

Superficial temporal artery graft

The [superficial temporal artery](#) (STA) is the mainstay of [donor vessels](#) for [extracranial-intracranial bypass](#) in [cerebral revascularization](#). However, the typically used STA frontal or parietal branch is not always adequate in its flow-carrying capacity.

The superficial temporal artery is often affected in [giant cell arteritis](#) and biopsied if the diagnosis is suspected.

[Migraine](#) attacks can occur when the temporal artery enlarges.

The [superficial temporal artery graft](#) has traditionally been considered a [low-flow graft](#) for [flow augmentation](#).

All [direct revascularization procedures](#) performed between 2018 and 2021 by one [experienced neurosurgeon](#) were screened. [Quantitative ultrasound](#) was used to measure the [flow data](#) of the patient's bilateral [Superficial temporal artery parietal branch](#), the bilateral [Superficial temporal artery frontal branch](#), and the left [radial artery](#). Data on the patient's basic information, [Suzuki staging](#), [Matsushima type](#), [anastomosis](#) type, and blood biochemical parameters were collected and analyzed using univariate and multivariate models. An MBC Scale scoring system was proposed to evaluate the recipient artery network of the middle cerebral artery (MCA) tree. The relationship between MBC Scale score and STA graft flow was statistically analyzed.

In total, 81 patients (43 males and 38 females) successfully underwent STA-MCA bypass and were included in this study. The mean flow rates in the STA-PB graft on 1 day preoperatively, 1 day postoperatively, 7 days postoperatively, and >6 months postoperatively (long-term) were 10.81, 116.74, 118.44, and 56.20 mL/min respectively. Intraoperative graft patency was confirmed in all patients. Comparing the preoperative and all postoperative time points, the STA-PB flow rates were statistically significant ($p < 0.001$). The MCA-C score was significantly associated with the postoperative flow rate on day 1 ($p = 0.007$).

The [superficial temporal artery](#) is a useful donor artery for [direct bypass surgery for moyamoya disease](#) and can provide sufficient blood supply to the ischemic cerebral territory ¹⁾.

¹⁾

Wen Y, Gou Y, Wang B, Wang Z, Chen S, Zhang S, Zhang G, Li M, Feng W, Qi S, Wang G. Is STA really a low-flow graft? A quantitative ultrasonographic study of the flow of STA for cerebral revascularization in MMD patients. CNS Neurosci Ther. 2023 Apr 1. doi: 10.1111/cns.14197. Epub ahead of print. PMID: 37002791.

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