Ten out of a total of 31 direct carotid cavernous fistulas (DCCFs) were treated with Willis covered stents (WCSs) (Microport, Shanghai China) at West China Hospital from January 2015 to December 2016. The indications for treatment, perioperative findings, and postoperative and follow-up results were collected and analyzed.

All ten patients had successful deployment of WCSs. Complete exclusion of the fistula was achieved in 6 patients immediately after deploying one stent. Endoleak was observed in 4 patients (cases 2, 4, 5 and 9); thus, redilation of the stent with higher pressure was performed, which resolved the endoleak in 2 patients (cases 2 and 9). The other two patients' endoleak persisted after redilation of the balloon; hence, a second stent was deployed in these 2 patients (cases 4 and 5), which eliminated the endoleak in one patient (case 4), and the other patient (case 5) continued to have minimal endoleak. Nine patients had fistulas that were successfully occluded by WCSs during follow-up. One patient had recurrence of a DCCF at the 10-day follow-up; we chose coil embolization to address this DCCF. No stenosis of the internal carotid artery (ICA) or DCCF recurrence, except that in the abovementioned patient, was observed.

WCS was proven to be an alternative treatment method for complex DCCFs through reconstruction and preservation of the ICA. The study also confirmed the safety, efficacy, and midterm durability of WCSs for complex DCCFs without any serious delayed complications [1)].

1)
Liu LX, Lim J, Zhang CW, Lin S, Wu C, Wang T, Xie XD, Zhou LX, Wang CH. The application of the Willis covered stent in the treatment of carotid-cavernous fistula: a single center experience. World Neurosurg. 2018 Oct 20. pii: S1878-8750(18)32357-X. doi: 10.1016/j.wneu.2018.10.060. [Epub ahead of print] PubMed PMID: 30352308.

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