

# An Opportunity to Look Into the Future of Hemodialysis Access

As quoted in a letter in 1676, Sir Isaac Newton once said, "If I have seen further, it is by standing on the shoulders of giants." Indeed, our ability to innovate is largely based upon the achievements of great thinkers from earlier times. However, the study of hemodialysis access is so recent that "earlier times" only take us back a few decades. Compared to other areas of vascular research, hemodialysis access is relatively young.

At times, in our pursuit of ideal treatment options, policy has guided decision making, and we have often accepted the application of technologies originally designed for other spaces. Angioplasty and declotting techniques had become mainstream methods for hemodialysis access maintenance, and the use of bare-metal stents was an accepted option when angioplasty wasn't successful. But true innovation in arteriovenous access creation and maintenance was lacking, and high-quality clinical trial data were not available. Hemodialysis access was definitely not an area that interested most surgeons or interventionists, and it seemed to many of us that progress in the upcoming decade was uncertain.

Remarkably, the past few years have seen some great advances. We can now stand on the shoulders of giants and look ahead as never before. In this issue of *Endovascular Today*, we hear from some of the most innovative and experienced investigators and can glimpse into the future of hemodialysis access. Ziv J. Haskal, MD, highlights the role of stent grafts in hemodialysis access based upon three large, multicenter trials and indicates where stent grafts are headed. An interview with two physicians, Jeffrey E. Hull, MD, and Dheeraj K. Rajan, MD, explores the oppor-

tunity and challenge of endovascular arteriovenous fistula creation, which is currently in early human clinical study. Michael Gallichio, MD; Ingemar Davidson, MD; and John R. Ross, MD, look at tunneled dialysis catheter tip design and placement from the right atrial perspective. Nicholas J. Petruzzi, MD; Jonas W. Redmond, MD; and Timothy W.I. Clark, MD, discuss advances in declotting techniques, and David Shemesh, MD; Yefim Raikhin, MD; Ilya Goldin, MD; and Oded Olsha, MD, share the "why" and "how" of regional anesthesia during arteriovenous access surgery and intervention. Finally, Stavros Spiliopoulos MD, explores the potential role of drug-coated balloons in arteriovenous access intervention.

Every article explores ongoing hemodialysis access innovation. In the future, when we look back at this issue, it is possible that some of these efforts will have failed. Maybe some of these projects or approaches were naïve, or perhaps our technology couldn't meet the challenge. But the flip side is that some of the work discussed in this year's dialysis access issue of *Endovascular Today* will have improved our patients' care and changed the way we approach hemodialysis access surgery and intervention. I therefore welcome you to stand on the shoulders of our esteemed contributors for a glimpse of what may lie ahead in the realm of hemodialysis access. ■



A handwritten signature in black ink, appearing to read "Bart Dolmatch, MD, FSIR". The signature is fluid and cursive.

Bart Dolmatch, MD, FSIR  
Guest Chief Medical Editor