

A Study of Surgical Outcome of Supratentorial Meningioma

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Abstract:

This was descriptive study. This study was carried out at the Department of Neurosurgery Bangabandhu Sheikh Mujib Medical University from April 2010 to April 2014. We have studied 35 cases. After collecting patients admission data, a brief history and clinical examination was done. Supratentorial meningioma was diagnosed primarily by contrast CT scan and MRI of brain which was confirmed by surgery & histopathological examination. After surgery close follow up were done. Most of the sufferer were female 19(54%). The commonest age group was 40-59 years (37.14%). The commonest site of tumors were frontal convexity 8(22.9%) and the commonest histological types were meningotheliomatous 12 (34.3%). All of the patients were undergone surgery. Majority of patients were improved after treatment 31(88.6%).

Key words: Meningioma, craniotomy, intracranial pressure, Computerized Tomography scan, Magnetic Resonance Imaging

Introduction:

The term meningioma is the noncommittal all encompassing name coined by Harvey Cushing, for this tumor of the meninges which is usually benign¹. Meningiomas account for 15% of intracranial tumors. They commonly occur in the fourth to sixth decades. Females have meningiomas more than males and this varies according to site from a ratio of 3:2 in the supratentorial area. Ninety per cent of meningiomas are intracranial and of these about 90% are supratentorial.

As with virtually all other brain tumors the etiology of meningiomas is unknown. Cases exist however in which the tumor has arisen under a fracture from an area of scarred dura or around a retained foreign body,² conceivably these factors contributed to the formation of the meningiomas but there is no definitive in meningioma formation especially during childhood³.

Neuro fibromatosis I and 2 (NF-I and NF-2) genetic diseases inherited in autosomal dominant fashion may be associated with meningiomas.

The arachnoid cap cells are most prevalent near collection as of arachnoid villi at the dural – venous sinuses and their large tributaries meningiomas may arise anywhere the cap cells are located⁴.

Meningiomas are well demarcated round or oval and frequently multilobulated. They are firm and pink

and vary in consistency from soft and easily aspirable to rock hard⁵.

According to the site, the distribution meningioma are followers: convexity, parasagittal, falx, olfactory groove, tuberculum Sella, sphenoid ridge, posterior fosa, intraventricular, intraorbital⁶.

Methodology:

This was a descriptive cross sectional study, which was carried out at the Department of neurosurgery BSMMU from April 2010 to April 2014. A total of 35 cases were selected before entry to the study and an informed written consent was taken from each patient. A structured questionnaire was made and data were collected. Diagnosis was confirmed by CT scan and MRI of brain and histopathological examination. The study was analysed by SPSS program.

Results:

A total of 35 patients were included in the Study (table I). Out of the female (54.60%) outnumbered the male (table II). The age group of 40-59 years gripped the major proportion (34.14%) of patients. Headache was the commonest (71.4%) presenting symptoms followed by vomiting (34.38%). Hemiparesis (51.14%) was the presenting symptoms and followed by vomiting (34.38%).

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Hemiparesis (51.14%) was the findings major proportion of patients (table III & IV).

The commonest site of lesion (table V) was frontal convexity (22.9%). Meningotheliomatous (34.31%) was the major varieties of lesion (table VI). All of the patient were treated by surgery (table VII). Only eight patient develop different complication (table-VIII). After surgery about 88.6% improved, 8.6% deteriorated and one died (table IX).

Table-I
Distribution of the patients by age (n=35)

Age	Number	Percentages (%)
>20	05	14.3
20-39	12	34.38
40-59	13	37.14
<60	05	14.3
Total	35	100

Table-II
Distribution of the patient by sex (n=35)

Sex	Number	Percentages (%)
Male	16	45.4
Female	19	54.6
Total	35	100

Table-III
Distribution of the patient by presenting symptoms

Presenting Symptoms	Numbers	Percentages
Headache	25	71.4
Vomiting	12	34.38
Convulsion	12	34.35
Altered Consciousness	5	14.3
Visual blurring	5	14.3

Table-IV
Distribution of patients by clinical findings

Clinical Features	Numbers	Percentages
Impaired higherPsychic functions	12	34.38
Cranial nerve palsy	7	20
Hemi paresis	18	51.14
Mono paresis	12	34.38

Table-V
Distribution of patients by the site of lesions (n =35)

Site	Numbers	Percentages
Frontal convexity	8	22.9
Sphenoid wing	8	22.9
Fronto-Parietal convexity	6	17.1
Parietal convexity	5	14.3
Temporal	3	8.6
Olfactory groove	1	2.9
Falcine	2	5.7
Sellar	1	2.9
Optic nerve sheath meningioma	1	2.9
Total	35	100%

Table-VI
Distribution of patients by histologicals types of the tumor (n=35)

Histological Types of the tumor	Who	Number	Percentage
	Grade		
Meningotheliomatous	I	12	34.3
Fibrous	I	8	22.9
Transitional	I	6	17.1
Psammomatous meningioma	I	4	11.4
Angiomatous Atypical meningioma	I	2	5.7
Atypical meningioma	II	2	5.7
Anaplastic Meningioma	III	1	2.9

Table-VII
Distribution of patients by treatments options (n=35)

Treatment Option	Number	Percentages
Surgery	34	97.1
Surgery+Gammaknife surgery	1	2.9

Table-VIII
Distribution of patients by post operative complication (n=35)

Complication	Number	Percentages
Post operative haematoma	3	8.6
Seizure	2	5.7
Limb weakness	1	2.9
Cranial nerve palsy	1	2.9
Brain edema	1	2.9

Table-IX
Distribution of patients by outcome after treatment (n=35)

Outcome	Number	Percentages
Improved	31	88.6
Deteriorate	3	8.6
Death	1	2.8

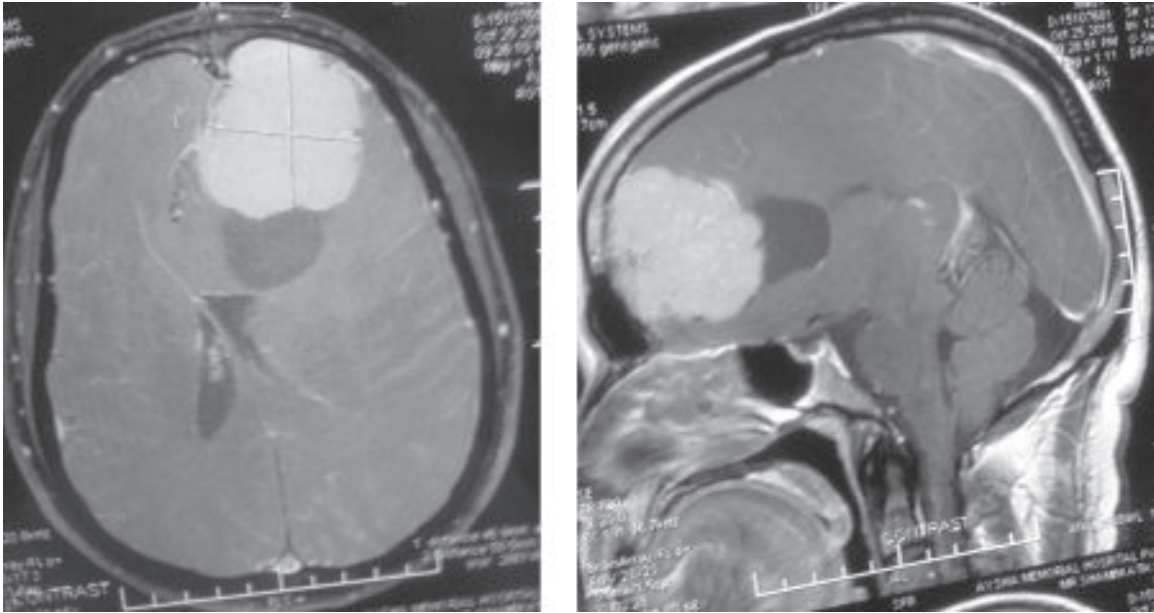


Fig. -1: *Frontal falxine meningioma axial & sagittal section*

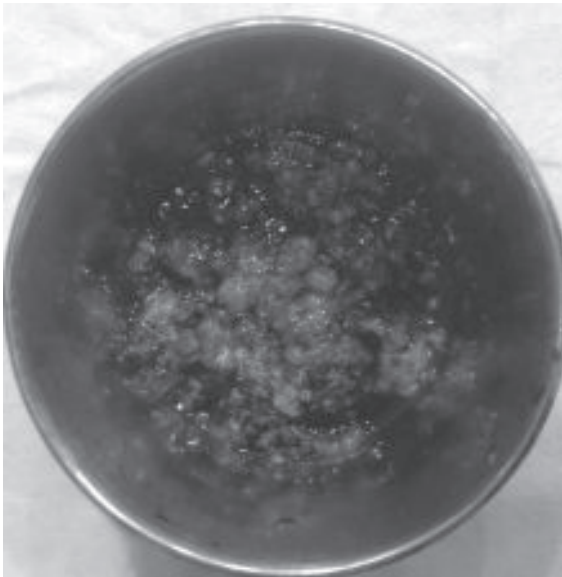


Fig. -2: *Excise tumor*



Fig. -3: *Postoperative patient after three months*

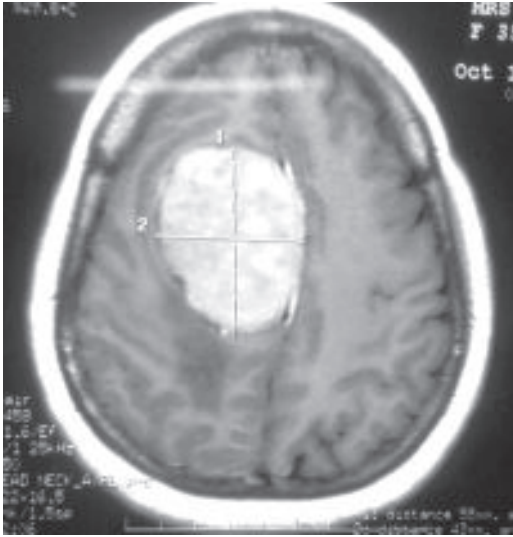


Fig. -4: Frontoparietal convexity & paragittal meningioma

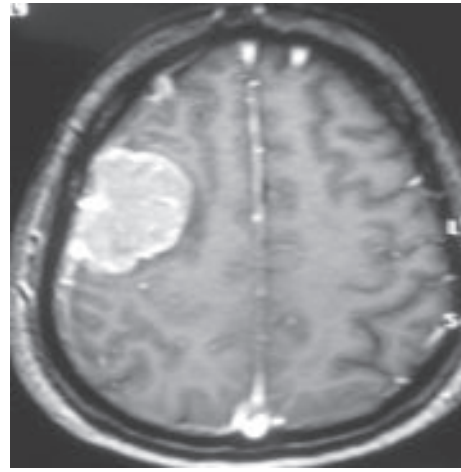


Fig. -7: Right frontoparietal meningioma

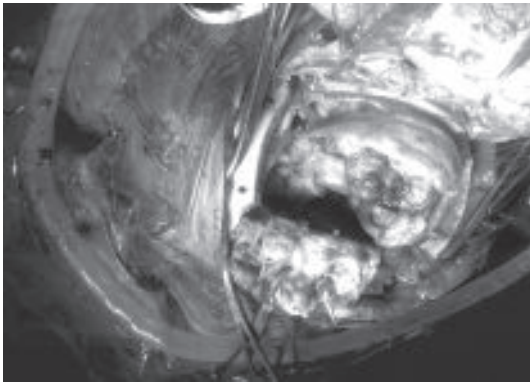


Fig. -5: Intraoperative photograph

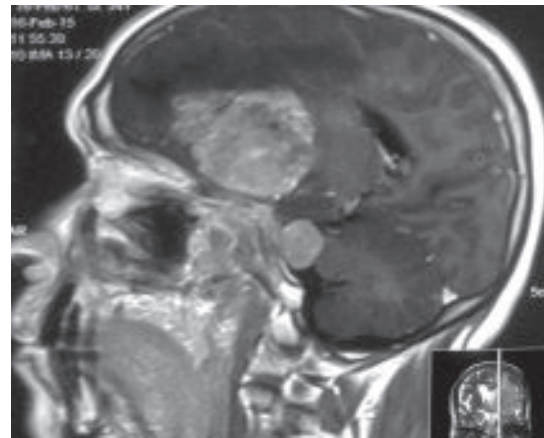


Fig.-8: Frontotemporal meningioma

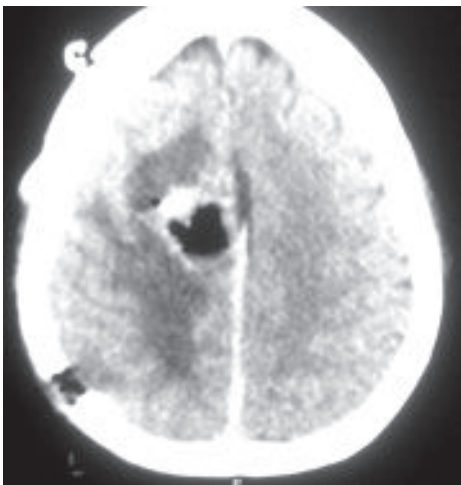


Fig. -6: Postoperative photograph

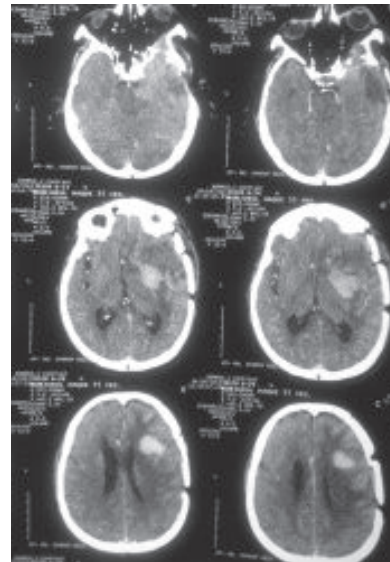


Fig.-9: Postoperative film with hematoma

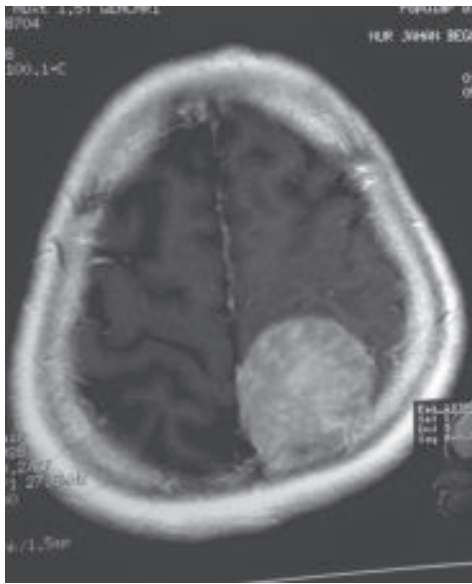


Fig.-10: *Left parietal meningioma*

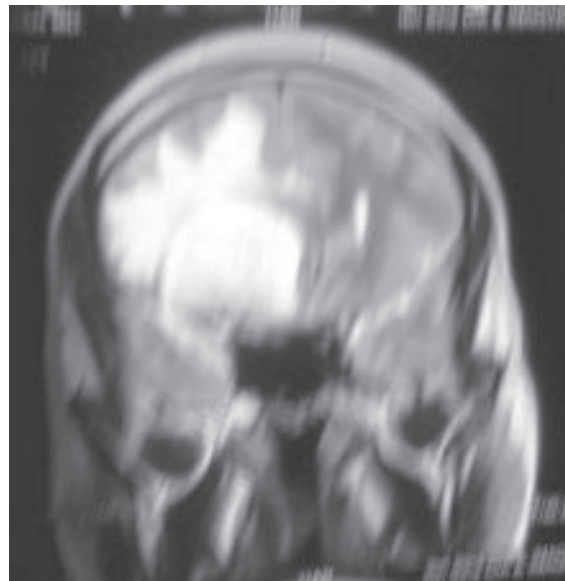


Fig.-11: *Right sphenoid wing meningioma*

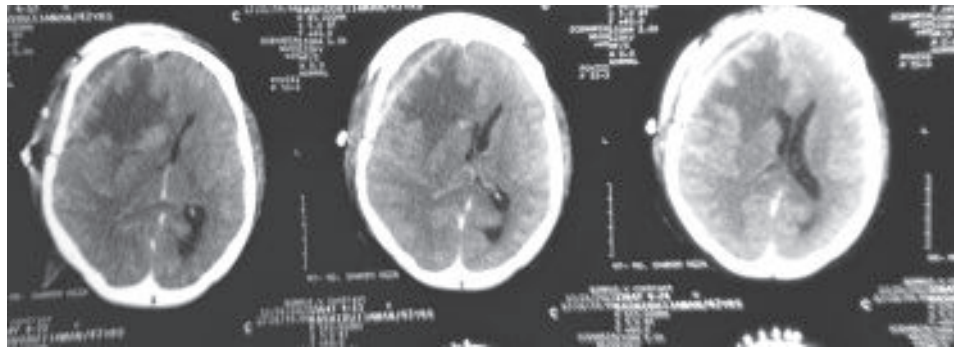


Fig.-12: *Postoperative scan*

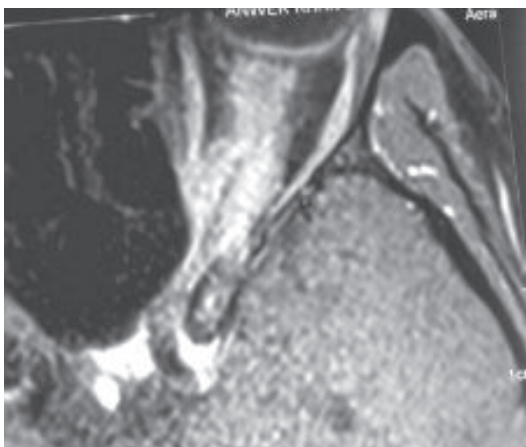


Fig.-13: *Left optic nerve sheath meningioma*

Discussion:

This was descriptive study which was carried out at the Department of Neurosurgery, BSMMU. The female & male ratio of patients were 19:1 which was more or less concomitant with the study of Perry A⁷. The result of that study revealed female & male ratio were 18:1

It was documented in a study the prevalence was more at 4th to 6th decade⁸.

In this study where the age group of 40-59 years were the major proportion of patients (37.14%). The second highest proportion of age group were 20-39 years (31.38%).

In this series the commonest sites of tumors were frontal convexity meningioma i.e. frontal & anterior to the central sulcus.

In a study the majority of histological types were meningotheomatous 08(32%). In previous study meningotheomatous was the commonest type in this study 21(84%) patients improved after surgery, 8.4% patients remain same as before, 8.4% patients were deteriorated after surgery, previous study shows surgery was the treatment of choice in meningioma⁹.

In this study (2.9%) only one patient was treated by radiotherapy+ surgery in previous study 32% of patient was treated by partial resection with radiotherapy¹⁰.

Conclusion:

The present study was concluded that surgery is, the choice of treatment of meningioma and further study is recommended.

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