

Outcome of Surgery in Ruptured Aneurysm: A Study of 48 Cases

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Abstract

Background : Rupture aneurysm is a dangerous clinical condition of a patient. The aim of this study is to find out the outcome of rupture aneurysm after microsurgical clipping.

Method: This was a prospective cross sectional study and was conducted at the department of Neurosurgery, Bangabandhu Sheikh Mujib Medical University, Dhaka from January 2011 to April 2022.

Results : Among 48 patient 30(62.5%) were male. It was documented that 32(66.6%) patients were belong to 51-60 years. It was evident that the most of the clinical presentation was history of sudden severe headache 48(100%), 32(66.6%) patients had presented with vomiting and brief loss of consciousness had 24(50%). The highest percentage of WFNS grading of during admission were (1-3), 32(66.6%). Peri-operative rupture during surgery were 16(33.33%). During discharge good recovery was occurred 38(79.7%) and 5(10.5%) had death.

Conclusion: We have treated all the case by microsurgical clipping. Still microsurgical clipping is one of the gold standard procedure for rupture intracerebral aneurysm.

Key word : Aneurysm, rupture, microsurgery, clipping.

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Introduction:

Subarachnoid hemorrhage (SAH) is often a devastating event with high mortality, morbidity, and burden of healthcare.^{1,2} The mortality rate is approximately 50% in population-based studies with a trend towards gradual improvement.³⁻⁵ This mortality rate includes 10–18% of all patients with aneurysmal SAH who die at home or during transportation to the hospital.^{6,7}

Advances in diagnostic and treatment strategies for aneurysmal SAH, through the introduction of computed

tomography (CT) angiography with early detection of aneurysms.

Result:

Table-I
Age distribution of the study subject (n=48)

Age in years	No. of patient	Percentage (%)
30-50	8	16.6
51-60	32	66.6
61-70	8	16.6

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Table-II*Sex distribution of the study subject (n=48)*

Sex	No. of patient	Percentage (%)
Male	30	62.5
Female	18	37.5

Table-III*Distribution of the study subject according to the clinical symptoms*

Clinical symptoms	No. of patient	Percentage (%)
Sudden onset of severe headache	48	100.0
Vomiting	32	66.6
Neck pain or stiffness	30	62.5
Photophobia	3	6.25
Visual blurring vision	2	8.33
Brief loss of consciousness	24	50.0
Seizure	4	8.33
Blindness of one eye	1	4.16

Table-IV*Distribution of the study subject according to the neurological deficit*

Neurological deficit	No. of patient	Percentage (%)
Glasgow comma scale		
3	2	6.25
3-7	8	12.5
8-13	16	33.33
14-15	22	45.38
Other neurological deficit	43	91.1

Table-V*Distribution of the study subject according to the CT scan findings (Blood finding in the subarachnoid space)*

CT scan findings	No. of patient	Percentage (%)
Basal cistern	24	50.0
Sylvian fissure	12	25.0
Interhemispheric fissure	32	66.66
Interpeduncular fossa	11	22.91
Suprasellar cistern	32	66.6
Ambient cistern	24	50.0
Quadrigeminal cistern	8	16.6
Intraventricular hemorrhage (IVH)	32	66.6
Intracerebral hemorrhage (ICH)	8	16.6

Table-VI*Severity of aneurysmal subarachnoid hemorrhage WFNS grading*

WFNS grading	No. of patient	Percentage (%)
1-3	32	66.6
4	16	33.3

Table-VII*Distribution of patient by location of aneurysm (n=48)*

Location	No. of patient	Percentage (%)
A com aneurysm	43	89.5
Middle cerebral artery aneurysm	3	6.3
Internal carotid artery	2	4.2

Table-VIII*Distribution of the study subject according complication*

Complication	No. of patient	Percentage (%)
Intraoperative rupture	16	33.3
Peroperative brain swelling	12	25.06
Postoperative complication	12	25.06
Postoperative hydrocephalous	4	8.3
Hyponatremia	12	25.0
Seizure	8	16.6
Ventriculitis	3	6.20
Pneumonia	3	6.20
Urinary tract infection	16	33.3

Table-IX*Distribution of the study subject according clinical outcome*

Clinical outcome	No. of patient	Percentage (%)
Discharge from hospital with good recovery	38	79.7
Transferred to another hospital	6	12.5
Death	4	8.3

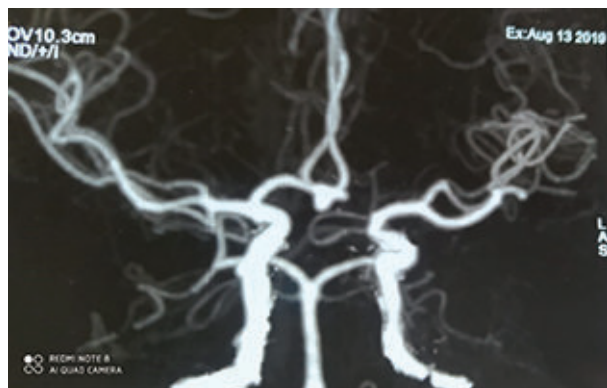


Fig.-1: Anterior communicating artery aneurysm with left A1 hypoplasia.

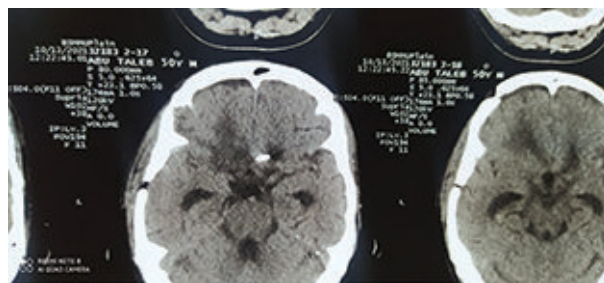


Fig.-2: Postoperative CT scan after clipping of aneurysm.



Fig.-3: Patient with full recovery after 60 days



Fig.-4: Bilateral internal carotid artery aneurysm



Fig.-5: Bilateral internal carotid artery aneurysm

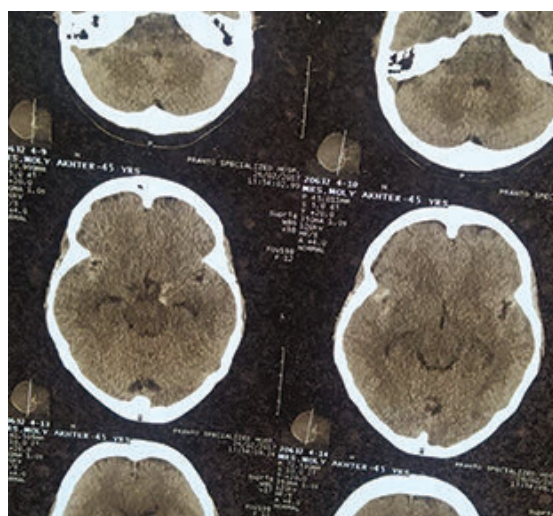


Fig.-6: Bilateral subarachnoid haemorrhage

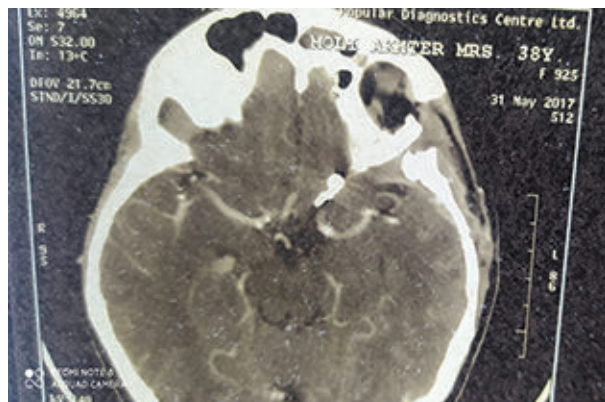


Fig.-7: Postoperative CT scan after clipping of ICA aneurysm

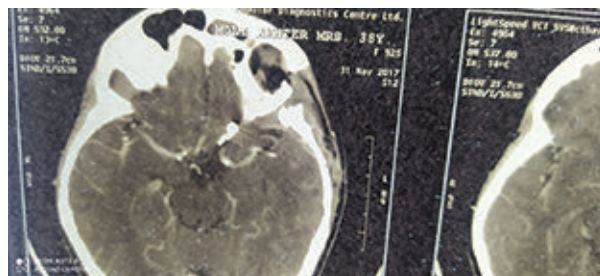


Fig.-8: Postoperative CT scan after clipping of aneurysm



Fig.-9: Postoperative patient after clipping of bilateral internal carotid artery aneurysm.

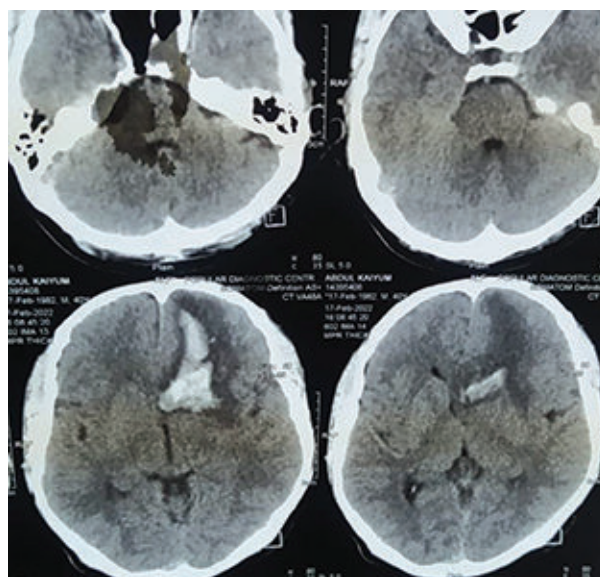


Fig.-10: Preoperative interhemispheric haemorrhage due to rupture acom aneurysm



Fig.-11: Acom aneurysm with hypoplasia left A1

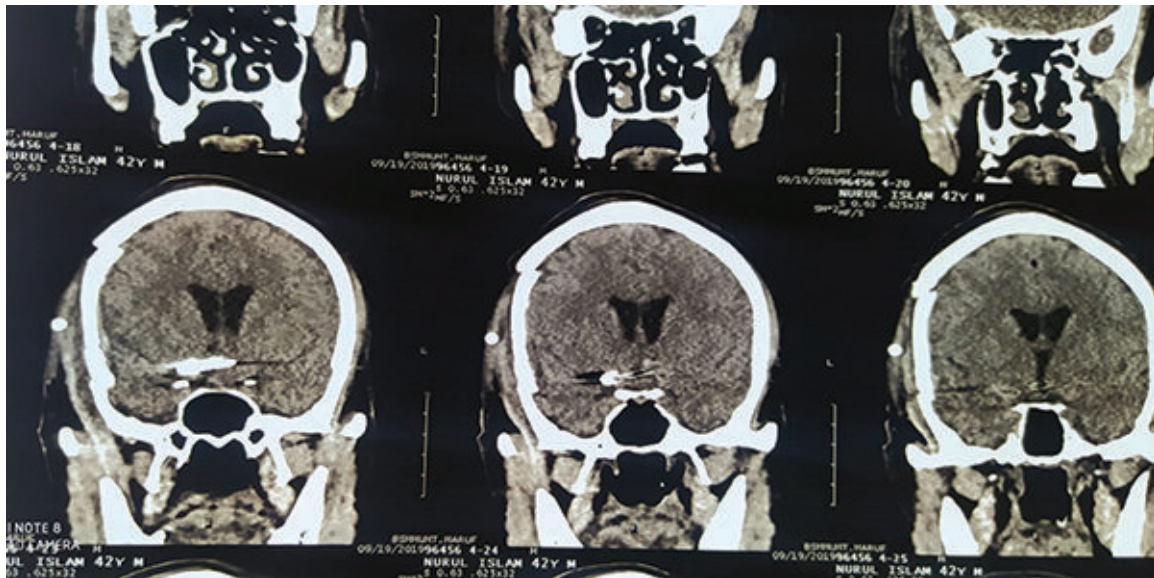


Fig.-12: Postoperative CT scan after clipping of aneurysm

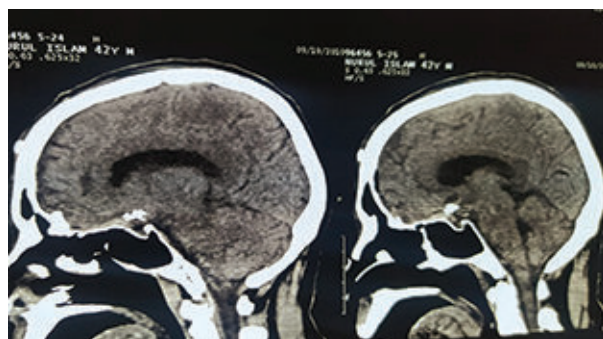


Fig.-13: Postoperative CT scan of brain with sagittal view



Fig.-14: Postoperative patients after full recovery

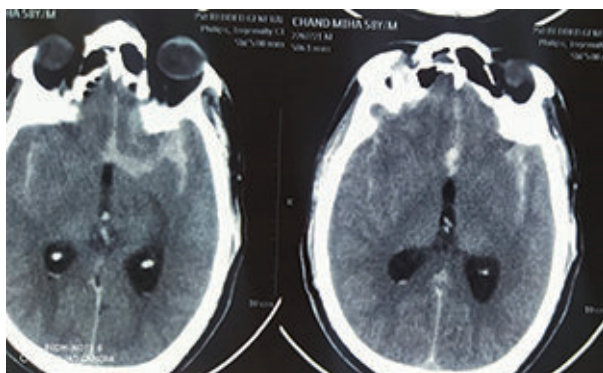


Fig.-15: Rupture MCA aneurysm

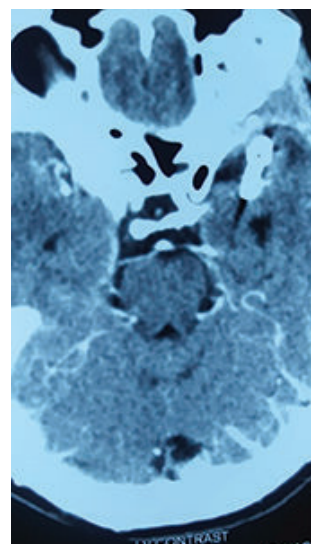


Fig.-16: Postoperative CT scan after clipping of aneurysm

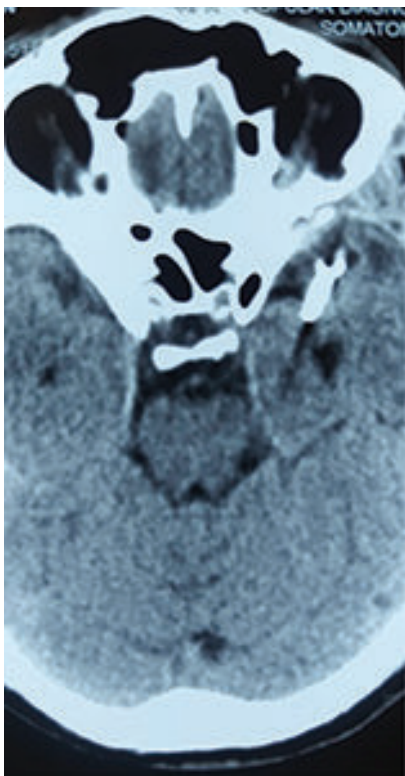


Fig.-17: Postoperative CT scan of same patient



Fig.-18: Postoperative patient after clipping

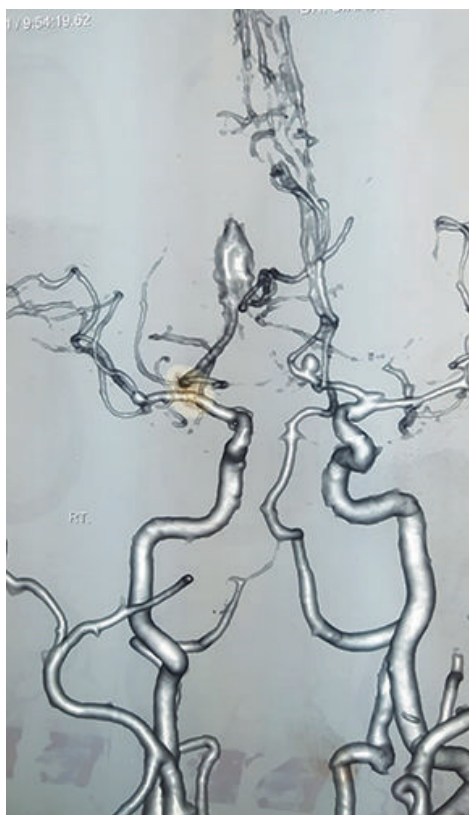


Fig.-19: A com aneurysm with right A1 & right vertebral artery hypoplasia



Fig.-20: Postoperative patient after clipping of aneurysm

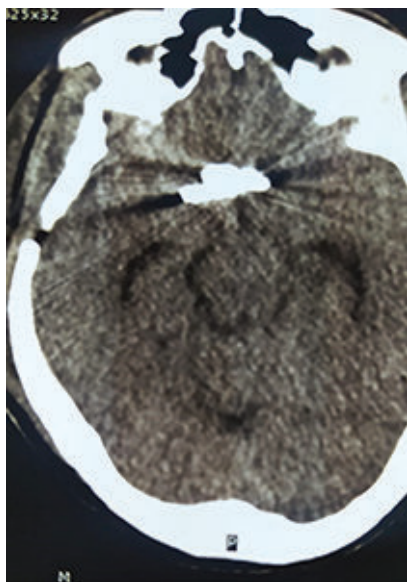


Fig.-21: CT scan of brain after clipping of aneurysm

Discussion:

In our study majority of the patients were male (65.5%). In previous study male represented 48.7%.⁸ It was evident that most of the patients belongs to (51-60 years) that was 66% in our study. In comparison to earlier study median age group were 57 years.⁹

It was documented that the majority of the patient had history of sudden severe headache in our study. In earlier literature showed that severe headache represented 78.5% of patients.¹⁰

In this study patients presented with vomiting 66.6%. Neck stiffness were 62.5%. Previous study showed vomiting had 60.7% and neck stiffness had 39.3%.

In previous study brief loss of consciousness had 70%, in our cases brief loss of consciousness had 50%. In previous study patient presented with neurological deficit 99.9%. It was documented that neurological deficit were 91% in our study. In earlier research 94.1% patients had blood in sylvian fissure, 66% inter hemispheric fissure. In our study it was documented that intrahemispheric blood had 66%. Intraoperative rupture of aneurysm had 33% and brain swelling were 25% cases. But in previous literature intraoperative rupture were 22% cases.

It was documented that 79.7% patients had good recovery and 8.3% patients died in postoperative period. In previous study 11.1% patients died after surgery. Our study showed almost nearly similar results with previous study.

Conclusions:

This study investigated selected patients with aneurysmal SAH presenting to BSMMU. Patients with aneurysmal SAH were transferred from local to BSMMU with high poor outcomes and mortality rates. At admission WFNS grades of IV and V and late rebleeding were independently associated with poor outcomes and deaths.

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