Traumatic Intracranial Aneurysm Formation Following Closed Head Injury

To the Editor: Thank you for taking the initiative to publish the Journal of Vascular and Interventional Neurology. In reference to the publication by Miley et al., I have the following questions: What is the incidence of traumatic intracranial aneurysm formation following closed head injury? Are there differences in the approach to repair pseudoaneurysms? i.e, repair the adventitia first, and the intima, internal elastic lamina and media layers may auto-repair instead of what is customarily done for true aneurysms where the rupture/lesion starts internally and the adventitia is usually spared until late in the course.

P. Edwards-Conrad, M.D., ABPN
Conservative Neurology Services, Valdosta, GA
Disclosure: None reported

Reply from the Authors: Thank you for your letter. The incidence of intracranial aneurysm formation after closed head injury is limited but reported reported to be less than 1%.[1-3] This number is greater (3.2%-12%) when associated with penetrating injuries. You mention an interesting concept of a differential treatment approach to pseudoaneurysms versus non-traumatic spontaneous aneurysms. Since the initial mechanism of injury and the underlying changes in the arterial wall are considered being different, it is quite likely that the vascular response mechanism and repair is different. Spontaneous non traumatic aneurysms are evolve, grow and eventually rupture in a chronic time frame, but when compared to traumatic intracranial aneurysms these develop, grow and eventually rupture during the acute or subacute period following the initial injury.[4-8] However, these differences have not been used practically to develop a different treatment approach from the classical approach to spontaneous intracranial aneurysms.

Jefferson T. Miley MD
Minnesota Stroke Initiative
Zeenat Qureshi Stroke Research Center
University of Minnesota, MN
Disclosure: None reported

1. Benoit BG, Wortzman G. Traumatic cerebral aneurysms. Clinical features and natural history. J Neurol Neurosurg Psychiatry 1973;36:127-138
2. Soria ED, Paroski MW, Schamann ME. Traumatic aneurysms of cerebral vessels: a case study and review of the literature. Angiology 1988;39:609-615
3. Acosta C, Williams PE, Jr., Clark K. Traumatic aneurysms of the cerebral vessels. J Neurosurg 1972;36:531-536
4. Nakstad P, Nornes H, Hauge HN. Traumatic aneurysms of the pericallosal arteries. Neuroradiology 1986;28:335-338
5. Ohta M, Matsuno H. Proximal M2 false aneurysm after head trauma--Case report. Neurol Med Chir (Tokyo) 2001;41:131-134
6. Hern JD, Coley SC, Hollis LJ, Jayaraj SM. Delayed massive epistaxis due to traumatic intracavernous carotid artery pseudoaneurysm. J Laryngol Otol 1998;112:396-398
7. Asari S, Nakamura S, Yamada O, Beck H, Sugatani H. Traumatic aneurysm of peripheral cerebral arteries. Report of two cases. J Neurosurg 1977;46:795-803
8. Fleischer AS, Patton JM, Tindall GT. Cerebral aneurysms of traumatic origin. Surg Neurol 1975;4:233-239