool Medical college from July 2017 to June 2019.
RESULTS:
A total of 20 adrenal specimen were received with female preponderance and a mean age of 40yrs with pheochromocytoma being the commonest among them.

Date of Submission: 26-12-2020 Date of Acceptance: 07-01-2021

I. Introduction

Adrenal tumours are relatively rare arising from a composite gland comprising of cortex and medulla which require a detailed morphological analysis along with specified applicable criteria for an accurate diagnosis.

II. Materials And Methods

The present study is conducted in the dept. of Pathology in Kurnool medical college, Kurnool in collaboration with endocrine, urology, radiology, biochemistry departments. All the specimens received were thoroughly processed, sectioned and stained with routine H & E staining.

III. Results:

In this study of 2 yr period, 8000 surgical specimens were received among which 20 belonged to adrenal . Mean age recorded was 40 with female preponderance.

10 among those 20 adrenal specimens were pheochromocytoma cases for which size, colour of the cut section were given a focus along with the clinical criteria of hypertension and others. Almost, all of them showed elevated catecholamine levels.

4 cases of Neuroblastoma, 2 cases of ganglioneuroblastoma, an each case of adrenocortical adenoma, carcinoma, mixed tumour, metastasis were received.

Radiological findings were of key importance as most of the cases were incidentally found.

Table 1-Incidence of adrenal tumours

Adrenocortical	Adenoma(1),Carcinoma(1)
Medullary	Pheochromocytomas(10),Ganglioneuroblastomas(2),Neuroblastomas($)
Mixed	AOC with Pheochromocytoma(1)
Others	Metastasis

IV. Discussion:

A bipartite adrenal gland produces both cortical and medullary tumours which have diversified presentations and morphological features. Few-of them need specific criteria like Weiss to differentiate between benign and malignant counter parts.

Adrenocortical – benign vs malignant:

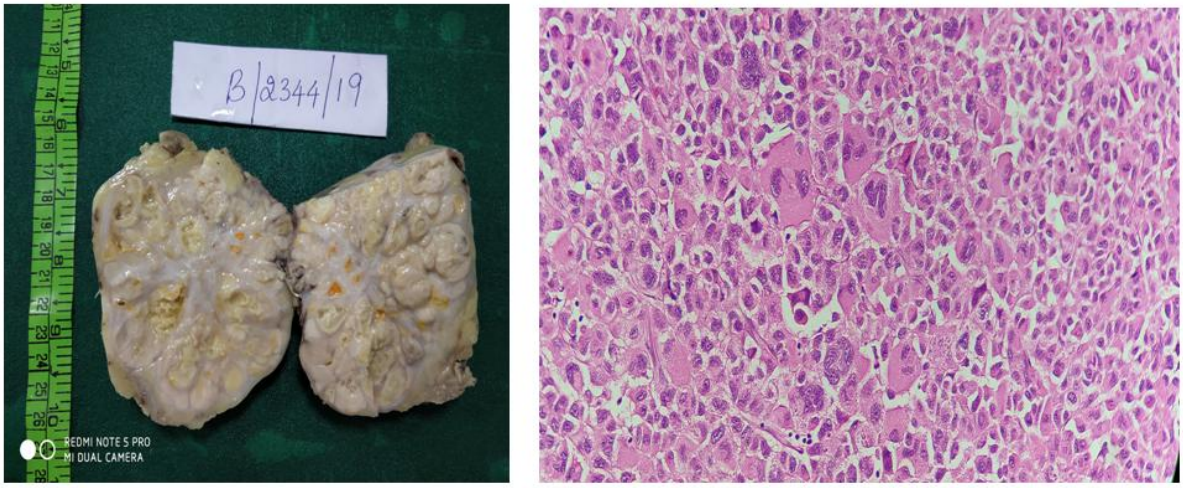
It has become a challenge to differentiate benign and malignant adrenal tumours due to early diagnosis of tumours with advanced imaging technology and in these cases, morphology alone plays a major role in diagnosis.

In this study, we encountered a case of cortical adenoma which needed a clear-cut differentiation from its counterpart carcinoma which was another case we received. Both of the above cases shared similar gross details. Modified Weiss criteria helped for diagnostic confirmation.

Table 2- Modified Weiss criteria

S.NO	CRITERIA	SCORE
1	Mitosos(>5/50hpf)	2
2	Atypical mitosis	1
3	Clear cell area(<25%)	2
4	Necrosis	1
5	Capsular invasion	1

A score >3 is required for the confirmation of carcinoma diagnosis. In this case, a score of 7 was found.



igure 1,2- Gross cut-section and microscopy of Adrenocortical carcinoma

MEDULLARY TUMOURS:

8 cases with similar gross features of large size ,homogenous tan brown cut-section, solid consistency were received. Morphologically classic Zell ballen pattern was identified featuring them as Pheochromocytoma.

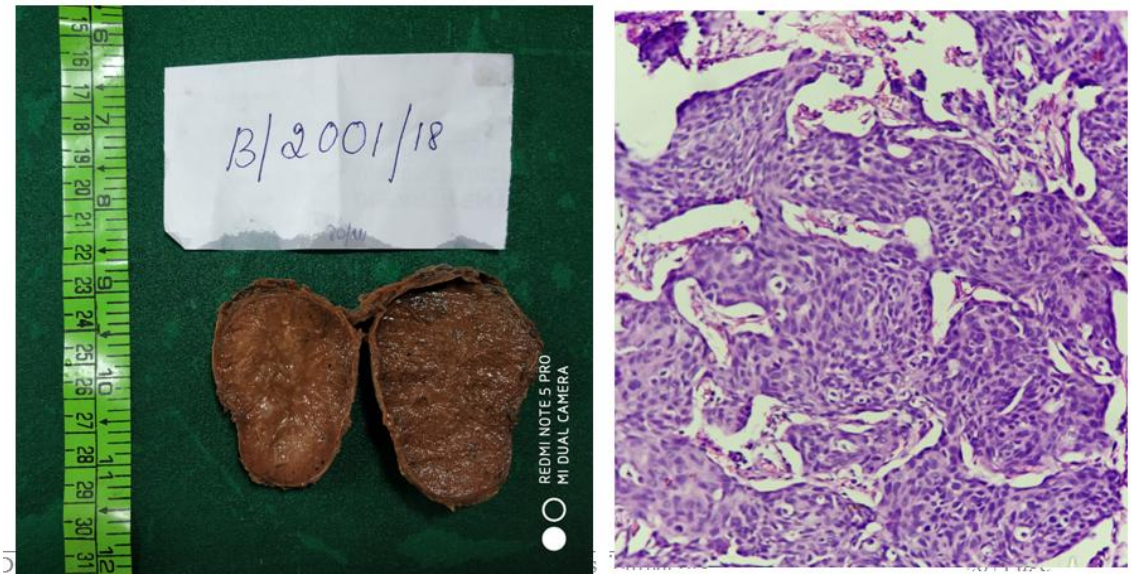
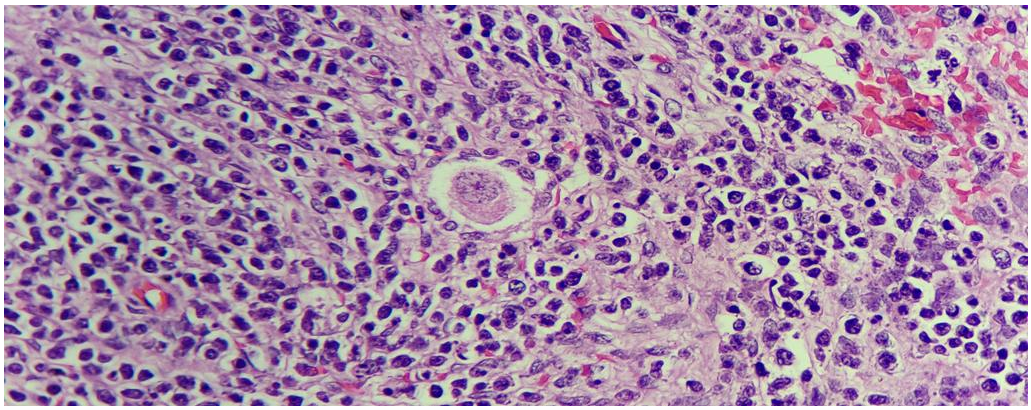


Figure 3,4- Gross cut-section and microscopy of Pheochromocytoma

4 cases showed morphological features consisting of pseudorosettes and other primitive cell architecture giving it a diagnosis of Neuroblastoma.
2 cases were grossly similar to the above neuroblastoma cases but histologically showed presence of ganglion cells in addition to the classic features , therefore a diagnosis of ganglioneuroblastoma was made.



igure 5- Ganglion cell in ganglioneuroblastoma

1 case of metastasis with previous history of pancratic adenocarcinoma showed morphological features of presence of back to back glandular structures with normal adrenal pushed to periphery.

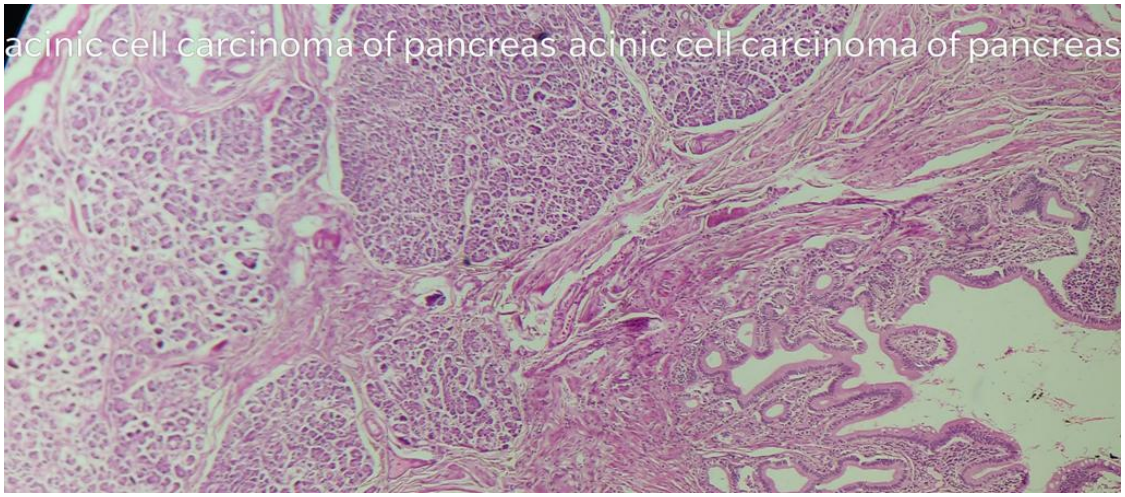


Figure 6- Metastatic deposit showing gland like structures invading adrenal tissue

A particular mass received showed a mixed features of 2 different tumours with clear margin between them observed under microscope for which a diagnosis of collision tumour was given.

V. Conclusion

Adrenal tumours though are rare can be diagnosed easily with histology alone with the help of specific required scoring systems with minimum help of additional diagnostic technology.

References:

[1]. N. Sreemani Kumari, Annapoorna Sireesha, K. Jayashree, O. Shravan Kumar. Spectrum of histomorphological patterns of adrenal tumors: A one year study at Gandhi Hospital, Hyderabad - A tertiary referral centre. IAIM, 2016; 3(7): 77-86
[2]. Madabhushi V et al. Int J Res Med Sci. 2016 Apr;4(4):1242-1247
[3]. George T Griffing. Adrenal Incidentaloma: Background, Anatomy, Pathophysiology. emedicine. medscape. com/article/116587 – Overview
[4]. Ng L, Libertino JM. Adrenocortical carcinoma: Diagnosis, evaluation and treatment. J Urol 2003;169:5-11
[5]. Jain M, Kapoor S, Mishra A, Gupta S, Agarwal A. Weiss criteria in large adrenocortical tumors: A validation study. Indian J Pathol Microbiol 2010;53:222-6
[6]. Maitra A. The endocrine system. In: Kumar V, Abbas AK, Fausto N, Aster JC, editors. Robbins and Cotran Pathologic Basis of Disease. 8 th ed., Ch. 24. New Delhi: Elsevier; 2010. p. 1148-61.
[7]. David T Arnol, Jennifer Blumoff Reed, Kristina Burt. Evaluation and management of the incidental adrenal mass. Proc (Bayl Univ Med Cent), 2003; 16(1): 7–12

[8]. Manger WM. An overview of pheochromocytoma: history, current concepts, vagaries, and diagnostic challenges. Ann NY Acad Sci., 2006; 1073: 1-20
[9]. Mukherjee G, Datta C, Chatterjee U, Sengupta M, Chatterjee G, Bera M, Chowdhury S. Histopathological study of adrenocortical masses with special references to Weiss score, Ki-67 index and p53 status. Indian J Pathol Microbiol 2015;58:175-80
[10]. McNicol AM. Update on tumours of the adrenal cortex, phaeochromocytoma and extra-adrenal paraganglioma. Histopathology 2011;58:155-68
[11]. Jain M, Kapoor S, Mishra A, Gupta S, Agarwal A. Weiss criteria in large adrenocortical tumors: A validation study. Indian J Pathol Microbiol 2010;53:222-6.

Dr.C.Srilekha, et. al. "Analytical Study of Histomorphological Features of Adrenal Tumours-An Instituitional Experience." *IOSR Journal of Dental and Medical Sciences (IOSR-JDMS)*, 20(01), 2021, pp. 25-28.