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Editorial

Cerebral Aneurysm

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EDITORIAL

Cerebral aneurysm, a common neurological disorder, has an abrupt onset and is often lethal by subarachnoid hemorrhage. Once a cerebral aneurysm ruptures, almost half of all patients will have a severe outcome. Neurological deficits last a long time and the patient costs are high [1,2]. On the other hand, methods of diagnosis and treatment are advancing rapidly.

Diagnosis became possible due to non-invasive techniques such as MRI and 3DCTA [3]. However, it is not clear for whom examination is recommended or how to determine the examination interval. Some physicians have attempted to examine these issues [4,5]. The natural course of unruptured aneurysms was statistically clarified [6-8], but individual rupture of aneurysms cannot be exactly predicted. Thus, physicians should elucidate how to treat this disorder with the best cost performance.

The treatment results of ruptured and unruptured aneurysms are improving [9,10]. Clipping and coil embolization are the two major treatment methods. Unfortunately, not all aneurysm patients are able to receive treatment by skillful neurovascular surgeons or endovascular surgeons because of their residence or emergency. Regarding selection of treatment for ruptured aneurysms, ISAT clarified that coil embolization results in statistically better outcomes than clipping [11]. Treatment by coil embolization is effective for prevention of rupture of unruptured aneurysms [12]. However, for individual aneurysms, some are more suited to clipping, i.e. large aneurysms [13]. From an ethical viewpoint, young neurovascular surgeons and endovascular surgeons have less training in the operation room, and how young surgeons should undergo clipping and endovascular coiling training is a growing concern [14-16].

We physicians need to solve these problems. Thus, we published this special issue on cerebral aneurysms in the Journal of Neurological Disorders and Stroke.

REFERENCES

1. Spieler JF, Lanoë JL, Amarenco P. Costs of stroke care according to handicap levels and stroke subtypes. Cerebrovasc Dis. 2004; 17: 134-142.
2. Luengo-Fernandez R, Gray AM, Rothwell PM, Oxford Vascular Study. A population-based study of hospital care costs during 5 years after transient ischemic attack and stroke. Stroke. 2012; 43: 3343-3351.
3. Harrison MJ, Johnson BA, Gardner GM, Welling BG. Preliminary results on the management of unruptured intracranial aneurysms with magnetic resonance angiography and computed tomographic angiography. Neurosurgery. 1997; 40: 947-955.
4. Kim T, Lee H, Ahn S, Kwon OK, Bang JS, Hwang G, et al. Incidence and risk factors of intracranial aneurysm: A national cohort study in Korea. Int J Stroke. 2016; 11: 917-927.
5. Vlak MH, Rinkel GJ, Greebe P, Algra A. Risk of rupture of an intracranial aneurysm based on patient characteristics: a case-control study. Stroke. 2013; 44: 1256-1259.
6. Murayama Y, Takao H, Ishibashi T, Saguchi T, Ebara M, Yuki I, et al. Risk analysis of unruptured intracranial aneurysms: Prospective 10-year cohort study. Stroke. 2016; 47: 365-371.
7. Tominari S, Morita A, Ishibashi T, Yamazaki T, Takao H, et al. Prediction model for 3-year rupture risk of unruptured cerebral aneurysms in Japanese patients. Ann Neurol. 2015; 77: 1050-1059.
8. UCAS Japan Investigators, Morita A, Kirino T, Hashi K, Aoki N, Fukuhara S, et al. The natural course of unruptured cerebral aneurysms in a Japanese cohort. N Engl J Med. 2012; 366: 2474-2482.
9. Tenjin H, Takadou M, Ogawa T, Mandai A, Umebayashi D, Osaka Y, et al. Treatment selection for ruptured aneurysm and outcomes: clipping or coil embolization. Neurol Med Chir (Tokyo). 2011; 51: 23-29.
10. Tenjin H, Yamamoto H, Goto Y, Tanigawa S, Takeuchi H, Nakahara Y. Factors for achieving safe and complete treatment for unruptured saccular aneurysm smaller than 10mm by simple clipping or simple coil embolization. World Neurosurg. 2016; 9: 308-316.
11. Molyneux A, Kerr R, Stratton I, Sandercock P, Clarke M, Shrimpton J, et al. International Subarachnoid Aneurysm Trial (ISAT) Collaborative Group. International Subarachnoid Aneurysm Trial (ISAT) of neurosurgical clipping versus endovascular coiling in 2143 patients with ruptured intracranial aneurysms: a randomised trial. Lancet. 2002; 360: 1267-1274.
12. Koyanagi M, Ishii A, Imamura H, Satow T, Yoshida K, Hasegawa H, et al. Long-term outcomes of coil embolization of unruptured intracranial aneurysms. J Neurosurg. 2018; 1-7.
13. Spetzler RF, Zabramski JM, McDougall CG, Albuquerque FC, Hills NK, Wallace RC, et al. Analysis of saccular aneurysms in the Barrow Ruptured Aneurysm Trial. J Neurosurg. 2018; 128: 120-125.
14. Burkhardt JK, Lawton MT. Training Young Neurosurgeons in Open Microsurgical Aneurysm Treatment. World Neurosurg. 2017; 103: 919-920.
15. Aoun SG, White J, Welch BG, Batjer HH. Neurosurgical Training: A Process, Not an Event. World Neurosurg. 2017; 104: 996-998.
16. Tenjin H, Okano Y. Training model of cerebral aneurysm clipping. Interdisciplinary Neurosurgery: Advanced Techniques and Case Management. 2017; 10: 114-118.