



The Minipterional Craniotomy: Surgical Experience with 102 Ruptured and Unruptured Anterior Circulation Aneurysms

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Introduction

to present the authors clinical experience with the minipterional craniotomy in more than one hundred ruptured and unruptured anterior circulation aneurysms.

Methods

from August 2005 to July 2013 86 consecutive patients with 102 ruptured non-giant, anterior circulation aneurysms were treated with early surgery with the minipterional craniotomy.

Aneurysms Location	Number of aneurysms (n)
Ruptured aneurysms	
PComm	11
ChA	03
ICA Bifurcation	-
OfhA	02
ACommA	10
MCA	11
Unruptured aneurysms	
PComm	20
ChA	05
ICA Bifurcation	03
Ofht Artery	-
ACommA	08
MCA	29
Total	102

Results

Thirty-seven patients (43%) presented with subarachnoid hemorraghe (SAH), while 49 (57%) patients had unruptured aneurysms. Twenty-four patients (64.8%) were classified as Fisher 3 and 4, and 13 categorized as Fisher 1 and 2 (35.1%). Seven patients (18.9%) presented in Hunt Hess 1, 15 (40.5%) in Hunt Hess 2, 2 (32.4%) in Hunt Hess 3 and 3 (8.1%) patients in Hunt Hess 4. Twelve patients (32.4%) need external ventricular shunt due to acute hydrocephalus. Thirty patients (81%) with ruptured aneurysms were operated on until day five after SAH. Postoperative angiogram was carried out in all cases. Results were excellent in 67(77.9% - mRS 0 or 1)), good in 7(8,1% - mRS 2 or 3) of the cases and 12(13.9%) patients deceased.

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Complications	Number of aneurysms
Intraoperative bleeding	
Yes	05
No	97
Intracranial hemorraghe	
Yes	3
No	99
CSF leaks	
Yes	01
No	101
Clinical vasospasm	
Yes	34
No	68
Radiological vasospasm	
Yes	16
No	86
Postoperative hydrocephalus	
Yes	06
No	96
Infection	
Yes	03
No	99

Conclusions

the minipterional technique provides adequate surgical exposure and excellent outcomes for both ruptured and unruptured anterior circulation aneurysms clipping. It constitutes a safe and effective alternative to the pterional approach, with potential better aesthetic and functional outcomes.

Learning Objectives

To describe the use of minimally invasive craniotomy to approach in cerebral aneurysm

teaching surgical technique for residents

References

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Clinical Presentation	Number of patients (n)
Ruptured aneurysms	37
Unruptured aneurysms	49
Hunt-Hess	
1	7
2	15
3	12
4	13
Fischer Scale	
1	4
2	9
3	12
4	12
Hydrocephalus	
Yes	12
No	74