



ORIGINAL RESEARCH PAPER

Pathology

HISTOPATHOLOGICAL SPECTRUM OF BRAIN LESIONS IN PATIENTS ATTENDING TO RIMS, RANCHI – A RETROSPECTIVE STUDY

KEY WORDS: CNS lesions, histopathological examination and oligodendroglial tumour

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ABSTRACT

Background- The CNS space occupying lesions cause grave life-threatening outcomes irrespective of their nature as they grow in a confined space and are present close to vital structures Hence, it is of great importance to establish the accurate diagnosis for proper and timely neurosurgical intervention Tumours of central nervous system (CNS) are reported to be less than 2 % of all malignancies. In India, CNS tumours constitute about 1.9 % of all tumours. **Method -** A retrospective study carried out in RIMS hospital for all the brain tissue specimen that have come for the histopathological examination, for a duration of one year (February2021 - January2022) among 78 cases of CNS lesions collected from archives of Department of Pathology. **Results-** Astrocytoma was the most common entity followed by Meningioma while 2.56% cases were metastatic in this study sample. **Conclusion-** The present study helps to provide information regarding the disease burden in our area. This study attempts to categorise various CNS neoplasms as per recent WHO classification (2016) which has not only diagnostic implication but also has significant prognosis and predictive value.

INTRODUCTION:

The lesions arising in CNS are heterogenous with a wide spectrum of histopathological entities such as inflammatory, infectious, metabolic and neoplastic in origin. The neoplastic lesion includes both primary and secondary (metastatic). Tumors of the nervous system are the second most common form of cancer in children and the sixth most common form of cancer in adults^[1].

Approximately 4400 people are newly diagnosed with a brain tumour each year across the world. However according to the Indian council of medical research project CNS tumors are the second most common tumors in children between 0-14 years of age^[2]. The incidence is 16.6% in the world and it is around 11.3% in India.^[3]

The tumours of CNS are reported to be less than 2 % of all malignancies. In India, CNS tumours constitute about 1.9 % of all tumours.^[4] However the CNS tumours are associated with high morbidity and mortality which makes them the most dreaded form of cancer.^[5] The CNS space occupying lesions cause grave life threatening outcome irrespective of their nature. Reason behind this is because lesions grow in a confined space and are present close to the vital structures.^[6] The definitive diagnosis can only be confirmed by histological examination of brain tissue either by brain biopsy or open surgery. Management strategies and prognosis of tumor depends on the combination of factors like the type and grade of tumor, its location, size and state of development.^[7] Hence it is of great importance to establish the accurate diagnosis for proper and timely neurosurgical intervention.^[8]

METHODOLOGY-

A retrospective study was done in our department of pathology for a duration of one year. A total of 78 study subjects were enrolled in our study irrespective of age and sex. During this period all case that were sent from neurosurgery department after surgery for histopathological study of the brain tissue were included and then processed and H AND E staining is done. The sections were viewed under microscope and then reported.

RESULT AND OBSERVATION:-

1. Table of age wise incidence

AGE RANGE	NUMBER OF CASES	PERCENTAGE
0-10 years	03	3.8%

11-20 years	13	16.6%
21-30 years	07	8.9%
31-40 years	19	24.3%
41-50 years	19	24.3%
51-60 years	14	17.9%
61-70 years	03	3.8%

2. Table for sex wise distribution

Sex	Number of cases	PERCENTAGE
MALE	42	53.84%
FEMALE	36	46.15%

3. Table of various case wise incidence

Various Type Of Brain Lesion	Number Of Cases	Percentage
Meningioma	21	26.96 %
Astrocytoma	24	30.76 %
Oligodendrogloma	8	10.25 %
Ependymoma	3	3.85 %
Schwannoma	9	11.54 %
Medulloblastoma	4	5.12 %
Oligoastrocytoma	2	2.56 %
Hemangioblastoma	2	2.56 %
Granulomatous Lesion	2	2.56 %
Metastasis	2	2.56 %
Mucormycosis	1	1.28 %

DISCUSSION-

Brain tumors are a heterogenous group of neoplasm and the predominant types in the adult population are glial neoplasm, meningioma and metastasis. The degree of malignancy ranges from benign to aggressive. High morbidity and mortality are associated with these tumors, irrespective of their nature and histological grades. The incidence of brain tumour arise with the age range from less than 10 years to more than 60 years. It is more common between the ages of 41-50 years with a drop in incidence after 60 years. Our study shows more frequency between the age of 31-40 years and 41-50 years. Regarding the pediatric population in our study there were only 16 cases. These findings were similar to the finding of Masoodi et al. and Dhar et al. In the current study males were affected more than females with a ratio-1.6:1. Similar results are documented by Counsell et al. In the present study the most frequently encountered lesion was astrocytoma which accounted for 24 cases out of 78 cases (30.76%), followed by meningioma 21 cases (26.96%). It supports the previous studies by Masoodi et al and Aryal et al.

In our study the metastatic spread from a distant primary to the brain is 2.57% (2 out of 78 cases). The frequency of metastasis in our study is lower than that of various previous studies.

CONCLUSION:-

Tissue biopsy is a valuable diagnostic procedure. Aim of the study was to know the spectrum of brain lesion and their frequency. In our study Astrocytoma was the more common lesion. There is male predominance and the population between the age group of 31-50 years are most commonly affected.

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