1. Title: Moyamoya disease and alternative revascularization methods

2. Author, Author Affiliation: M. Arrighi[1], J-F. Cornelius[1], H.J. Steiger[1], S. Muhammad[1], D. Hänggi[1], A. Tortora[1]

3.Presenting author: Marta Arrighi

E-mail: marta.arrighi@med.uni-duesseldorf.de

University Hospital Düsseldorf, Department of Neurosurgery,

Moorenstr. 5, 40225 Düsseldorf, Germany

Phone: +49-17634501056

4. Abstract

Introduction

Moyamoya disease (MMD) is a steno-occlusive cerebrovascular. Revascularization surgery is considered as standard treatment in patients with late Suzuki angiographic stage. Superficial temporal artery (STA) represents the standard donor vessel for direct anastomosis, but in cases is not available or additional flow is required, the occipital artery (OA) could be a donor for a second surgery. The purpose of the present article is to report our bypass experience using the OA in patients in whom a bilateral STA-M4 bypass has already been practiced.

Materials and methods

OA-M4 Revascularization in MMD between January 2016 - May 2018.

Discussion

Case I

51-woman presented with a haemorrhagic MMD with a previous indirect-revascularization (IR) left side and a DR right side. After 26 months detected an inadequate EC-IC shunt left, so we decided to perform OA-M4 bypass and an additional IR. No haemorrhage recurred in the next 14 months follow-up.

Case II

37-woman affected by recurrent TIA in MMD with previous IR left and DR STA-M4. Dynamic CTP showed hypo perfusion of left posterior watershed zone. OA-M4 targeted on the ischemic region was performed. No TIA occurred in the 12 months follow-up.

Case III

41-woman with MMD and previous bilateral DR presented a sub-occlusion 28 months post-bypass. Additional OA-M4 revascularization was performed with an improvement of the perfusion.

[1] Neurochirurgische UKD-Universitätsklinik Düsseldorf

Conclusion

Surgical revascularization is the most successful therapy to improve cerebral hemodynamics in MMD and to reduce the risk of subsequent stroke. Based on our experience, we can conclude that OA-M4 bypass is an efficient revascularization technique after initial STA-M4 surgery.