

Kathryn Kennedy: 00:00 So Dr. Rao, you've been involved with TCT for many years, is that correct?

Sunil Rao: 00:04 Oh, yeah, for, jeez, probably 10 to 12 years now.

Kathryn Kennedy: 00:08 And tell me, why is it such an important meeting for you?

Sunil Rao: 00:10 So it is one of the largest interventional cardiology meetings in the world, and it's certainly the largest American interventional cardiology conference. So it's almost a must-attend for people who are interventional cardiologists.

Kathryn Kennedy: 00:23 And over the decade plus that you've been attending, how has the field changed? What have you seen? How has the meeting changed, what has that evolution been like?

Sunil Rao: 00:32 Well, what's amazing about TCT as a conference is that the organizers, and I'm on the organizing committee, they're really constantly trying to meet the changing educational needs and the way people learn over time. So a great example of that is, five years ago every single attendee at TCT received a free tablet. When you registered and you showed up, all the faculty, all the attendees got a free tablet. And that tablet was already pre-loaded with the TCT app, you could take it to the sessions, you could get your CME right after you go to the session, you could ask questions through the app. It was really an amazing, very, very forward-thinking kind of approach that they took. And this was before any other meeting had tried something like that.

Sunil Rao: 01:23 Similarly, this past year, for example, they recognized that the breadth and the types of interventional cardiology procedures are rapidly changing, and so practicing clinicians needed to really have hands-on experience with some of these different techniques. So they had an entire pavilion dedicated to hands-on learning for different types of procedures. Again, a really unique kind of venue to learn these kinds of things.

Kathryn Kennedy: 01:47 The other thing I was gonna ask, you were moderating numerous panels and sessions throughout TCT this year. Tell me a little bit about what you found to be the most compelling. What was the science that really is sticking with you?

Sunil Rao: 01:59 Well, I think the biggest news that came out of TCT were the results of the COAPT trial, which was the randomized trial of guideline-directed medical therapy versus percutaneous mitral valve repair using a specific device called the MitraClip in

patients with what's called functional mitral regurgitation. This is a patient population for whom we have very, very few therapeutic options. There has always been a suspicion that potentially fixing the mitral regurgitation would be beneficial, but there really hasn't been any data to support that particular approach until now. This trial clearly showed that using the MitraClip device to repair functional mitral regurgitation in the patients who qualified for the trial not only reduced rehospitalization for heart failure, but actually reduced mortality. And it's the first mitral valve therapy in that population that's ever been shown to improve survival. That's really a tremendous landmark study that's really gonna change medical practice, and I think really improve the lives of the patients that we treat.

- Sunil Rao: 02:58 Beyond that, there were a whole host of really fascinating papers that came out and research presentations around different stent platforms and different populations, and all aspects of interventional cardiology that we're interested in, such as radiation safety, radial versus femoral approach. Really, a really wide array of data that came out for practicing interventional cardiologists to apply in their practices.
- Kathryn Kennedy: 03:26 Talk to me a little bit about your role in that. You mentioned the radial versus femoral approach, and I know something that we've gotten used to hearing from you is radial first. Tell me a little bit about your work in making that the standard of care, or trying to move toward that. Give us some of the background there.
- Sunil Rao: 03:41 Sure. So it was really sort of a team effort. I had done a lot of work with Doctors Rob Califf, Bob Harrington, Eric Peterson around sort of the broad topic of cardiovascular safety, specifically as it applied to reducing the risk of bleeding complications in patients undergoing cardiac procedures. And as part of that, there was some preliminary data that suggested that using the radial artery approach for PCI was safer than the femoral approach, but the trials were small, not a lot of US-based data, and we know that there are significant practice variations across countries. So we did a paper where we looked at a large US-based data set and showed that there was a strong association between the use of radial access and a reduction in bleeding complications. But it was observational data, it wasn't randomized.
- Sunil Rao: 04:33 And around that same time, we started adopting radial approach in our practices. This was around 2006, so we started getting a lot of expertise with it as well. And then there was

enough interest in the area that there were a series of big randomized trials that we either led or participated in, the first of which was the RIVAL study, that was the 7,000-patient randomized trial of which the US was a participant. I was on the steering committee of that, showing that radial approach reduces vascular complications. And then DCRI led the SAFE-PCI for women trial, which is still, even to this day, the only randomized trial in interventional cardiology performed solely in women. And it was a completely US-based trial comparing radial versus femoral approach in women, who are very high risk for bleeding, and found that radial access reduced the risk of bleeding by 70% in women undergoing PCI.

Sunil Rao: 05:19 We also started getting interested in the idea of training people to do it, because there were very few. We did a survey study of 200 interventional cardiologists, we published this too, where we tried to figure out what the barriers were to people adopting it. And we found that the barriers fell into sort of three big buckets. One was, those who say, "my administration doesn't support this," number two was, "I don't believe the data," and number three was, "Well, I just don't have opportunities for training." So we thought, "Well, we can address the lack of belief in the data by generating more data." The, "My administration doesn't support it," and, "I don't have an opportunity for training," were both opportunities for training. So we started doing a series of training courses here too, at Duke as well as nationally through professional societies, and I guess all of that led up to December of 2017, when I was faculty for the SCAI Fellows course. I gave a talk and two of the fellows came to me and said, "Dr. Rao, you're not on Twitter." And I said, "No, I'm not." And they said, "Well, we think you should join because it's a great way to disseminate information."

Sunil Rao: 06:20 I wasn't really familiar with Twitter very much then, and so I sort of joined and started figuring out how it worked. And I called two of the fellows that convinced me to join, neither of them were Duke fellows. And I said, "You know, this is a potentially powerful platform to bring radial education to an international audience in sort of a scaled-up way." I mean, what we'd been doing is saying, "Oh, we're gonna rent out a hotel for a weekend and have people come." But you reach maybe 30 people like that. Twitter you can reach thousands. And so, we convinced some radial experts around the world to also join Twitter, and we decided to launch a hashtag, #radialfirst, in February of 2000 ... I'm sorry, it was December 2016, so it was February 2017 when we launched it. And it sort of has really taken off. I mean,

I think in ... I want to say in six months it got something like 17 million impressions.

Sunil Rao:

07:11

So I think all of that has really been towards trying to improve patient outcomes and make sure that we're following scientifically robust data in our practices.