

# Surgical Outcome of Meningioma of Brain Tumours

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## ABSTRACT

**Background:** Meningioma is the most common tumor of neuroectodermal origin in humans. These are among the most common primary intracranial tumors and forms on membranes that cover the brain and spinal cord just inside the skull. Specifically, the tumor forms on the three layers of membranes that are called meninges.

**Aim:** To evaluate the surgical outcome of meningioma in brain tumours for applying different modalities of treatment.

**Methods:** This descriptive study included 30 patients of meningiomas brain. This was carried out at Department of Neurosurgery Unit-1, Lahore General Hospital Lahore from September 2010 to September 2012. Patients having meningioma's of brain were included. Those patients who having meningioma's of spine were excluded.

**Results:** There were 12 males and 18 females with mean age 44.47±4.76 years. Parasagittal was in 6 patients having excellent outcome and sphenoidal ridge was in 7 patients having good outcome.

**Conclusion:** Meningioma is the most common intracranial tumour in females than males.

**Key words:** Meningioma, Brain tumour, Parasagittal area

## INTRODUCTION

The word "meningioma" was first used by Cushing in 1922 to describe a tumor originating from the meninges<sup>1</sup>. As with virtual all other brain tumours, the etiology of meningiomas is unknown. Cases exist, however in which the tumour has risen under a fracture from an area of scarred dura, or around a retained foreign body<sup>2</sup>. Meningiomas are a different set of tumors arising from the meninges, the membranous layers adjacent the central nervous system<sup>1</sup>. They arise from the arachnoid "cap" cells of the arachnoid villi in the meninges<sup>3</sup>. These tumors are usually benign in nature; however, a small percentage are malignant<sup>4</sup>. In addition to increasing age, the most consistent factor associated with risk of meningioma is exposure to ionizing radiation; many other environmental, lifestyle and genetic risk factors have been studied with inconclusive results<sup>5</sup>. Brain tumors remain a significant cause of morbidity and mortality and are often refractory to treatment. The grading of brain tumor has an important implication in clinical management<sup>6</sup>.

Symptoms of meningiomas are variable dependent upon the location of the tumor. CT and MRI are both good imaging techniques for detecting the presence of a meningioma<sup>7</sup>. Currently, magnetic resonance imaging (MRI) is an important modality in evaluating the brain tumors<sup>8,9</sup>.

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## PATIENTS AND METHODS

This prospective study included 30 patients of meningiomas brain. This was carried out at Department of Neurosurgery Unit-1, Lahore General Hospital Lahore from September 2010 to September 2012. Patients having meningioma's of brain were included. Those patients who having meningioma's of spine were excluded. The clinical symptoms and signs of meningiomas were related to those of an intracranial mass lesions or seizure. The clinical symptoms and signs of meningiomas are related to those of an intracranial mass lesion or seizures are: (i) Foster-Kenned syndrome; anosmia (patient is usually unaware of this) ipsilateral optic atrophy contralateral papilledema. mental status changes; often with frontal lobe findings (apathy, aboulia); urinary incontinence and seizure. Data was analyzed by simple frequency and percentages in SPSS-15.

## RESULTS

Table 1: Frequency and %age of genders and ages (n=30)

Variable	No.	%
<b>Gender</b>		
Male	12	40.0
Female	18	60.0
<b>Age (years)</b>		
35 – 40	8	26.7
41 – 45	4	13.3
46 – 50	18	60.0

There were 12 males (40%) and 18 females (60%) with ratio of 1:1.5. All patients were ranged between 35-50 years with mean±standard deviation 44.47±4.76 years (Table 1). According to site, 6

(20%) of parasagittal having excellent outcome and 7 patients (23.3%) of sphenoidal ridge having good outcome (Table 2).

Table 2: Frequency and %age of outcome according to site

Site	No.	%
<b>Excellent</b>		
Parasagittal	6	20.0
Convexity	4	13.3
Tuberculum sellae	2	6.7
<b>Good</b>		
Sphenoidal ridge	7	23.3
Olfactory groove	6	20.0
Falx	5	16.7

## DISCUSSION

Delay appearance, lack of funds to afford suitable neurological services and insufficient manpower still persists in our environment. This is joined with our peculiar cultural and religious beliefs which negates against early hospital presentation and most necropsy studies. This can affect the true prevalence of brain tumours in our environment. Most meningiomas are adjacent to the skull and they often involve it<sup>10</sup>. Bone reacts to the neighbouring tumours by endostosis exostosis or actual invasion. Surgical removal of involved bone is necessary to eliminate recurrence<sup>11</sup>.

Meningiomas are not severely brain tumours, since they occur from meningothelial cells that form the external membranous layer of the brain. However, because they arise within the intracranial cavity and present with neurologic symptoms and signs, they are usually classified as brain tumours. They constitute approximately 20 percent of intracranial neoplasms<sup>12,13</sup>.

In the present study, meningiomas accounted for 15% of intracranial tumours in all age groups. At autopsy, as many as 1.4% of patient may have a meningioma, which suggests that there is a high incidence of asymptomatic meningiomas. These are most common in patients from the age of 35-50 and there is a male to female ratio of 1:1.5.

Surgery is the standard treatment for most meningiomas, as it may potentially cure the vast majority of patients. Other treatments which may be used in an adjunctive fashion include preoperative meningioma embolization, radiotherapy. Most treatments other than surgery are reserved for those with high grade meningiomas or for those that are recurrent<sup>14</sup>.

## CONCLUSION

Meningioma is the most common intracranial tumour in females than males. Cultural beliefs, socioeconomic factors, disparities in manpower and facilities which delays or prevent diagnosis and management may explain the difference.

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