

Table of Contents

List of Original Publications	7
Abbreviations	8
Abstract	9
1. Introduction	10
2. Literature Review	11
2.1 Intracranial Aneurysms	11
2.1.1 Incidence and Prevalence	11
2.1.2 Diagnosis and Imaging of Intracranial Aneurysms	11
2.1.3 Risk Factors	12
2.1.4 Morphology	12
2.1.5 Histology and Aneurysm Wall Degeneration	12
2.1.6 Genetics	13
2.2 Aneurysmal Subarachnoid Hemorrhage	13
2.2.1 Incidence of Aneurysmal Subarachnoid Hemorrhage	13
2.2.2 Fatality of Aneurysmal Subarachnoid Hemorrhage	13
2.3 Microsurgical Anatomy and PCA Aneurysms	14
2.3.1 Microsurgical PCA Anatomy	14
2.3.2 Symptoms Associated to PCA Aneurysms	18
2.3.3 Characteristics of PCA Aneurysms	19
2.4 Historical Aspects	20
2.5 Treatment Strategies for PCA Aneurysms	21
2.5.1 Direct Microsurgical Treatment of PCA Aneurysms	21
2.5.1.1 Frontolateral Approach to PCA Aneurysms	21
2.5.1.2 Subtemporal Approach to PCA Aneurysms	23
2.5.1.3 Posterior Approaches to PCA Aneurysms	26
2.5.1.4 Revascularization Procedures Applied to PCA Aneurysms	28
2.5.2 Endovascular Treatment of PCA Aneurysms	29
2.5.3 Outcome after Posterior Cerebral Artery Aneurysm Treatment	29
2.5.3.1 Radiological Outcome	29
2.5.3.2 Clinical Outcome	31
3. Aims of the study	33
4. Patients, Materials and Methods	34
4.1 Publication I – Characteristics of PCA Aneurysms	34
4.1.1 Patients	34
4.1.2 Imaging	34
4.2 Publication II – Treatment and Outcome of PCA Aneurysms	35

4.2.1	Analysis	35
4.2.2	Patients	35
4.3	Publication III – Subtemporal Approach to PCA Aneurysms	35
4.3.1	Patients	35
4.3.2	Analysis	35
4.4	Publication IV – Lateral Supraorbital Approach to PCA Aneurysm	36
4.4.1	Patient History and Imaging	36
5.	Results	37
5.1	Characteristics of PCA Aneurysms	37
5.2	Outcome after PCA Aneurysm Treatment	40
5.2.1	Historical Series (1954–1979)	40
5.2.2	Distribution of 135 PCA Aneurysms	40
5.2.3	Clinical Presentation	40
5.2.4	Microsurgical Treatment	40
5.2.5	Endovascular Treatment	41
5.2.6	Conservative Treatment	41
5.2.7	One-Year Outcome	41
5.2.8	Complications and Poor Outcome Analyses	44
5.3	Subtemporal Approach to PCA Aneurysms	44
5.4	Lateral Supraorbital Approach to PCA Aneurysms	46
6.	Discussion	47
6.1	Characteristics of PCA Aneurysms	47
6.2	Treatment Strategies for PCA Aneurysms	48
6.3	Complications	50
6.4	Future Aspects of PCA Aneurysm Treatment	51
7.	Conclusion	52
	Acknowledgement	53
	References	55
	Original Publications	67
	Publication I	
	Characteristics of Posterior Cerebral Artery Aneurysms: An Angiographic Analysis of 93 Aneurysms in 81 Patients	68
	Publication II	
	Posterior Cerebral Artery Aneurysms: Treatment and Outcome Analysis in 121 Patients	79
	Publication III	
	Subtemporal Approach to Posterior Cerebral Artery Aneurysms	96
	Publikation IV	
	Lateral supraorbital approach to ipsilateral PCA-P1 and ICA-PCoA aneurysms	106