Endovascular pure electrocoagulation of intracranial perforator blister-like aneurysm not accessible to microcatheter—New approach to treat small vessel hemorrhage disease

Dear editor,

A 49-year-old woman was presented with sudden headache, nausea, and vomiting. Head computed tomography (Figure 1(a)) and initial angiography taken in local hospital revealed subarachnoid hemorrhage without presentation of aneurysm. Review of 3D angiography (Figure 1(b)) 50 days later found a tiny aneurysm of basilar perforating artery. Angiography taken in our hospital (Figure 1(c)) confirmed the existence of the perforator aneurysm. The patient was prepared with Aspirin (300 mg) and Plavix (300 mg) for three days. During the operation, Marathon microcatheter (ev3, USA) failed to enter the cavity of aneurysm after several attempts. We put the Traxcess 14 guidewire (Microvention, USA) into the aneurysm and advanced the microcatheter close to the pedicle, then treated the guidewire as if a stent lead wire (Figure 1(f)), connected it to the Solitaire stent detachment system (ev3, USA) at 4.0 V and 1.0 mA electronic current (Figure 1(d,e)), detached it for 4 min. The aneurysm completely disappeared (Figure 1(g)). The patient suffered no consequences from this procedure. The patient was followed up with angiography (Figure 1(h)) two years later and with telephone till now. No revascularization of aneurysm was found.

Reports of perforator blister-like aneurysm treatment were seldom, especially cases treated with endovascular therapy. Re-rupture occurred in one of seven cases in our review that was not treated early.1 Hamel et al.2 reported failure of advancement of microcatheter into aneurysm, followed by surgical clipping, which was then complicated by tension pneumocephalus. Peschillo et al.3 performed three cases using flow-diverting stents. Complications occurred in all three patients and one case resulted in permanent morbidity. Pure electrocoagulation provides a new thought when microcatheter could not be navigated into the aneurysm. Twenty-four months follow-up and systemic heparinization can exclude the effect of vessel spasm and thrombus formation to some extent. However, the main concern about this endovascular technique is its durability.

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References

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A 49-year-old woman was presented with sudden headache, nausea, and vomiting. Computed tomography (a) revealed small amount of subarachnoid hemorrhage that was restricted to perimesencephalic cisterns. Conventional computed tomography angiography (b) and initial DSA of lateral projection (c) showed a tiny aneurysm (arrow) from the basilar trunk. Intraoperative imaging (d) of Solitaire detachment system shows electric current of Solitaire detachment system at 4.0 V and 1.0 mA (e) with Traxess 14 (f). Complete disappearance of the aneurysm was presented in (g) and in the two-year follow-up image (h) of basilar angiogram.