Fenestrated Aneurysm Clip

The fenestrated clip is sometimes useful in limited approach angle and narrow working space. However, before the development of the new Yasargil titanium fenestrated mini-clip, the only variations of fenestrated clips were those of larger sizes. And those larger clips have a problem of the triangle-shaped gap at the proximal end of the blade.

Using a conventional right-angled fenestrated clip for an internal carotid artery (ICA) aneurysm is potentially disadvantageous because of the worse surgical visibility during and after clip application, especially in tight surgical fields.

Saura et al., report a case of ruptured postero-medially projecting ICA aneurysm treated using a right-angled fenestrated T bar clip (Yasargil titanium clip). A 52-year-old woman was admitted to our hospital with severe headache. Three-dimensional computed tomography angiography showed a saccular aneurysm arising from the left, unusually short ICA, located proximal to the anterior choroidal artery. The right-angled fenestrated T-bar clip (blade length, 5 mm) was applied across the ICA, followed by reconstruction of the ICA wall with preservation of the anterior choroidal artery and simultaneous obliteration of the aneurysm. The key characteristic of the fenestrated T-bar clip is that the fenestrated portion of the clip is connected to the center of the blades. The tips of the blades on both sides are thus clearly visible during clip application.

Application of the T-bar clip allows the surgeon to perform clip ligation of a postero-medially projecting ICA aneurysm while preserving the adjacent perforating artery [1)].

Ota et al. describe the efficiency, limitations and surgical technique of using the Yasargil titanium fenestrated mini-clip.

Fifty-nine cases of aneurysms were treated using these mini-clips. Aneurysm location, size and dome neck ratio, mean follow-up period, neck remnant, and recurrence rate were also analyzed. Among these cases, we present eight characteristic cases, including a case with aneurysm recurrence, and we review the problems associated with the triangle-shaped gap at the proximal end of the clip. RESULTS:

The average size of the aneurysms was 5.57 mm, and the dome neck ratio was >2.0 in 1.69%, >1.5 in 11.8%, >1.2 in 35.6%, and <1.2 in 50.8% of cases. The mean follow-up period for the 59 cases was 5.5 months (range, 0.5-16 months). Angiographic recurrence of the treated portion occurred in 1 case (1.7%), including an aneurysm in the basilar artery tip aneurysm.

The availability of the Yasargil titanium fenestrated mini-clip increases the options for clipping to minimize the remnant of the clipped aneurysm. However, there is still concern over the triangular space at the base of the blade, especially when treating an aneurysm with a thin vessel wall. Therefore, modification of the clipping technique is sometimes needed [2)].

1)
Saura H, Kashimura H, Aso K, Matsumoto Y. Fenestrated T-bar clips in the surgical management of internal carotid artery aneurysms: technical note. World Neurosurg. 2018 Jun 5. pii: S1878-8750(18)31169-0. doi: 10.1016/j.wneu.2018.05.215. [Epub ahead of print] PubMed PMID: 29883822.

2)

Ota N, Tanikawa R, Noda K, Tsuboi T, Kamiyama H, Tokuda S. The efficiency of the new Yasargil titanium fenestrated mini-clips for ideal clipping of a cerebral aneurysm. Surg Neurol Int. 2015 Oct 23;6(Suppl 21):S553-S559. eCollection 2015. PubMed PMID: 26664871.