INCIDENCE AND THE DISTRIBUTION OF BRAIN TUMOURS IN SOUTH INDIAN POPULATION

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ABSTRACT

INTRODUCTION

The incidence of intracranial [IC] tumours depends on the sources and methods used to collect the data and whether conditions such as tuberculomas, parasitic cysts and vascular malformations are included. The general consensus is that the annual incidence rate of primary intracranial neoplasm is between 10 and 12 per 100,000 and these constitute approximately 9% of all primary cancers. The presenting features of the case in the Department of Medicine which ultimately leads to the definitive diagnosis depend on the situation of the tumour. So in the present study a valiant effort has been put to help the fellow clinicians to diagnose by knowing the incidence and the common sites that the tumour presents.

The aim of the study is to:

1. To establish the incidence of different types of tumours encountered in the Department of Medicine.
2. To establish the site of the tumour.

Fifty patients were studied in the Department of Medicine, A. J. Shetty Institute of Medical Sciences, Mangalore. The surgical reference was taken and the type was confirmed by histopathology. So in the present study a valiant effort has been put to help the fellow clinicians to diagnose by knowing the incidence and the common sites that the tumour presents.

KEYWORDS

Incidence, Distribution, Brain, Tumours, Indian population.

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INTRODUCTION: The incidence of intracranial [IC] tumours depends on the sources and methods used to collect the data and whether conditions such as tuberculomas, parasitic cysts and vascular malformations are included. The general consensus is that the annual incidence rate of primary intracranial neoplasm is between 10 and 12 per 100,000 and these constitute approximately 9% of all primary cancers.[1] These figures, however may have to be revised upwards with the increasing cases of primary CNS lymphomas in recent years, primarily as a result of the AIDS pandemic. The pathogenesis of spontaneously occurring CNS neoplasms in man remains unknown. There is little evidence to suggest that environmental carcinogens, viruses, or trauma are involved, since the CNS is well-shielded from extraneous factors. Infrequently, ionizing radiation can trigger the formation of meningiomas, sarcomas, and rarely gliomas. This observation and the occurrence of primary CNS neoplasms in some inherited disorders, such as von Recklinghausen's disease, let to the identification of mutations of the p^{53} tumour-suppressor gene and deletions of chromosome 10 in glioblastomas,[2,3] loss of heterozygosity on chromosome 17p in astrocytomas, and loss of heterozygosity on 19q in anaplastic astrocytomas.[4] Like neoplasms elsewhere those in the CNS seem to require several small mutations to produce new clones of increasingly aggressive cells. This phenomenon helps of explain why a relatively benign astrocytoma may exhibit increasing degrees of anaplasia when it recurs. Other studies have focused on oncogenes, which, when activated, act as powerful mitogens.

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AIMS AND OBJECTIVES:

1. To establish the incidence of different types of tumours encountered in the Department of Medicine.
2. To establish the site of the tumour.

MATERIALS AND METHODS: Fifty patients were studied in the Department of Medicine, A. J. Shetty Institute of Medical Sciences, Mangalore. The surgical reference was taken and the type was confirmed by histopathology.

RESULTS: The work done consists of a clinicopathological study of 38 cases of intracranial neoplasms received in the department of pathology over a period of two years. The WHO classification is being followed to categories the tumours studies.[5]

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Types of tumour	No. of cases	%
Neuroepithelial tumours	16	32
Tumours of cranial nerves	4	8
Tumours of meninges	14	28
Lymphomas	2	4
Tumours of sellar region	2	4
Metastatic tumours	4	8
Pituitary gland tumours	8	16
Total	**50**	**100**

Table 1: Showing incidence of intracranial tumours

The most common of all tumours were those of the Neuroepithelial groups 16[32%]. Next in frequency were the tumours of meninges, which constituted 14[28%] of all intracranial tumours. The pituitary gland tumours were 3rd in frequency 8[16%] followed by tumours of cranial nerves 4 [8%], metastatic tumour 4[8%]. Two lymphoma cases and tumour of sellar region makes upto (4%) each.

Site	No. of cases	% Of Cases
Cerebrum	20	40
Meninges	14	28
Sellar	9	18
Cerebellum	3	6
CP angle	4	8
Total	**50**	**100**

Table 2: Showing site distribution of intracranial tumours

DISCUSSION:

Histological type	Present study	Banerjee et al, Chandigarh[6]	Pal AK and Chopra et al, Lucknow[7]	Dastur and Lalitha et al. Bombay[8]	Verma et al, Pune[9]	Katsura et al, Japan [10]	Fan et al, USA[11]
Neuroepithelial tumour	16	55.40	64.7	50.25	61.68	31.68	65.79
Cranial nerve tumours	4	6.80	5.0	9.77	4.95	11.85	2.83
Meningeal tumours	14	20.30	15.1	13.67	14.83	15.71	13.84
Tumours of sellar region	2	1.7	4.2	0.60	3.18	9.44	--
Lymphomas	2	--	--	0.60	0.71	-	--
Metastatic tumour	4	1.7	--	7.60	3.89	4.28	--
Pituitary tumour	8	3.4	7.6	6.95	7.6	10.84	9.69
Total	**50**	**177**	**100**	**1844**	**283**	**3367**	**16311**

Table 3: Showing incidence of CNS tumours in comparison with other series from India and abroad

There is no real study which indicate the site of the tumour to be compared.

CONCLUSION: So in the present study a valiant effort has been put to help the fellow clinicians to diagnose by knowing the incidence and the common sites that the tumour presents.

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