Chronic Total Occlusions

It has been two and a half years since *Endovascular Today* featured the treatment of total occlusions in the peripheral arteries on our cover. As I reflect on the changes that have occurred over this time period, it is clear that significant advances have been made. It is also clear that we still have a long way to go. New devices have allowed us to increase crossing success rates for even the most difficult peripheral arterial chronic total occlusions (CTOs), and with the benefit of nitinol stents and other new modalities, excellent angiographic results can be consistently achieved. The problem remains one of a lack of durability. Limited progress has been made with drug-eluting stents in the peripheral circulation, and we seem no closer to having a viable biodegradable stent for the SFA. But the first step will always be opening the artery, and with the advent of better recanalization tools, the chances of crossing success have never been better.

Traditionally, hydrophilic guidewires have been the devices of choice for peripheral CTOs. Even in the setting of a chronic iliac or femoropopliteal occlusions, a skilled operator can be expected to successfully cross the occlusion in up to 80% of cases with a hydrophilic wire and support catheter. New devices have allowed us to further improve upon these results, with crossing success rates that now approach 100%. Although there remains no consensus regarding the merits of a subintimal approach versus an intraluminal technique for crossing CTOs, the two commercially available re-entry devices have greatly facilitated our ability to "snatch victory from the jaws of defeat" when stuck in the subintimal space. Familiarity with the Pioneer catheter (Medtronic, Inc., Santa Rosa, CA) and/or the Outback catheter (Cordis Corporation, a Johnson & Johnson company, Miami, FL) is critically important to optimize one's chances of a successful outcome when approaching challenging CTOs. In this issue of *Endovascular Today*, Tony Das, MD, will provide us with some pearls regarding the use of these and other new devices for peripheral CTOs. Jim Joye, DO, will take us through some interesting approaches to CTOs, including the use of percutaneous bypass and other exciting new crossing modalities. Dr. Joye is also the subject of our featured interview this month.

Despite the fact that we can successfully cross and treat many of these long and complex peripheral arterial occlusions, it does not necessarily mean that we should. Peter Lin, MD, and colleagues remind us of the important role that conventional surgery still plays in the management of peripheral CTOs, and provide us with recommendations regarding which patients may still best be treated with surgery. Amir Motarjeme, MD, makes a compelling case for the continued role of thrombolytic therapy in the therapeutic algorithm for these patients. The cost, inconvenience, and bleeding risks of thrombolytic agents have discouraged their use; however, it is hard to argue with the excellent results that Dr. Motarjeme has achieved.

Stents are here to stay with regard to SFA intervention. Better results with nitinol stents are being seen, as evidenced by the findings from the SIROCCO trial, BLASTER trial, European ABSOLUTE trial, and from preliminary results of the RESILIENT trial. Femoropopliteal stenting is still plagued by several problems, however, and the poorest results are seen when stents are used for long femoropopliteal occlusions. The likelihood of in-stent restenosis is greater, and the potential for stent material fatigue and ultimate fracture cannot be discounted. There will continue to be a need for nonstent solutions for many of these challenging lesion subsets and Robert Dieter, MD, and I review some of the most promising nonstent solutions.

The most difficult peripheral arterial occlusions sometimes cannot be successfully crossed using conventional approaches. Unique and creative access techniques may be the only way to achieve success and save a limb in some of these most difficult cases, as discussed by Chip Botti, MD, and Gary Ansel, MD. Additionally, Shaddy Younan, MD, and David Cohen, MD, present their experiences with tibial artery access for refractory infrapopliteal artery occlusions.

As you can see, there is still plenty to talk about and much that we can learn from our colleagues. I hope that you find this issue of *Endovascular Today* interesting and informative. ■

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Chief Medical Editor