

Introduction

The natural courses and prognosis of Moyamoya disease (MMD)-related aneurysms are not well-known. The purpose of this study is to address the single institution’s experience about treatment outcomes of MMD–related aneurysms.

Methods

From January 1995 to December 2015, a total of 599 patients has been diagnosed and treated as MMD at single institution. 32 patients (5.3 %) with 42 aneurysms were identified. Excluding follow-up loss, 26 patients with 35 aneurysms were enrolled in this study. These lesions were classified into two groups (A: major artery aneurysms, B: non-major artery aneurysms) according to the location of parent artery. We investigated the characteristics and treatment outcomes of MMD-related aneurysms by a retrospective review of Electronic Medical Record.

Results

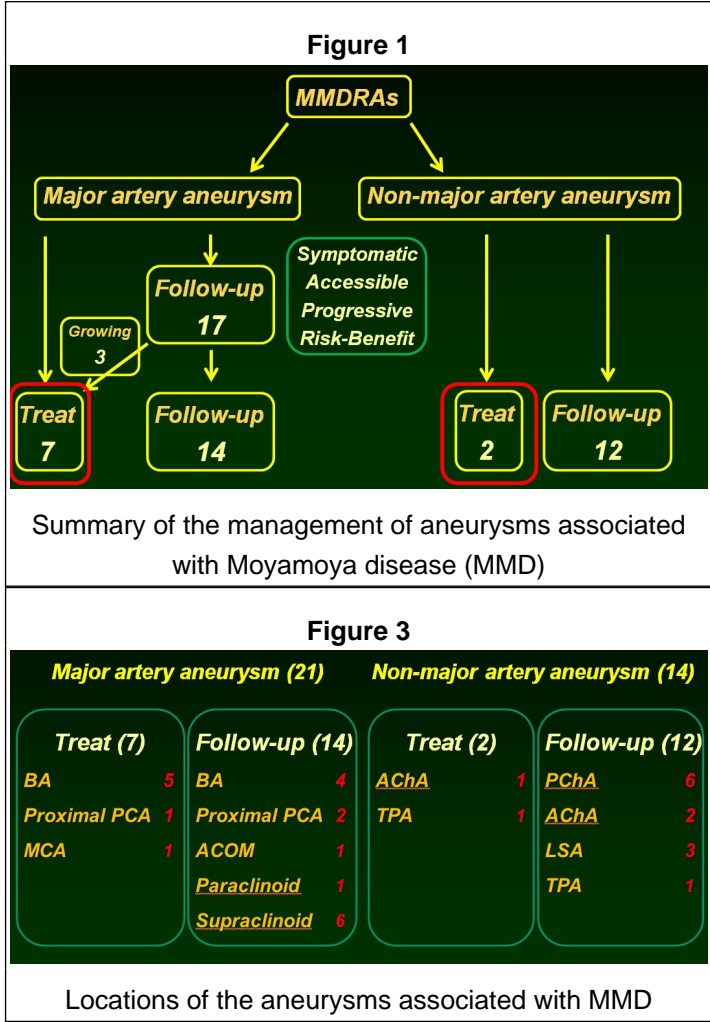
Among 35 aneurysms including 10 ruptured lesions, there were 21 (60 %) in group A and 14 (40 %) in group B, respectively. The average size of aneurysms was 4.0 mm in group A and 3.4 mm in group B. The most common location was a basilar artery (n = 8, 38.1 %) in group A and a posterior choroidal artery (n = 7, 46.7 %) in group B. Four aneurysms (3 in group A and 1 in group B) were treated at the time of diagnosis and the rest 18 aneurysms in group A and 13 aneurysms in group B were treated conservatively and followed up (mean 59 months). In group A, 14 lesions (77.8 %) were stable, while 4 lesions (22.2 %) grew and treated by endovascular coiling. In group B, 10 lesions (92.3 %) were stable, while 3 lesions (7.7 %) progressed or ruptured. In group A and group B during the follow-up period, 5 aneurysms were treated. 9 cases were successfully treated by endovascular method (7 in group A, 2 in group B) with one case of procedure-related complication (11.1 %).

Patient and aneurysm characteristics		
Characteristics	Major artery (n = 21)	Non-major artery (n = 14)
Female	13 (76.5 %)	9 (75 %)
Age	39.1 ± 11.1	33.3 ± 12.5
Aneurysm size	3.9 ± 2.1	3.4 ± 1.8
Ruptured	0	10 (71.4 %)

Rupture rate was significantly higher in the aneurysms located in non-major arteries.

Conclusions

MMD-related aneurysms have a considerable rate of growing or bleeding (22.6%). In a selected case, endovascular technique can be a solution.



Learning Objectives

To characterize cerebral aneurysm associated with Moyamoya disease, as they seem to have worse prognosis.