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This PracticeUpdate Career Guide provides a sampling of expert commentaries in a convenient print periodical. These and more are also available online at PracticeUpdate.com

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Interested in learning more about our opportunities: Teni Bangert, MAA, FASPR 402-328-3384, tibangert@stez.org
Transvenous cardiac pacing began almost 60 years ago with the observation by Furman and Schwedel that stimulation of the right ventricular (RV) endocardium produced ventricular contraction.¹ For many years thereafter, RV apical lead placement represented the transvenous pacing model of choice. Attempts at His bundle pacing to create normal ventricular electrical systole were fragmentary and largely abandoned because of lead placement difficulties. When a pacing-induced cardiomyopathy from the resultant LBBB during RV apical pacing became known, high septal and outflow RV pacing was attempted, mostly replaced by cardiac resynchronization therapy (CRT). CRT, although successful, is cumbersome by requiring a left ventricular lead, expensive, and has a higher complication rate than simple RV pacing.

Fortunately, several groups re-investigated the concept of His bundle pacing, and preliminary findings indicate that it is feasible, practical, and beneficial.²,³,⁴ The success of His bundle pacing represents the top 2018 story because it
restores normal physiologic electrical ventricular depolarization with a single lead even in the presence of most bundle branch blocks, and it eliminates the need for left ventricular pacing and the potential for pacing-induced cardiomyopathy. Further lead and electrode development will make His bundle pacing the optimal choice for ventricular pacing. I anticipate it will replace CRT. As such, it becomes a therapeutic paradigm shift in the world of pacing individuals, most especially women, will be interested in these treatments. The condition is androgenic alopecia.

References

https://www.practiceupdate.com/c/74883

Douglas Zipes MD
Distinguished Professor, Professor Emeritus of Medicine, Pharmacology and Toxicology; Emeritus Director, Division of Cardiology and Krannert Institute of Cardiology, Indiana University School of Medicine Indianapolis, Indiana

Academic Cardiologists

The Division of Cardiology at Stony Brook University Hospital is recruiting full-time academic cardiologists for heart failure, non-invasive imaging, consultative cardiology, interventional and electrophysiology at the Assistant, Associate and Full Professor levels to practice in the largest hospital in Suffolk County, serving the eastern half of Long Island.

The successful applicant will become an integral part of an established, growing, innovative and highly awarded faculty practice charged with delivering excellent patient care in both inpatient and outpatient settings, providing mentorship and teaching to cardiology fellows, medical residents and students while working within the context of an academic program to support (through clinical activity or leadership through scholarly activity) an active clinical/translational research program. Enjoy competitive salaries commensurate with experience and training (and including an excellent benefits package with medical, dental, vision, short/long term disability, life, retirement, malpractice coverage and productivity bonuses).

Applicants should possess outstanding clinical, technical, and interpersonal skills, be board certified in Internal Medicine and BC/BE in both cardiovascular disease and/or their cardiology subspecialty and must be licensed in the state of New York by the time of appointment.

- Successful applicants in non-invasive imaging should have broad (at least level II) training in echocardiography (including TTE, TEE, 3D and stress echo) and prior support of TAVR, LAA occlusion, structural mitral and intraoperative echocardiography are desirable. Opportunities to read nuclear studies are also available.
- Successful applicants in heart failure and cardiomyopathy and ventricular assist device programs will join four Advanced Heart Failure and Transplant board certified cardiologists and enjoy leadership opportunities in Heart Failure, Cardiomyopathy and Mechanical Circulatory Support are available.
- Successful applicants in general cardiology should have a desire to provide outstanding inpatient or outpatient patient care, with leadership roles and educational opportunities available.
- Successful applicants in electrophysiology will join a group performing complex EP including placement of Watchman, leadless Micro and subcutaneous defibrillators and should be trained in atrial fibrillation ablation, device placement, lead extraction, and advanced VT ablation, and have a strong aptitude for teaching in the field of EP and cardiovascular medicine.
- Successful applicants in interventional cardiology should be exceptionally trained in cardiac catheterization and intervention, with training in peripheral intervention or structural heart preferable but not mandatory.

Our cardiology group currently includes 20 cardiologists (8 non-invasive cardiologists, 5 interventionalists, 3 electrophysiologists, and 4 heart failure physicians) who are part of a Heart Institute including 5 cardiothoracic and 5 vascular surgeons. Based on Long Island with multiple hospital affiliations, Stony Brook Cardiology serves a 600+ bed university hospital with over 250,000 ED visits a year and a Level I trauma center, two community hospitals and a VA hospital. The division comprises an established cardiovascular disease fellowship training program, an ICAEL accredited Echo Lab, an ICANL accredited Nuclear Lab, Interventional and Structural Heart programs, perpetual Joint Commission Certified/recertified Ventricular Assist Device and Heart Failure Programs and a comprehensive Cardiac Surgery program.

To qualify for an appointment as Associate Professor or Professor, the candidate must meet the School of Medicine’s criteria for Appointment, Promotion and Tenure located at: http://medicine.stonybrookmedicine.edu/facultysenate/committees/apt

The medical center is located on Long Island, less than 60 miles to New York City (and easily accessible by car or train) with a plethora of diverse multi-cultural communities, award-winning school districts, ethnic foods, colleges, sports, and superb cultural events. Nestled between historic mansions, fishing villages, wine country, beaches and the Hamptons, cardiologists have a choice of year-round activities at state parks, theaters, museums, golf courses, art centers, historic sites and marinas.

Employment offers are contingent on the satisfactory outcome of a standard background screening.

Interested applicants can inquire further or forward a brief statement of interest and their curriculum vitae to:

Hal Skopick, MD, PhD
Division Chief of Cardiology, Stony Brook Medicine
100 Nicolls Road, HSC 16-080, Stony Brook, NY 11794-8167
Fax: 631-444-1054 or
Email: DOMFACULTYAPPLICANTS@StonyBrookMedicine.edu

For a full position description, or application procedures, visit: www.stonybrook.edu/jobs
(Ref. # F-9917-18-12-F or Ref. # F-9929-19-01-F or Ref. # F-9881-19-01-F)

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Meet me at ACC, Booth 208
Selina Irby, Physician Recruiter
Tel: 406-414-5186 | Cell: 406-599-0674
sirby@bozemanhealth.org
The Division of Cardiology at the Drexel University College of Medicine is seeking full time academic physician(s) for the position of Clinical Cardiac Electrophysiologist with expertise in complex ablations, device implantation, and lead extraction. Applicants must have an MD or MD PhD degree and be board certified in Internal Medicine and Cardiovascular Disease. They must also be board certified or board eligible in Cardiac Electrophysiology. Academic appointment would be commensurate with experience. The Drexel University College of Medicine is affiliated with Hahnemann Hospital, which is an American Academic Heath Systems institution and one of the top Cardiovascular Centers in the Philadelphia region.

Please Forward your CV to:
Steven P. Kutalek, MD
Associate Chief, Division of Cardiology
Chief, Clinical Cardiac Electrophysiology
Drexel University College of Medicine
245 N. 15th Street. MS #470
Philadelphia, PA 19102
c/o rcb29@drexel.edu

The Drexel University College of Medicine supports an inclusive and diverse environment. We are seeking applications from diverse candidates inclusive of women, racial/ethnic minorities and others. Drexel University College of Medicine is an equal opportunity and affirmative action employer.

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- **Cardiology practice is on the forefront of Advanced Cardiovascular Imaging with the latest technology,** including Cardiac CT, MR, 3D Echo, Cardiac PET and SPECT with AC. Additionally recent investment in a multimillion dollar state of the art cardiovascular information system allows for both onsite and remote access, unifying all aspects of cardiovascular care.

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At Berkshire Health Systems we understand the importance of balancing work with a healthy personal lifestyle. World renowned music, art, museums, and theaters include Mass MoCA, Tanglewood, and Jacobs Pillow are at your doorstep. The Berkshires offer year round recreational activities from skiing to kayaking. Excellent public and private schools make this an ideal family location.

**Contact us for this exciting opportunity:**
Shelly Sweet
Physician Recruitment Specialist
at msweet@bhs1.org or apply online at berkshirehealthsystems.org

Berkshire Health Systems, an award winning healthcare system, is seeking a Non-invasive Cardiologist to join a growing practice. This is an opportunity to practice at a University of Massachusetts Medical School affiliated teaching hospital located in the beautiful Berkshires, a community offering world class quality of life.
Do you want a sure-fire way to start an argument? Bring up the topic of sports pre-participation screening using an ECG in a group of cardiologists interested in the cardiac problems of young athletes. Approximately 40% of the group will insist that pre-participation screening with an ECG saves lives by detecting conditions associated with exercise-related sudden cardiac death (SCD) such as hypertrophic cardiomyopathy (HCM), right ventricular cardiomyopathy (RVCM), long QT syndrome (LQTS), and Wolff-Parkinson-White (WPW) syndrome. Another approximately 40% of the group will insist that pre-participation screening with an ECG puts athletes at risk for inappropriate implantable cardiac defibrillator (ICD) insertions, unnecessary ablations, exercise restriction, and general anxiety. The other 20% (all fellows or recent fellowship graduates) will be searching for the correct answer on their smart phones but to no avail because we do not know what approach is best.

A central problem in determining the best approach to saving athletes’ lives is that no one knows for sure how big a problem SCD during sports participation is. The incidence for high school athletes has generally been estimated at 1 death per year for every 200,000 athletes. The risk is much higher in men than in women, and some estimates of SCD death in young athletes have been as high as 1 death for every 3100 National Collegiate Athletic Association (NCAA) Division I basketball players.

So, for my best of sports cardiology article in 2018, I selected the article from Sanjay Sharma’s research group in London entitled, “Outcomes of Cardiac Screening in Adolescent Soccer Players.” I selected this article because it demonstrates the complexity of the problem and raises an additional troubling question.

These authors screened 11,168 adolescent elite soccer players whose mean age was 14 ±1.2 years (mean ± SD), using medical history, physical examination, ECG, and echocardiography on all athletes. The studies were reviewed by expert cardiologists. Consequently, the study does not
directly address the benefit of adding only an ECG to the history and physical examination because the participants also underwent echocardiography. It also does not provide insight into how using non-expert cardiologists would affect the results.

Even after this extensive screening and follow-up assessment by expert cardiologists, 830 of the athletes (7%) required additional studies and 409 (4%) required cardiac magnetic resonance imaging. This demonstrates that the medical cost of ECG screening is not simply the cost of the ECG but the cost of subsequent testing. It also reminds us that elite athletes are different and their cardiac findings often mimic dangerous medical conditions.

A total of 42 athletes (0.38%) were found to have cardiac disorders associated with SCD including HCM in 2 athletes, ARVC in 2, dilated cardiomyopathy in 1, LQTS in 3, anomalous coronary artery in 2, aortic valve disease in 2, and WPW ECG pattern in 26. The athletes with anomalous coronary artery and aortic valve disease and 24 of the athletes with WPW pattern underwent corrective surgery or ablation before returning to athletics. These 24 with WPW had evidence of dangerous accessory pathways on electrophysiology study. Only 2 of these 42 athletes had symptoms. Whether or not to operate on athletes with some of these disorders, and no symptoms, is always difficult because the decision can be affected by the athlete’s desire to compete and the clinician’s desire to take as little risk as possible. All of the surgical patients and 24 of the WPW pattern patients returned to soccer after their procedure.

Most importantly, however, despite this extensive screening, the annual incidence of SCD was high at 1 SCD per 14,794 screened athletes. The reason for this high rate is unclear, but raises a troubling additional question. Because SCD seems higher in Division 1 NCAA basketball players and in these elite soccer players, does intense exercise training increase the risk of SCD? This sounds like heresy; however, there is no questioning the widely recognized benefits of moderate physical activity, but the benefits of the extreme training required for highly competitive endurance sports.

This question has been asked before, and perhaps, should be asked again.

References


https://www.practiceupdate.com/c/76212

Paul Thompson MD
Physician Co-Director, Hartford Healthcare Cardiovascular Institute, Hartford, Connecticut; Professor of Medicine, University of Connecticut, Storrs, Connecticut
In the earlier days of cardiac imaging tests, initial reports focused on sensitivity and specificity to detect or rule-out disease (such as anatomic CAD by invasive angiography), and subsequent investigations often then focused on assembling large databases to examine the prognostic capabilities of the imaging modality associating the imaging results with outcomes. Virtually every test we use—exercise ECG, stress nuclear/echo/CMR or coronary CT angiography (CCTA)—has followed this path.

Only more recently has a higher level of rigor been pursued, with randomized trials comparing existing modalities or a new modality with a more standard-care testing approach. These trials are often referred to as “pragmatic effectiveness” trials, with the “pragmatic” reflecting the practical nature of the design, and the “effectiveness” referring to the downstream management after the test, which is usually not strictly defined by the trial protocol but left up to the clinicians managing the patient. The outcomes are associated with the randomized initial test strategy assignment, but are also highly influenced by the subsequent medical or invasive management driven by the test results, which may be variable. Examples include the WOMEN trial, which randomized women with suspected CAD and low-intermediate likelihood to exercise ECG or exercise SPECT imaging as the initial test.\(^1\) The results showed similar 2-year outcomes, but with lower costs in the exercise ECG group. More recently, the PROMISE trial randomized just over 10,000 people with suspected CAD and low-intermediate likelihood to either an “anatomic” strategy (CCTA) or a “functional” strategy (mostly stress nuclear or echo) as the initial test.\(^2\) There were no significant outcome differences at approximately 2 years. From a resource utilization standpoint, there were fewer catheterizations with normal coronaries in the initial CCTA group but a greater number of total catheterizations and revascularizations in the CCTA group. This latter finding is often seen in CTA studies.
In 2015, Newby and colleagues reported the primary results of the SCOT-HEART trial, a very large (>4000 patients) randomized strategy trial.\(^3\) The trial was a randomized comparison of diagnosis and management based on CCTA usually in addition to exercise ECG results vs standard of care (mostly exercise ECG) alone. Their primary results published in 2015 in The Lancet showed better diagnostic certainty of angina/CAD for the patients randomized to have CCTA. The follow-up reported in that paper (average, 1.7 years) showed a trend toward fewer fatal or nonfatal myocardial infarctions (MI) in the CCTA group and a trend in the usual signal of slightly more revascularizations in the CCTA group.

My vote for story of the year in cardiac imaging was for their long-term follow-up study, which was presented in August at the European Society of Cardiology meeting and published simultaneously in NEJM.\(^4\) In this study, the SCOT-HEART investigators reported on the 5-year long-term follow-up outcome data of their trial. With the longer follow-up, the authors reported a 41% reduction in an outcome composite of coronary heart disease death and nonfatal MI, driven entirely by the MI component. Importantly, in contrast to many previous studies, the group randomized to CCTA did not have an excess of catheterizations or revascularizations. This is the first study to show an impact on outcomes (here, nonfatal MI) within the context of a randomized trial of testing strategies and pragmatic effectiveness management.

Mechanisms or explanations for observed results such as these can be challenging to discern from randomized comparisons of diagnostic testing. The relative magnitude of reduction in MI is quite large, and in fact the relative risk reduction exceeds that observed in many therapeutic trials. It is unlikely that revascularization played a role, as the incidence was balanced across the groups and, in general, revascularization does not reduce MI risk in stable outpatients. As discussed in the accompanying editorial,\(^5\) more likely is the better use of medications such as aspirin and statins in the CCTA group, as the presence of CAD—even nonobstructive CAD—would have been more obvious in a greater number of patients following CCTA compared with exercise ECG. But even that explanation falls somewhat short. A careful look at the medication use over time in the two groups does show more aspirin and statin use after CCTA imaging, but the differences are modest. In a therapeutic trial of, say, the new PCSK9-inhibitors, such as the FOURIER trial,\(^6\) where 100% of the intervention group is initially on the drug while 0% are on the drug in the control group, a 38% reduction in nonfatal MI was seen. In SCOT-HEART, the absolute difference in aspirin and stain use was on the order of approximately 10%, with a larger relative risk reduction in MI than seen in FOURIER. Thus, the mechanism underlying the striking reduction in MI risk in SCOT-HEART is unclear.

The SCOT-HEART data are in contrast to those of the PROMISE trial, where, with over 2 years of follow-up, no difference in outcomes was observed. Although patients in both trials had CCTA-based management as one randomization arm, the difference in the trials was the comparator arm. In SCOT-Heart, the comparator was predominantly exercise ECG (only ~10% of patients had an imaging stress test, nuclear or echo), whereas, in PROMISE, the comparator was predominantly stress imaging (only ~10% of patients had exercise ECG). One might interpret the totality of results from these two trials (as well as the more recent CRESCENT-II trial, comparing a “tiered” CT approach to exercise ECG) that there is now little role for exercise ECG in outpatients with suspected CAD, and that stress imaging or CCTA should lead to similar outcomes.

The SCOT-HEART trial joins the pantheon of randomized trials of diagnostic strategies for its novel finding of an association of initial CCTA with reduced MI risk. The data reinforce a general message regarding the importance of aggressive preventive measures when CAD is suggested (by any test!), so that the testing results can drive management well beyond simply being used for diagnosis of CAD.

References
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General Cardiologists
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