Coronary physiology is an intricate part of interventional cardiology and the advancement of coronary intervention. With the medical field constantly changing due to new medical technologies and procedures, educating physicians and lab technicians on a consistent basis is crucial to the advancement of the health care field.

“The interventional cardiologist is still very stimulated by opportunities to discover new things and take on new techniques,” says Morton J. Kern, MD, FSCAI, who will deliver the Hildner Lecture at the SCAI 2017 Scientific Sessions (SCAI 2017). Dr. Kern’s Hildner Lecture will review the 30-year history of coronary physiology in interventional cardiology. He plans to discuss how coronary techniques are developed and how they can be effectively used in the field.

Although most of Dr. Kern’s lecture will focus on coronary physiology, he still expresses the importance of advancing the field of structural heart disease (SHD) and what the study of coronary physiology can do for it. He is optimistic about the future of both coronary physiology and SHD.

“I see that more and more sophisticated structural heart disease interventions with miniaturized equipment will occur,” he says. “Chronic total occlusion interventions with better techniques will reduce the need for bypass surgery in some patients and novel medications will improve heart failure and bring [physicians] closer together to manage that special group of patients.”

Dr. Kern, who is the chief of medicine at VA Long Beach Healthcare System in Long Beach, Calif., says he looks at SCAI 2017 as a perfect opportunity to learn and converse on topical areas that present much promise in the future.

CONTINUED ON PAGE 6
Dear Colleagues,

Earlier this month, we were delighted to announce the arrival of SCAI’s new Executive Director, Francesca Dea, MBA, CAE.

Collectively, myself, along with the SCAI Executive Director Search Committee, Board of Trustees and Executive Committee, felt that Francesca would be the perfect candidate to lead our Society due in part to the breadth of her past association experience which spans more than 20 years, and more importantly — who she is as a person. We unanimously endorsed Francesca for her strategic leadership, enthusiasm, and passion.

Francesca joins us from The Obesity Society (TOS), where she served as the executive director and is credited with facilitating and implementing a 5-year strategic plan, establishing strong advocacy networks, rebuilding the organization’s financial reserves, launching National Obesity Care Week and doubling the revenue of TOS’s annual meeting. We are truly confident in her ability to lead our organization and move us forward in our mission to Save & Enhance Lives.

I would be remiss if I did not take the time to thank our outstanding Executive Director Search Committee who worked with Sterling Martin Associates in identifying a superb group of candidates. Special thanks to the Search Committee Co-Directors, Kirk Garrett, MD, FSCAI, and Dennis Kim, MD, FSCAI, and to its members J. Dawn Abbott, MD, FSCAI; James Blankenship, MD, MSCAI; David Cox, MD, FSCAI; George Dangas, MD, FSCAI; and Peter Duffy, MD, FSCAI.

We look forward to the great work that we will accomplish with Francesca at the helm and thank the SCAI staff and our incredible members for their tireless dedication to the Society during this period of transition. Please be sure to introduce yourselves to Francesca when you see her at the SCAI 2017 Scientific Sessions in May.

As always, please contact me anytime at president@scai.org.

Sincerely,

Kenneth Rosenfield, MD, MHCDS, MSCAI
2016-17 SCAI President
REGISTER NOW & SAVE!
Advance registration savings expire March 31.

New Orleans is well known for its centuries-old architecture, vibrant live-music scene and unique cuisine, whether you have a craving for French, Cajun or Creole. When not taking part in SCAI 2017, attendees can enjoy a wide range of historic neighborhoods, top-ranked museums, and sightseeing throughout the city.

MAKE YOUR TRAVEL ARRANGEMENTS TODAY!
Reserve your room at Hilton New Orleans Riverside starting at $229 with SCAI’s discounted room block before April 18, 2017, or while availability lasts.

- **Online Reservations:** Visit [www.SCAI.org/SCAI2017Hotel](http://www.SCAI.org/SCAI2017Hotel)
- **Phone Reservations:** Call 1(800) 445-8667 and reference “SCAI”

FRENCH QUARTER
The French Quarter, New Orleans’ oldest neighborhood, has exerted a spell over writers and artists since the time of Mark Twain, Lafcadio Hern, and John James Audubon. French Quarter architecture blends Spanish, French, Creole and American styles together in an idyllic, enchanting setting. From fine dining to casual local eats, the French Quarter is the best place to sample Creole and Cajun cuisine and truly has something for every taste.

MUSIC
The birthplace of Jazz and Louis Armstrong, New Orleans’ first settlers found common ground in music. No other city loves music more. Jazz, Rhythm & Blues, Gospel, Cajun and Zydeco all express the melting pot that is our heritage. The city’s music will put an extra hop in your step!

Robert J. Applegate, MD, MSCAI
Program Chair

Ehtisham Mahmud, MD, FSCAI
Program Co-Chair

Sunil V. Rao, MD, FSCAI
Program Co-Chair

Advance registration discount ends March 31.
[www.SCAI.org/SCAI2017](http://www.SCAI.org/SCAI2017)
The Entrapped Radial Sheath: A Stepwise Approach Algorithm

By Sridevi R. Pitta, MD, MBA, FSCAI and Rahul Sharma, MD

Transradial catheterization is associated with a marked reduction in access site bleeding compared with transfemoral access. However, transradial arterial catheterization can result in unique challenges and complications. The most commonly encountered challenge is radial artery spasm which occurs with a frequency of 15-30% and ranges from mild to severe. The vasospastic potential of the radial artery is due to its highly muscular media and high density of alpha receptors. Refractory severe spasm is rare but can result in entrapment of the inserted radial sheath.1 According to Zencirci et al., the incidence of severe spasm with catheter entrapment was 0.7% during diagnostic procedures and 1.3% during therapeutic procedures.1 Predictors of moderate to severe spasm are multiple arterial punctures, large bore sheaths, long procedural duration, patient anxiety, and multiple catheter exchanges.2, 3 Radial sheath entrapment due to severe radial artery spasm is rare but potentially dangerous since forceful removal can result in endarterectomy or avulsion of the radial artery. This, in turn, may require emergent surgical treatment and result in serious morbidity, increased cost of care, and loss of radial artery patency.4, 5

In this tip-of-the-month, we make the radial operator aware of techniques which have proven effective in the management of an entrapped radial sheath or catheter and highlight a stepwise approach to overcome this complication.

TECHNIQUES FOR REMOVAL OF AN ENTRAPPED RADIAL SHEATH/CATHETER:

A following stepwise treatment approach as summarized in the accompanying graphic algorithm is recommended.

Step #1: Use vasodilators liberally as tolerated by blood pressure and heart rate (verapamil 2.5 to 5 mg and nitroglycerin 200-600 mcg). Additional sedation should be administered in the form of an opioid/benzodiazepine combination.

Step #2: If these initial steps prove ineffective, the next step is to use forearm warming techniques with a convective air patient warming system up to 15 minutes at 43°C (Warm Touch, Model WT-5300A, Covidien, Mansfield MA, USA).1 Alternatively, the antecubital surface of the forearm and the arm can be covered with warm towels or surgical gauzes soaked in warm water with a temperature of approximately 50°C.6 Another non-pharmacologic approach that has been described is flow mediated vasodilatation using a manual sphygmomanometer.7 In this technique, the blood pressure cuff is applied to the upper forearm and inflated 40 mmHg above the systolic blood pressure to occlude the brachial artery. The cuff is left inflated for up to 5 minutes and then rapidly deflated. Ischemia-related alterations in the local chemical milieu during this so-called “clamp and release” technique lead to a potent smooth muscle relaxation response and facilitate radial sheath removal.

Step #3: In case of failure of aforementioned techniques, further treatment options include deep sedation and/or general anesthesia, both of which have been shown to decrease neurogenic influences on spasm.1, 7

Step #4: Invasive techniques such as regional nerve block and/or surgical endarterectomy represent options of last resort for instances of truly refractory spasm unresponsive to steps #1-3.1, 7, 8

Training cath lab staff and operators on the recognition and management of rare but potentially serious complications, such as radial catheter/sheath entrapment, should be part of quality improvement efforts in cath labs using transradial access. Written radial pre-, intra- and post-procedural checklists and protocols, incorporating an algorithm as detailed below, should be considered in all transradial labs. Such documents can be used for patient care, staff training, and also aid in the management of complications.

Flow Mediated Vaso-Dilation Technique “Clamp and Release”

Forearm Heating

Forearm heating with a convective air patient warming system (Warm Touch, Model WT-5300A, Covidien, Mansfield MA, USA)

E Zencirci; 2016

Forearm covered with multiple surgical gauzes sunk in warm water of nearly 50°C

C Baroom; Anatolci; Anatolci Derg 2010
Stepwise Approach Algorithm for Treatment of Radial Sheath Entrapment:

**Pharmacologic**
- Systemic Vasodilators (nitroglycerin and/or verapamil)
- Sedation (IV midazolam and fentanyl)

**Non-Pharmacologic**
- Warm Compresses
- Forearm Heating
- Flow Mediated Vasodilatation Technique ("Clamp and Release")

**Deep Conscious Sedation/General Anesthesia**
- IV Propofol
- Endotracheal Intubation

**Invasive / Surgical**
- Regional Nerve Block
- Endarterectomy

References:
The Goal of the Interventional Cardiologist in the Midst of Health Care Reform

As the discussion around health care reform intensifies, leaders in the field of interventional cardiology are faced with the challenge of providing more efficient and cost-effective care. “We cannot waste. We have to be more efficient in our care,” says Christopher White, MD, MSCAI, who will present the Founders Lecture at the SCAI 2017 Scientific Sessions (SCAI 2017) in New Orleans, La. “Any decision [interventional cardiologists] make about growth or new programs and strategies has to fundamentally pass the test: Does this improve the efficiency of my care? Does this lower the cost per unit of care? Because when it raises the cost per unit of care, then you’ve got a real problem.”

Dr. White is the chief of medical services and professor and chairman of medicine at the John Ochsner Heart and Vascular Institute in New Orleans. Attendees of this year’s Founders Lecture can expect an honest appraisal of the future of the interventional cardiology profession from Dr. White during his talk.

As the Chief of Medical Services, Dr. White oversees strategic development institution-wide, allowing him to see first-hand the effects of costly and inefficient medical care. “It’s not that hard for me to see the challenges that are faced by organizations and then be able to translate that into how it impacts interventional cardiology,” he says.

Dr. White hopes to use his expertise and experience to convince SCAI 2017 attendees to start taking the initiative on health care reform. The difficulty in change is the uncertainty that comes along with it, which Dr. White believes may be uncomfortable for many health care professionals.

“The but I do think [there are] some fundamental principles that I can help them understand that will steer some of their thinking,” he says.

Dr. White envisions a bright future for interventional cardiology; a future that must begin with better management of medical care, treatment, and procedures. Dr. White claims that successful reform will not happen by accident.

“If we are responsible for what we need to take care of, I think our future is very bright and robust,” he says. “I think that the theme of being efficient and reducing the cost per unit of care is going to be our ticket to success. As we become more efficient, we will become more successful.”

Dr. White will present the Founders Lecture on Friday, May 12th, at 8:30 a.m. EST. To register for SCAI 2017, go to http://www.scai.org/SCAI2017.

The History of Coronary Physiology and Its Flow in the Right Direction

Dr. Kern describes coronary physiology as a “perfect complement” to the goals of the Scientific Sessions, which provide a framework Morton J. Kern, MD, FSCAI for attendees to learn new techniques that are easy to implement.

The topic is very near and dear to Dr. Kern, as he has witnessed the evolution of the coronary physiology practice. “Coronary physiology happens to be a very personal subject of interest for me as I grew up in an era before this field was widely applied,” he says.

“In my fellowship training, I learned how to measure coronary sinus blood flow and expanded with new measuring techniques to coronary arterial Doppler flow and finally transregional coronary pressure.”

Dr. Kern’s extensive research on coronary physiology led him to better understand the human coronary circulation, which he states is “applicable” to many of the things taking place within the profession.

Dr. Kern will deliver the Hildner Lecture on Thursday, May 11th, at 8:00 a.m. EST. To register for SCAI 2017, visit http://www.scai.org/SCAI2017.
REAL-WORLD CODING

REAL-WORLD CODING

Coding for Moderate Sedation in 2017 – Part One

As reported in the SCAI 2017 Coding & Reimbursement Webinar, the Centers for Medicare & Medicaid Services (CMS) have stripped the work value from all Appendix G codes for the work associated with performing moderate sedation. The vast majority of interventional cardiology procedure codes were included in Appendix G. This stripping of value resulted in a reduction of value of 0.25 work Relative Value Unit (RVU) from the current values for almost all interventional cardiology procedures. To recapture this value, providers that perform moderate sedation in addition to the base procedure must now additionally bill for moderate sedation using new time-based moderate sedation codes.

Moderate sedation is a drug-induced depression of consciousness during which patients respond purposefully to verbal commands, either alone or accompanied by light tactile stimulation. No interventions are required to maintain cardiovascular function or patent airway, and spontaneous ventilation is adequate.

There are two new sets of Moderate Sedation Codes. One set (99151-99153) is used when moderate sedation is provided by the same provider performing the base procedure for which moderate sedation is being performed and a separate set (99155-99157) when moderate sedation is being provided by a physician or qualified health professional different from the provider performing the base procedure. The latter set will be addressed in a future issue of SCAI News & Highlights.

New 2017 Moderate Sedation Codes when the moderate sedation services are provided by the same physician performing the base procedure for which moderate sedation is being performed:

99151 – Moderate sedation services provided by the same physician or other qualified health care professional performing the diagnostic or therapeutic service that the sedation supports, requiring the presence of an independent trained observer to assist in the monitoring of the patient’s level of consciousness and physiological status; initial 15 minutes of intra-service time, patient younger than 5 years of age
- Total In-facility RVUs: 0.67; Medicare National Average Payment: $24.05
- Total Non-facility RVUs: 2.18; Medicare National Average Payment: $78.24

99152 – Moderate sedation services provided by the same physician or other qualified health care professional performing the diagnostic or therapeutic service that the sedation supports, requiring the presence of an independent trained observer to assist in the monitoring of the patient’s level of consciousness and physiological status; initial 15 minutes of intra-service time, patient age 5 years or older
- Total In-facility RVUs: 0.35; Medicare National Average Payment: $12.56
- Total Non-facility RVUs: 1.45; Medicare National Average Payment: $52.05

99153 – Moderate sedation services provided by the same physician or other qualified health care professional performing the diagnostic or therapeutic service that the sedation supports, requiring the presence of an independent trained observer to assist in the monitoring of the patient’s level of consciousness and physiological status; each additional 15 minutes intra-service time (list separately in addition to code for primary service)
- Total In-facility RVUs: N/A; Medicare National Average Payment: N/A
- Total Non-facility RVUs: 0.31; Medicare National Average Payment: $11.13

Coding is based on intra-service time which “Begins with the administration of the sedating agent(s) and ends when the procedure is completed, the patient is stable for recovery status, and the physician or other qualified health care professional providing the sedation ends personal continuous face-to-face time with the patient.”

REAL WORLD QUESTIONS:
Q: We are now working on the coding and proper documentation for the new CPTs®, 99152 and 99153. There is confusion on reimbursement. As you indicated, no work RVUs have been assigned to 99153 when performed in a facility and thus I assume no reimbursement, but does it need to be captured in order to at least obtain 99152 if the procedure extends beyond 23 minutes, implicating use of the add-on code for each additional 15 minutes? Also, there are those on our hospital team who believe it will be reimbursed and conceivably multiply for each unit of 99153. Who is right?

A: If the performing physician is providing moderate sedation, they can bill just the initial 15-minute code (99152) even if the procedure is longer than 23 minutes. There is not a requirement to bill the each additional 15-minute code (99153) for longer procedures. CMS did assign 0.01 malpractice RVUs to the 99153 code, but only for the office/non-facility setting. There is no financial incentive for
facility-based providers to bill 99253 to each additional 15-minute code.

In regard to hospital reporting, a review of the Hospital Outpatient Prospective Payment System APC HCPCS cross-walk file (HOPPS Addendum B) shows CMS considers both 99252 and 99253 to be bundled services and they will not be granting the facility any additional payment for either of the codes.

Q: Medicare is denying 99153, stating it should be billed to another payer. When calling Medicare to find out about this, I was told 99153 was a technical component code and should only be billed by part A. When looking this code up on the CMS [Physician] Fee Schedule, it showed as an indicator 3, meaning it is a technical component.

According to the CPT® book and to our understanding, 99153 is an add-on code to 99152. 99152 is being paid by Medicare. We believe that 99153 should follow the same rules as 99152. Are we missing something?

A: Yes, code 99153 has been designated as “technical component only” to capture practice expense associated with each additional 15 minutes after the initial 15 minutes (captured by 99152). The RVS Update Committee found no additional physician work associated with each additional 15-minute code. CMS did assign a very small value for malpractice (0.01 RVUs) to 99153. CMS officials did state that they might be open to granting the 0.01 malpractice RVUs to facility-based providers through future rule-making. But for now there is no financial incentive to support reporting 99153.

Q: My carrier is rejecting the new moderate sedation codes. We are providing lower extremity revascularization procedures in an office setting. These codes were listed in Appendix G and moderate sedation should now be separately reported in addition to the procedure. Why are these claims being rejected?

A: We have received feedback that at least one of the Medicare Administrative Contractors (MAC) set their claims processing logic up incorrectly for the new moderate sedation codes, resulting in the improper rejection of all claims for 99152 when reported in the office setting. There does not appear to be a directive from CMS nationally requiring the MAC to auto-reprocess these claims. It is recommended you contact the carrier for a time estimate as to when they anticipate this problem will be resolved and ask if the claim should be resubmitted or appealed.

Q: Do physicians need to document in the catheterization report when conscious sedation is administered and when the procedure ends, in order to prove that the duration of conscious sedation was at least 15 minutes?

A: Yes.

Q: What do we do if conscious sedation is not administered? For example, if the patient insists on driving home after the procedure, or refuses any sedation?

A: In that case the conscious sedation codes are not used. Otherwise, the case is coded as usual.

Please contact Dawn Gray, SCAI’s director of reimbursement and regulatory affairs, at dgray@scai.org with any additional questions regarding correct coding for moderate sedation or if you continue to experience claim denials for what you believe to be properly billed claims.

Disclaimer: SCAI is committed to making every reasonable effort to provide accurate information regarding the use of CPT®, and the rules and regulations set forth by CMS for the Medicare program. However, this information is subject to change by CMS and does not dictate coverage and reimbursement policy as determined by local Medicare contractors or any other payor. SCAI assumes no liability, legal, financial, or otherwise, for physicians or other entities who utilize this information in a manner inconsistent with the policies of any payors or Medicare carriers with which the physician or other entity has a contractual obligation. CPT® codes and their descriptors are copyright 2016 by the American Medical Association.
The 2016 ACC/AHA Guideline Update includes recommendations for Effient

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Review the updated Effient recommendations in the 2016 ACC/AHA Guideline

Effient (prasugrel) tablets
MARCH 2017

INTERNATIONAL SYMPOSIUM ON LEFT ATRIAL APPENDAGE (ISLAA 2017)
Date: March 3 - 4, 2017
Location: Austin, TX

SCOTTSDALE INTERVENTIONAL FORUM (SIF 2017)
Date: March 8 - 11, 2017
Location: Scottsdale, AZ

APRIL 2017

2017 ARCH: ADVANCED REVASCULARIZATION CHAPTER X
Date: April 20 - 22, 2017
Location: St. Louis, MO

MAY 2017

SCAI 2017 SCIENTIFIC SESSIONS
Date: May 10 - 13, 2017
Location: New Orleans, LA

June 2017

SVM 28TH ANNUAL SCIENTIFIC SESSIONS
Date: June 14 - 17, 2017
Location: New Orleans, LA

DECEMBER 2017

SCAI 2017 FALL FELLOWS COURSE
Date: December 9 - 12, 2017
Location: Las Vegas, NV

For more information on SCAI-sponsored and co-sponsored events, please visit: www.scai.org/Education/Calendar.aspx.