

Dear Editor,

We appreciate all of the comments from the reviewers of our work. We have revised our manuscript, according to the reviewers' comments, questions, and suggestions.

### Responses to the comments of Reviewer 1

“However, surgical techniques, superficial temporal artery-middle cerebral artery bypass and encephalo-duro-myo-synangiosis should be better described in case presentation section. Surgical procedure should be described in more detail. Which type of microscope was used? ”

**Response:** We added a detailed description and explanation of combined cerebral revascularization and the type of microscope used. With the modified pterional approach, the superficial temporal artery should be protected in the anterior auricular incision to avoid injury. Depending on the condition and preoperative angiography results, the parietal branch of the superficial temporal artery (STA) is dissociated from the flap to form a lipid vascular segment. In this case, the temporalis muscle was separated from the temporal bone and completely turned over to the base of the skull and protected. The skull was opened by temporal line milling resulting in a bone window of approximately 10 cm\*10 cm in size. The dura mater was cut along the trunk and branches of the middle meningeal artery, and the rest of the dura mater was radially cut. After hemostasis,

the dura mater was folded and flattened under the bone window, so that the side of the dura mater originally facing the skull was applied to the surface of the cerebral cortex. Flow800 angiography was performed after puncture of the pia meningeal membrane to release cerebrospinal fluid (Fig. 4, G). According to the angiography results and the preoperative plan, the superficial temporal artery-middle cerebral artery bypass was performed with 10-0 sutures using OPMI PENTERO 900 microscope (ZEISS) at 15 x magnification. Flow800 fluorescence angiography was performed again after bypass. The blood flow patency and blood flow were determined, the dural flap at the trunk and branch of the middle meningeal artery was reversed, and the bone window margin was sutured and fixed. The separated temporalis muscle was applied to the surface of the brain, and its edge was sutured at the dural reflex. A curved bone flap was opened at the place where the bridging vessels passed to prevent vessel compression. Finally, the skin was sutured in layers.

“The authors could add short explanation about adenomyosis (definition, why is adenomyosis stroke risk factor) in introduction.”

**Response:** We explained the relationship between adenomyosis and stroke in the introduction.

Adenomyosis is a common benign gynecological disease in women of reproductive age, characterized by the presence of ectopic endometrial glands and stroma in the myometrium resulting in diffuse growth of the myometrium <sup>[1]</sup>. The main clinical manifestations of adenomyosis are dysmenorrhea, menorrhagia, and infertility, among which abnormal uterine bleeding is the most common symptom of the disorder <sup>[2]</sup>. Higher levels of myometrial invasion are associated with increased frequencies and amounts of abnormal uterine bleeding <sup>[3]</sup>, which is also a rare factor leading to stroke in patients with moyamoya disease.

“My suggestion is to reduce the number of subheadings in case presentation section (for example: text in lines 48 and 49 is redundant). Line 83: “a pelvic ultrasound was performed which again revealed adenomyosis “ - again is unnecessary.”

Response: We deleted the statement about the chief complaint in line 48 and 49 and the sentence "pelvic ultrasound showed adenomyosis again" in line 83.

“Lines 89-92: “more concentrated “ - my suggestion is more pronounced .”

Response: Line 89-92 "more concentrated" becomes "more pronounced".

“Line 94: “encepho-duro-myo-synangiosis” should be  
encephalo-duro-myo-synangiosis. ”

Response: We were really sorry for our careless mistakes. Thank you for your reminder. The words "encepho-duro-myo-synangiosis" in line 94 are corrected to "encephalo-duro-myo-synangiosis".

“The title of table 1. “Cases with disease of department of gynaecology associated stroke” needs to be reviewed, my suggestion: Gynecologic diseases associated with stroke: literature review. ”

Response: The title of Table 1 was changed from "Cases with disease of department of Gynaecology associated stroke" to "Gynecologic Diseases associated with stroke: Literature review".

“Editing for English is required throughout discussion section. ”

Response: We have finished the language editing.

## Responses to the comments of Reviewer 2

“In this study, the authors presented acute recurrent cerebral infarction caused by moyamoya disease complicated with adenomyosis. Although cerebral infarction due to adenomyosis is known, the accompanying moyamoya disease makes this article valuable. The authors provided sufficient case presentation and discussion and supported the article with necessary figures and tables.”

Response: We feel great thanks for your professional review work on our article.

### Responses to the comments of Reviewer 3

“Each image of Figure 4 should be explained. PWI mean perfusion weighted image. Cerebral perfusion PWI does not make sense.”

Response: We combined TTP, rCBF and cerebral angiography in preoperative and postoperative PWI into Figure 3, and listed the corresponding interpretation, so as to more intuitively evaluate the preoperative and postoperative disease changes.

**Figure 3. A-D:** Preoperative DSA showed moyamoya disease; **E-H:** The neovascularization was good after bilateral combined cerebral revascularization; **I-J:** Preoperative MR-PWI showed prolonged TTP and decreased rCBF in the bilateral frontal parietal lobe, bilateral paraventricular region, and center of semicovale; **K-L:** Six months after bilateral cerebral revascularization, MR-PWI showed significant improvement in bilateral cerebral perfusion.

“Flow800 fluorescence imagings should be presented.”

Response: We added the process diagram of the patient during the first operation and Flow800 fluorescence imaging (FIG. 4),

and made corresponding interpretations.

**Figure 4. A-D:** Right-side combined cerebral revascularization surgery; **E-H:** According to the intraoperative indocyanine green video angiography (ICG-VA) and Flow800 technology, the optimal recipient vessels were selected, and the analysis results showed good patency of bridge vessels and improved local cerebral perfusion after bypass surgery.

“The therapy included only surgery. Detail of medication should be described.”

Response: We added the patient's medication details. The patient was at the acute stage of cerebral infarction when he was first admitted, and surgery was contraindicated. The treatment included blood transfusion and improvement of the microcirculatory and trophic nerve function, using Edaravone injection Q12h, argatroban anhydrous Q12h, ganglioside QD, and long-term oral aspirin 100 mg/day antiplatelet therapy. Postoperative microcirculation improvement and neurotrophic therapy were performed, and sodium valproate was used in the short term to prevent postoperative epilepsy.

Responses to the comments of Science editor

“Figure legend is too simple and must be supplemented completely. ”

Response: We have added pictures and explained them accordingly.

“In addition, it should be noted that the format of the table needs to adopt the three line table format.”

Response: We have corrected the formatting error of the table.

“In the introduction, the incidence rate of epidemiology should be supplemented.”

Response: We added the recent epidemiological incidence of moyamoya disease.

Moyamoya disease has a high incidence in Japan, Korea, China, and other Asian countries with some degree of family aggregation, suggesting the involvement of genetic factors <sup>[4-6]</sup>.

According to the national epidemiological survey in Japan in 2008, the total number of patients with moyamoya disease treated in the country in 2003 was 7700, with a male to female ratio of 1:1.8 and an annual incidence of 0.54/100 000<sup>[4]</sup>.

According to the national epidemiological survey in South Korea in 2014, 8164 patients were diagnosed with moyamoya disease between 2007 and 2011, including 2928 males and 5226 females, with 38.1 years for a 1:1.8 male to female ratio. The average age of the patients was 36.8 years, with an average age

for male patients of 34.4 years and 38.1 years for females. The annual number of cases ranged from 848 to 1192, and the annual incidence was 1.7-2.3/100 000<sup>[5]</sup>. A survey of the incidence and prevalence of moyamoya disease in urban China in 2021 showed that the estimated incidence and prevalence were 0.59/100 000 and 1.01/100 000, respectively. The prevalence of moyamoya disease in females was higher than that in males, and the age distribution showed a bimodal pattern, which was more obvious in females<sup>[6]</sup>.

## Responses to the comments of Company editor-in-chief

“I have reviewed the Peer-Review Report, the full text of the manuscript, and the relevant ethics documents, all of which have met the basic publishing requirements of the World Journal of Clinical Cases, and the manuscript is conditionally accepted. I have sent the manuscript to the author(s) for its revision according to the Peer-Review Report, Editorial Office’ s comments and the Criteria for Manuscript Revision by Authors. Before final acceptance, uniform presentation should be used for figures showing the same or similar contents; for example, “Figure 1 Pathological changes of atrophic gastritis after treatment. A: ...; B: ...; C: ...; D: ...; E: ...; F: ...; G: ...” . Please provide the original figure documents. Please prepare and arrange the figures using PowerPoint to ensure that all graphs or arrows or text portions can be reprocessed by the editor. In order to respect and protect the author’ s intellectual property rights and prevent others from misappropriating figures without the author’ s authorization or abusing figures without indicating the source, we will indicate the author’ s copyright for figures originally generated by the author, and if the author has used a figure published elsewhere or that is copyrighted, the author needs to be authorized by the previous publisher or the copyright holder and/or indicate the reference source and copyrights. Please check and confirm whether the figures are original (i. e. generated de novo by the author(s) for this paper). If the picture is ‘original’ , the author needs to add the following copyright information to the bottom right-hand side of the picture in PowerPoint (PPT): Copyright ©The Author(s) 2022.”



**Response:** We have prepared the pictures and forms as required.

“Authors are required to provide standard three-line tables, that is, only the top line, bottom line, and column line are displayed, while other table lines are hidden. The contents of each cell in the table should conform to the editing specifications, and the lines of each row or column of the table should be aligned. Do not use carriage returns or spaces to replace lines or vertical lines and do not segment cell content.”

**Response:**We have corrected the formatting error of the table.

“Please provide the ORCID for the authors.”

**Response:**

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## References:

- [1] Bourdon, Mathilde, Santulli, Pietro, Marcellin, Louis, et al. Adenomyosis: An update regarding its diagnosis and clinical features. *J Gynecol Obstet Hum Reprod.* 2021; 50 (10): 102228. doi: 10.1016/j.jogoh.2021.102228
- [2]Peric, H, Fraser, I S. The symptomatology of adenomyosis. *Best Pract Res Clin Obstet Gynaecol.* 2006; 20 (4): 547-55. doi: 10.1016/j.bpobgyn.2006.01.006

- [3] Levgr, M, Abadi, M A, Tucker, A. Adenomyosis: symptoms, histology, and pregnancy terminations. *Obstet Gynecol.* 2000; 95 (5): 688-91. doi: 10.1016/s0029-7844(99)00659-6
- [4] Kuriyama, S; Kusaka, Y; Fujimura, M; et al. Prevalence and clinicoepidemiological features of moyamoya disease in Japan: findings from a nationwide epidemiological survey.[J]. *Stroke.* 2008, 39(1):42-7
- [5] Ahn, Il Min, Park, Dong-Hyuk, Hann, Hoo Jae, et al. Incidence, prevalence, and survival of moyamoya disease in Korea: a nationwide, population-based study. *Stroke.* 2014; 45 (4): 1090-5. doi: 10.1161/STROKEAHA.113.004273.
- [6] Sun, Yixin, Zhou, Guoyu, Feng, Jingnan, et al. Incidence and prevalence of moyamoya disease in urban China: a nationwide retrospective cohort study. *Stroke Vasc Neurol.* 2021; 6 (4): 615-623. doi: 10.1136/svn-2021-000909