

Charting a Course: The Future of Neurointervention



Neurointerventional practice has been redefined and revolutionized in recent years with the advent of highly effective endovascular treatments. Landmark randomized controlled

trials have set a new gold standard for large vessel ischemic stroke care, as emergent intervention in properly selected patients results in revascularization and good clinical outcomes. Although the ability to avert an otherwise devastating stroke generates significant excitement and enthusiasm in the medical community, there remain a substantial number of patients unlikely to benefit from endovascular therapy due to treatment delays and/or lack of access to capable centers. These cases are sobering and set the stage for the future of endovascular stroke care.

Although the “intervention” aspect of care is effective at restoring blood flow to blocked cerebral arteries, the majority of the potential to improve outcomes may rest in determining the best way to triage patients with stroke symptoms to qualified centers. In this issue of *Endovascular Today*, Nerses Sanossian, MD, reviews the current state of prehospital care of stroke patients, with an emphasis on the nuances of routing patients to a stroke center with endovascular capability. In the same spirit, Feras Akbik, MD, PhD, and Thabele Leslie-Mazwi, MD, share their perspectives on telestroke technology and how it might improve access to timely endovascular therapy. Although the technology and remote evaluation systems of telestroke were initially utilized to safely administer an intravenous recombinant tissue plasminogen activator, they may also be useful in identifying large vessel occlusion syndromes and patients who could benefit from thrombectomy.

Within the interventional suite, developments in stroke device technology and ongoing/upcoming clinical trials are addressed by a panel of experts, including Johanna Fifi, MD; J Mocco, MD; Andrew Ducruet, MD; Ryan McTaggart, MD; and Mahesh Jayaraman, MD. More specifically, Stephen Grupke, MD; Justin Fraser, MD; and colleagues cover the concept of neuroprotection, in which a pharmacologic agent is locally administered to the brain at the time of mechanical thrombectomy. Neurointerventionists have a unique opportunity to access the blood supply supporting injured or at-risk brain tissue, which holds the promise of improving cell survival, reducing the risk of hemorrhagic conversion and extending treatment time windows.

Endovascular stroke treatment has advanced at a rapid pace, but the neurointerventional community has also witnessed a recent evolution in aneurysm treatment. Stephan Munich, MD, and Michael Chen, MD, review new techniques and technologies for treating cerebral aneurysms, highlighting currently available devices and looking ahead to various intravascular devices in the development pipeline. A recent paradigm shift in aneurysm treatment relates to flow diversion. Instead of placing coils into the aneurysm, flow diversion is a treatment based on stent technology that redirects blood flow to remain within the parent vessel. Although flow diversion has been approved for use by the US Food and Drug Administration for more than 5 years, its use has dramatically expanded in recent years. Matthew Koch, MD; Aman Patel, MD; and colleagues review the mechanisms of flow diversion, which has not only changed how many complex aneurysms are treated, but also how relatively simple and straightforward aneurysms can be managed.

We hope you find this edition of *Endovascular Today* to be an informative resource that charts the course for neurointervention into the next decade. ■

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