Powering Radial-Peripheral Procedures With Torqueable Microcatheters

A conversation with Dr. Amit Srivastava.

For the past several years, interventional cardiologist **Dr. Amit Srivastava** has helped drive the radial-to-peripheral movement as an early adopter, researcher, educator, and frequent presenter. Today, more than 80% of the interventions he performs at the Bay Area Heart Center in St. Petersburg, Florida, are peripheral—the vast majority conducted from the wrist. Recently, Dr. Srivastava participated in a prospective, multicenter registry study (N = 120) of radial-first lower extremity arterial interventions.[1] Since then, he has added the Sublime™ Microcatheters (Surmodics, Inc.) to his toolkit. We spoke with Dr. Srivastava about the radial-to-peripheral approach and his experience with Sublime™ Microcatheters, available in 65 to 200 cm lengths.

Radial-first for coronary interventions is now mainstream. Do you think the tide is turning for radial-to-peripheral?

I think we're seeing a growing fervor for it. The talks I've been giving on this topic at conferences have been standing room only. We're also seeing training programs turning out more and more operators who are very fast and adept at performing radial procedures.

I remember being at a Society for Cardiovascular Angiography & Interventions (SCAI) Fellows meeting 15 years ago when someone asked how many of us were taking a radial-first approach for coronary procedures. The answer was about 10%, with 90% going femoral. I asked the same question at a SCAI Fellows meeting last year and the answer was 90% radial.

Do you see more patients requesting radial access?

In our area, for sure. I think our practice has done a good job educating patients that radial access is the right thing to do for coronary interventions. We've also found that patients will do their own Google searches before they come in and will ask if radial access can be done for other procedures.

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Many of our patients already have lumbar spinal disease and back issues. Bed rest for even just 2 hours after femoral access with use of a closure device can certainly be unpleasant for them. When they see the recovery in our surgical center, with patients sitting up and eating right after the procedure, that translates into a great patient experience and great word-of-mouth advertising for the practice.

The safety of femoral access has improved in recent years. What do you see as the most important clinical advantages of the radial approach today?

It's true that the use of micropuncture devices and ultrasound-guided access has improved patient safety for the femoral approach.[2,3] That's really good news. To me, radial access is not an anti-groin approach, it's a pro-patient approach. Before I perform a procedure from the wrist, I always tell a patient that we've prepped the groin in case we need it. If there's an iliac perforation, you're going to need to be able to quickly insert a 7 Fr sheath to place a covered stent. We'll also routinely prep pedal access. Having said that, radial access continues to be safer for patients compared with femoral access.[4]

There are other clinical advantages of the radial approach beyond safety. If you look at the angle of the superior mesenteric artery, renal arteries, and the celiac artery, it's always easier to access them from above than it is from below. This makes procedures easier to perform. The same thing goes with carotid stenting. I believe knowing how to go

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radial makes you a better operator because you can tackle more situations.

Let's talk about the radial-to-peripheral toolkit. Surmodics recently introduced a suite of torqueable peripheral microcatheters to its Sublime™ Radial Access portfolio. Can you describe your experience with Sublime™ Microcatheters?

Radial-to-peripheral operators have really needed a long-length, hydrophilic, braided peripheral microcatheter, so I was eager to try out the Sublime™ device. The first time I used it was actually from the pedal approach. We were up against a very tight, calcified chronic total occlusion that I hadn't been able to cross using other catheters. Using a 65 cm, angled, .018 Sublime™ Microcatheter, I was able to get through it easily. We've also had excellent results from the radial approach crossing calcified, highly stenotic lesions or chronic total occlusions with the angled microcatheters. The catheter length (≤ 200 cm) is perfect. I've been able to get in the popliteal artery with no problem, switch out my wire, and finish the cases much more easily.

What do you think differentiates this microcatheter?

I love the braiding and the fact that you can spin it clockwise or counterclockwise to get it to do what you need it to do. The hydrophilic coating is fantastic.[5] It's really a very lubricious and supportive catheter.

How would you describe the economics of radial versus femoral access for your practice?

The price of the sheaths and other tools certainly is higher for the radial-to-peripheral approach compared with the femoral approach. But in my experience, the price of a radial access sheath does not equal the price of a femoral sheath plus a closure device. So, radial access is still more cost-effective from that standpoint.

More importantly, aside from improving outcomes, radial-to-peripheral offers you the ability to minimize overhead costs and improve patient throughput. In our facility, one nurse can easily manage five radial-access patients in recovery. Bed rest is no longer than 2 hours after a procedure. Once a radial band is off, the patient is on their way. And what's literally changed the game from the endovascular standpoint is that patients no longer have to be routinely admitted overnight to manage and observe the femoral access site and make sure there are no complications. ■

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3. Seto AH, Abu-Fadel MS, Sparling JM, et al. Real-time ultrasound guidance facilitates femoral arterial access and reduces vascular complications: FAUST (Femoral Arterial Access With Ultrasound Trial). *JACC Cardiovasc Interv*. 2010;3:751-758. doi: 10.1016/j.jcin.2010.04.015
4. Bajraktari G, Rexhaj Z, Elezi S, et al. Radial access for coronary angiography carries fewer complications compared with femoral access: a meta-analysis of randomized controlled trials. *J Clin Med*. 2021;10:2163. doi: 10.3390/jcm10102163
5. Data on file at Surmodics, Inc.

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