

Clinicopathological study of Brain tumours: A Retrospective Study

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Abstract

Introduction: Brain tumors are heterogeneous group of neoplasm, which include both benign and malignant cases. Brain tumors constitute only <2% of all neoplasms.

Materials and methods: A retrospective study of Brain tumour was carried out in our hospital over a span of one year in which 56 brain biopsies were evaluated.

Results: Among the 56 brain biopsies, 35(62.5%) were males and 21 (37.5%) were females with a male to female ratio of 1.66:1. Age of the patients ranged from 10 – 90 years. Mean age of presentation was 40 years. Most common presentation of brain tumor was headache (37.5%). Frontal lobe was the most common site involved in our study comprising 50% of cases. Most common tumor in our study was astrocytic tumor (23 cases, 41.0%) followed by meningioma(18 cases,32.1%). Among the astrocytic tumors, 11 cases were WHO Grade I, 05 cases were Grade II, 04 (22.22%) cases of astrocytoma were WHO Grade III and 03 (42.5%) cases were glioblastoma (Grade IV).

Conclusion: The present study highlights the clinicopathological aspects of brain tumour with emphasis on histopathological diagnosis which help in formulation of further management after neurosurgery.

Keywords: Brain, Histopathology, Astrocytoma, Meningioma.

Introduction

Brain tumors are heterogeneous group of neoplasm, which include both benign and malignant cases.¹ Brain tumors constitute only <2% of all neoplasms. Brain tumours cause approximately 2% of all cancer deaths. 60% to 80% of brains tumours are primary and rest 20% to 40% are metastatic.² Although some studies have been published regarding pathological pattern of brain tumors from different countries of the world and also from India, comprehensive clinicopathological studies from this part of India is lacking. Aims and objective: This study was done to determine the clinicopathological pattern of Brain tumours.

Materials and methods

A retrospective study of Brain tumour was carried out in our hospital over a span of one year in which 56 brain biopsies were evaluated. Data on clinical, radiological features of the cases were collected from all patients. All the biopsy samples were immediately put in 10% neutral buffered formalin followed by conventional tissue processing and embedding. Five micron thick sections were cut and slides were prepared. Each section was stained with Haematoxylin and Eosin stain and studied. The lesions were histologically categorized according to WHO classification.

Results

Among the 56 brain biopsies, 35(62.5%) were males and 21 (37.5%) were females with a male to female ratio of 1.66:1. Age of the patients ranged from 10 – 90 years. Mean age of presentation was 40 years. The youngest patient was a 25 year old female with meningioma with and the oldest patient was 86 year female with glioblastoma. Most common presentation of brain tumor was headache (37.5%) as shown in Table 1.

Table 1: Clinical presentations of brain tumour

Clinical Presentation	No of Cases	Percentage
Headache	21	37.5
Nausea and Vomiting	09	16.0
Cranial nerve palsy	04	7.14
Visual disturbance	03	5.35
Gait disturbance	05	8.92
Seizure	02	3.57
Vertigo	04	7.14
Sensory loss	03	5.35
Fever	05	8.92
Total	56	100

Frontal lobe was most common site involved in our study comprising 50% of cases.

Most common tumor in our study was astrocytic tumor (23 cases, 41.0%) followed by meningioma(18 cases,32.1%) as shown in table 2. Among the astrocytic tumors, 11 cases were WHO Grade I, 05 cases were Grade II, 04 (22.22%) cases of astrocytoma were WHO Grade III and 03 (42.5%) cases were glioblastoma (Grade IV).

Table 2: Histopathological findings in Brain biopsies

Lesions	No of Cases	Percentage
Astrocytic tumours	23	41.0
Oligodendroglial tumours	02	3.57
Ependymal tumours	01	1.78

Meningioma	18	32.1
Neuroblastic tumour	01	1.78
Pineoblastoma	01	1.78
Neurofibroma	02	3.57
Schwannoma	03	5.35
Lymphoma	02	3.57
Craniopharyngioma	01	1.78
Germinoma	01	1.78
Metastatic tumour	01	1.78
Total	56	100

Discussion

This study comprises of 56 cases of brain tumour. Most common symptom in our study was headache (37.5%). This was in accordance to the study done by Dhar A et al³ where the most common symptom was headache. The most common tumour in our study was astrocytoma followed by meningioma which is in concordance with the study done by Rajashree Pradhan et al⁴ where astrocytoma was the commonest finding.

Conclusion

The present study highlights importance of histopathological examination to find the true nature of the lesion. Brain biopsy plays an important role in the early diagnosis of brain tumour and provides an opportunity for a broad range of treatment options as well as potential for possible cure.

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