A New Vascular Decade

Endovascular therapy has matured and expanded over the past decade, and the pace of development and refinement is likely to accelerate in the decade ahead. A look at the next stage in the development of vascular care and all the promising ideas that will likely come to fruition during that time suggest that this is a pivotal moment in our field. As such, it is an honor for me to participate as editor of this edition of *Endovascular Today*.

Artificial intelligence (AI), robotic precision, rapid access to expansive data sets, and biological and nanotechnologic breakthroughs have long been featured in TV, movies, and futuristic novels and have begun to be deployed in multiple industries and disciplines. How will these developments affect vascular care?

In this edition of *Endovascular Today*, we mark the start of the new decade by first reviewing key headlines that closed out the previous one, with an eye toward how they will shape the years ahead. We have invited expert voices to recall and contextualize breaking news and literature highlights across the spectrum of vascular therapy. Each author also addresses the major questions facing the field, the answers to which will help shape the coming decade.

Opening our feature, Drs. Jacob Bundy, Ravi Srinivasa, Mark Meissner, John Moriarty, and Jeffrey Chick dive into venous disease developments, which featured the first United States dedicated stent approvals and continued advancements in thromboembolic and reflux disease. Next, Drs. Joseph Ingrassia, Matthew Finn, and Sahil Parikh have summarized the year in lower extremity revascularization—which clinicians will recognize as having been dominated by the paclitaxel controversy. The authors address the data and the vascular community's responses, but also developments outside of paclitaxel, including new guidelines and progress on chronic limb-threatening ischemia. Another arena of both progress and controversy was aortic repair. Drs. Jordan Stern and Jason Lee detail new large-scale, long-term data on abdominal aortic aneurysms that were published, as were findings with dedicated approaches in aortic dissections and thoracoabdominal aneurysms. Long-term durability remains a question, and the community (particularly in the United Kingdom) awaits word from NICE as to its final aortic repair guidance.

Next, Drs. Alexander Lam, Michael Heller, and Maureen Kohi address the vast (and expanding) landscape of therapeutic embolization, highlighting potential new applications from prostatic hyperplasia to osteoarthritis and obesity in addition to conventional indications, as well as continued explorations in oncology. The previous half decade saw the rise of endovascular stroke management—a sea change in which trial after trial showed the benefits of rapid revascularization based on clot extraction, as detailed by Drs. Gary Rajah, Michael Tso, Rimal Dossani, and Adnan Siddiqui. Therapeutic windows have expanded from the standpoint of anatomy, viability, and time from symptom onset; each is an area of ongoing study with potential for improvement, along with next-generation devices and potential neuroprotective strategies. AI is being used in diagnosis and triage, one of many ways that the field is working to get patients to appropriate care facilities faster. Rounding out our feature, Drs. James Chen, Brian Holly, and Mark Lessne explore recent advancements in dialysis access intervention, a field that until recently had seen relatively little major development over the past decade. New results emerged, and technologies such as drug-coated balloons and percutaneous fistula creation gained market clearances and drew big headlines, though data limitations, cost constraints, and other real-world concerns remain significant hurdles.

We have also asked a few forward-thinking and tech-oriented colleagues for brief previews of technologies that could increasingly play a role in multiple vascular applications. Dr. Melissa Kirkwood highlights the need for increased focus on practitioner safety in the decade ahead, specifically regarding radiation exposure. Drs. Stéphan Haulon, Dominique Fabre, Justine Mougin, Philippe Charbonneau, Antoine Girault, Maxime Raux, and Yann Gouëffic explain current and potential applications for image fusion. Dr. David Deaton explores how the vascular field will intersect with other technologies such as wearable trackers, AI, tissue engineering, and advanced imaging and simulation. And, Dr. Tony Das discusses the broad applicability of digital health and how it will change practice.

We hope this exploration of the past year in vascular therapies, data, and real-world forces aids in your consideration of the potential developments in the decade ahead. There are likely some breakthroughs left unmentioned; we do wish we could have included them all. It has been a year filled with both progress and controversy, though just as notably of collaboration and commitment to patient safety and quality of life. I look forward to exploring the future alongside you all as the next decade unfolds. ■

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