

Introduction

The current study investigated the long-term treatment effect of bypass surgery for stroke prevention and mortality reduction in adult patients with symptomatic MMD in a real-world setting.

Methods

The medical records of 249 consecutive adult patients with symptomatic MMD that was confirmed by digital subtraction angiography between 2002 and 2011 at 8 institutions were retrospectively reviewed. The study outcomes of stroke recurrence as a primary event and death during the 6-year follow-up and perioperative complications within 30 days as secondary events were compared between the bypass and medical treatment groups.

Results

The bypass group comprised 158 (63.5%) patients, and the medical treatment group comprised 91 (36.5%) patients. For 249 adult patients with MMD, bypass surgery showed an HR of 0.48 (95% CI 0.27–0.86, p = 0.014) for stroke recurrence calculated by Cox regression analysis. However, for the 153 patients with ischemic MMD, the HR of bypass surgery for stroke recurrence was 1.07 (95% CI 0.43–2.66, p = 0.887). For the 96 patients with hemorrhagic MMD, the multivariable adjusted HR of bypass surgery for stroke recurrence was 0.18 (95% CI 0.06–0.49, p = 0.001). For the treatment modality, indirect bypass and direct bypass (or combined bypass) did not show any significant difference

for stroke recurrence, perioperative stroke, or mortality (log rank; p = 0.524, p = 0.828, and p = 0.616, respectively)

Conclusions

During the treatment of symptomatic MMD in adults, bypass surgery reduces stroke recurrence for the hemorrhagic type, but it does not do so for the ischemic type. The best choice of bypass methods in adult patients with MMD is uncertain. In adult ischemic MMD, a prospective randomized study to evaluate the effectiveness and safety of bypass surgery to prevent recurrent stroke is

Learning Objectives

By the conclusion of this session, participants should be able to: 1) Diagnosis of moyamoya diseas 2) Discuss treatment modalities 3) Identify an effective of revascularization surgery.

References

1.Houkin K, Kamiyama H, Abe H, Takahashi A, Kuroda S:

Surgical therapy for adult moyamoya disease. Can surgical revascularization prevent the recurrence of intracerebral hemorrhage? Stroke 27:1342–1346, 1996

2.Miyamoto S, Yoshimoto T, Hashimoto N, Okada Y, Tsuji I,Tominaga T, et al: Effects of extracranial-intracranial bypass for patients with hemorrhagic moyamoya disease: results of the Japan Adult Moyamoya Trial. Stroke 45:1415–1421, 2014

3.Liu XJ, Zhang D, Wang S, Zhao YL, Teo M, Wang R, et al:

Clinical features and long-term outcomes of moyamoya disease:a single-center experience with 528 cases in China. J Neurosurg 122:392–399, 2015