

APHRS NEWSLETTER

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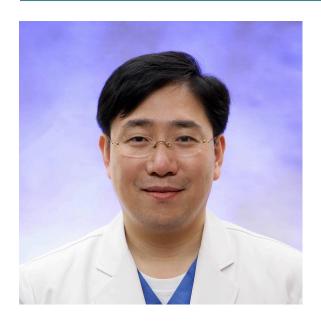
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GREETINGS FROM THE APHRS PRESIDENT

Prof. Hui-Nam Pak



It is with great pleasure and honor that I extend my warmest greetings to all members of the APHRS community. As the newly appointed President of the APHRS Board, effective January 2024, I am delighted to address and share my vision for the future of our esteemed society.

First and foremost, I express my heartfelt appreciation to all the Past Presidents, Executive Board Members, Committee Members, and Country Representatives for their outstanding leadership and tireless dedication in advancing the field of cardiac electrophysiology within the region. Building upon their remarkable achievements, I am committed to further elevating the APHRS's role as a global leader in promoting excellence, innovation, and collaboration in the field of heart rhythm disorders.

APHRS has a critical mission to educate our members and healthcare professionals involved in arrhythmia treatment across the region. Education remains the cornerstone of APHRS, and we are dedicated to providing our members and healthcare professionals with unparalleled educational resources even during the pandemic period or under Typhoon Saola.

As we look ahead, we must also confront the challenges presented by the diverse healthcare standards and arrhythmia practices within our region. This presents an opportunity for us to extend education to different regions and bridge the accessibility gap to treatment modalities. To ensure the sustained growth of our society, we must actively foster an inclusive environment that embraces diversity, promotes gender equality, and facilitates fruitful exchanges between scientists specializing in basic medicine and clinical practitioners. In the continuation to ensure the success of ablation and device-based therapies that require the expertise of multidisciplinary teams consisting of medical professionals from various fields, it is our responsibility to continue providing a platform where professionals from diverse disciplines can grow together by participating in our organization's activities and contributing their expertise and technological advancements.

Based on this background, I suggest the core values and specific goals of APHRS in 2024.

Core Value: "ONE EP GROWS UP TOGETHER"

Specific Goals: "BEST":

B: Basic Science & Digital Health;

E: Education;

S: Standardization & Scientific Journal;

T: Transparency

I am committed to addressing these challenges and seizing the opportunities. With the support of our dedicated officers and members, I am confident that we will achieve new milestones and positively impact the lives of cardiac arrhythmia patients in the Asia-Pacific region. I would like to ask for your open opinions, sincere support, and prayers for APHRS and a Happy New Year.

Hui-Nam Pak

President of Asia Pacific Heart Rhythm Society (APHRS) (Professor of Medicine, Yonsei University Health System)

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EP Lab Spotlight: The Electrophysiology Team of the University Heart Center Luebeck

Lorenzo Bartoli ¹, Jan-Per Wenzel ¹, Julia Vogler ¹, Christian Hendrik Heeger ¹, Karl-Heinz Kuck ², Roland Richard Tilz ¹

¹ Department of Rhythmology, University Heart Center Lübeck, University Hospital Schleswig-Holstein, Germany

Hospital Overview

The University Heart Center Luebeck is part of the University Hospital Schleswig-Holstein, a university hospital that resulted from a merger between the university hospitals in Kiel and Luebeck. The University Heart Center is located in Luebeck, a city in northern Germany with approximately 220,000 inhabitants (**Figure 1**). It comprises three departments: the Department of Cardiology, Angiology and Intensive Care Medicine, the Department of Cardiac and Thoracic Vascular Surgery and the Department of Rhythmology. As an advanced tertiary cardiologic center, we provide highly specialised services in emergency care, cardiovascular surgery, intensive care, anesthesiology, cardiovascular imaging, heart rhythm disorders, and both coronary and peripheral artery diseases.

Germany, like most countries of the Western Society, is facing the medical and economic challenges of an ageing society with a high burden of cardiovascular diseases. Notably, arrhythmias like atrial fibrillation are becoming an increasing problem. In recent years, the therapeutic options for managing these disorders have rapidly advanced due to significant medical progress. Successful therapy is achievable in many cases.



Figure 1: Location of Luebeck (left) and picture of the main entrance of the University Hospital Schleswig-Holstein, Campus Luebeck (right).

Department of Rhythmology

The electrophysiology section of the University Heart Center Luebeck was founded in the early 2000s. In 2015, Professor Roland Richard Tilz became the head of the electrophysiology team. Given the increasing specialisation of the provided care and the rising number of treated cases, in February 2022, the Department of Cardiology was officially transformed into two independent departments: the Department of Cardiology, Angiology and Intensive Care Medicine (director: Professor Ingo Eitel) and the Department of Rhythmology (director: Professor Roland Richard Tilz).

Since November 2019, we have two new state-of-the-art Electrophysiology laboratories at disposal (**Figure 2**), enabling the treatment of all types of cardiac arrhythmias using cutting-edge technologies, including two pulsed field ablation consoles (Boston and Abbott), two Cryo balloon consoles (Medtronic and Boston), as well as the innovative contact force sensing high-power short duration ablation catheters (QDOT Micro; Biosense Webster, and TactiFlex; Abbott Medical). Moreover, we use a suspended radiation protection system (Zerogravity) to minimise the operator's exposure to fluoroscopy (**Figure 2**). We use the newest version of Ensite (Ensite-X, Abbott Medical) and CARTO (V8, Biosense Webster) systems, allowing ultra-high-density mapping of complex arrhythmias.

² German Center for Cardiovascular Research (DZHK). Partner Site Hamburg/Kiel/Lübeck, Lübeck, Germany



Figure 2: Images of the electrophysiology laboratory of the University Heart Center Luebeck. The operator can use a suspended radiation protection system (Zerogravity) to minimise his exposure to radiation (left). A picture of the laboratory during a procedure (right).

Our team comprises four senior physicians and 19 residents (**Figure 3**). Our senior physicians have been trained in internationally renowned electrophysiologic departments and rely on a high degree of ablation and device therapy expertise. All arrhythmias, including complex atrial and epicardial ventricular tachycardias, are treated at our electrophysiological laboratory. We collaborate closely with other specialities, including cardiac surgeons, thoracic surgeons, the Department of Radiation Oncology, and the Institute for Robotics and Cognitive Systems. This close cooperation allows for high-risk and complex therapeutic approaches such as ablation procedures in patients with a left ventricular assist device, cardiac sympathectomy or stereotactic body radiation therapy (SBRT) to treat ventricular arrhythmias. Furthermore, we routinely perform left atrial appendage closure device implantations.

Recently, we implemented procedures with remote technical mapping support using the Ensite Connected Care and the Medinbox system. Through this innovative technology, the field technical engineer can assist us in performing even long and complex ablation procedures without the necessity of in-person availability. Our experience showed optimal procedural safety, efficiency, and safety (**Figure 4**).



Figure 3: The electrophysiology team of the University Heart Center Luebeck.



Figure 4: Procedure with remote technical support using the Medinbox system. In the upper row from right to left, the field technical engineer supporting remotely during the procedure, a 3D electroanatomical mapping with the EnsiteX platform, and the EGM recordings with the Claris system. In the lower row from right to left, stimulation recordings with the Claris system, a fluoroscopy image showing the position of the catheters, and the live recording of the electrophysiology laboratory.

Further proof of our substantial and long-term experience is that we are one of the first electrophysiological centers in Germany to allow same-day discharge after ablation of atrial fibrillation and benign arrhythmias. With over a year of experience, we have successfully conducted many procedures utilizing this approach. We also offer a special clinic for inherited cardiac arrhythmias and for syncope management. Due to the high competency of our team, complex cases are often referred to our clinic from other centres.

The number of performed ablations per year in our department has been increasing over the last years (**Figure 5**). In 2023, we performed more than 1000 ablations and more than 600 device implantations, including cardiac resynchronisation therapy (CRT) devices, conduction system pacing, subcutaneous implantable defibrillators (sICD), leadless pacemaker (Medtronic and Abbott) as well as transvenous lead extractions. We expect this upward trend of device and ablation procedures to continue in the coming years.

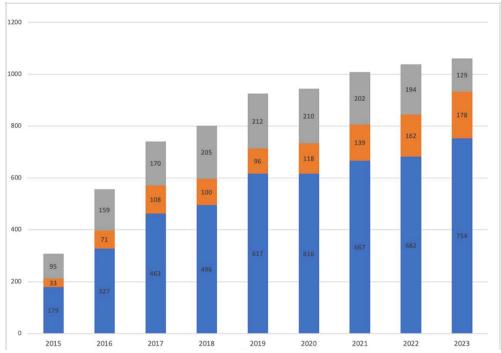


Figure 5: The ablation procedures performed in the last years in our department. In blue the ablation procedures of atrial fibrillation, in orange the ablation procedures of ventricular tachycardias and ventricular extrasystole, in grey all other ablation procedures.

Training

The German Society of Cardiology (DGK) acknowledges our clinic as a training facility for invasive electrophysiology and device procedures. We are also recognised as a European Heart Rhythm Association (EHRA) training centre since 2017. Indeed, physicians from several European and non-European countries have joined our team for their professional training. Research and clinical fellows from all over the world are welcome in our department. A German medical license is required for hands-on experience.

Academic Activity

With the University Hospital Schleswig-Holstein being an academic institute, research is an integral part of our corporate identity. Our electrophysiology team conducts a wide range of clinical studies. The results of our research projects and scientific cooperations have been published in many of the most prestigious journals over recent years including the European Heart Journal, Circulation Arrhythmia and Electrophysiology, Heart Rhythm, and EP Europace.

Some of our most significant achievements include the publication of the largest worldwide study on atrio-oesophageal fistula formation following atrial fibrillation ablation (POTTER AF)¹, relevant studies on cryoablation (Indi-freeze Trial and Yeti study series)^{2,3,4}, and the participation in relevant studies on pulsed-field ablation for atrial fibrillation (Manifest-PFA)⁵. Furthermore, we contributed to research on the use of high-power short duration and pulsed-field ablation (Fast and Furious study series)^{6,7}.

Currently, among other studies, we are coordinating and participating in several multicenter randomised controlled trials including the LALA-LAND-AF trial (NCT04240366), which aims at elucidating the role of left atrial appendage isolation in patients with persistent atrial fibrillation, the CABA-HFpEF trial (NCT05508256), which investigates the role of atrial fibrillation ablation in patients with heart failure with preserved ejection fraction, and the STYLE-AF study (NCT05563142), which compares a venous closure system versus manual compression for the management of vascular accesses following atrial fibrillation ablation with a single-shot device. Other relevant trials include the RAVENTA study (NCT03867747), which evaluates the role of stereotactic body radiation therapy (SBRT) for the treatment of ventricular arrhythmias, and the MATRIX VT study (NCT05964660), which aims to show that data from preprocedural contrast-enhanced cardiac computed tomography and optically-tracked 3D transthoracic echocardiography could be used to define better the ventricular arrhythmogenic substrate and the planning target volume for stereotactic arrhythmia radioablation therapy in patients with ventricular tachycardias.

Hospital Information

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X (formerly known as Twitter): https://twitter.com/RolandTilz, #EPLuebeck

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New International Cardiac Implantable Electronic Devices Guidelines Developed Jointly with APHRS in 2023

Dr. Pipin KojodjojoAsian Heart and Vascular Centre, Singapore

In 2023, APHRS partnered with other international Heart Rhythm Societies such as HRS and LAHRS to constitute collaborative writing groups staffed with experienced cardiac electrophysiologists to develop updated guidance in 2 key areas of CIED care - Cardiac Physiological Pacing and Remote Monitoring. This article summarises the key changes and important messages from these guidelines.

2023 HRS/EHRA/APHRS/LAHRS Expert Consensus Statement on Practical Management of the Remote Device Clinic

The COVID-19 pandemic has accelerated the global adoption of remote monitoring (RM) for CIED by eliminating the need for scheduled in-person device interrogations which often did not result in any change in clinical management, allowing for continued surveillance and care despite movement restrictions that were commonplace in Asia at the peak of the pandemic. Since the last international consensus statement was published in 2015, well conducted randomized controlled trials have re-affirmed the benefits of RM in terms of earlier detection of clinically significant events, shorter delays in intervention, less inappropriate shocks, improved device clinic efficacy and greater convenience for patients. The new Consensus Statement re-iterates the position that RM should be the standard of care for all CIED patients. With growing numbers of CIED implants, the workload in remote device clinics have increased exponentially, work which is largely unrecognized and insufficiently supported.

One key change in the 2023 Consensus Statement is a shift in emphasis from assigning roles and responsibilities to specific personnel such as those to be performed by a cardiac electrophysiologist to predefined tasks that should be carried out collectively by a remote device clinic team. These tasks include patient enrolment and education, scheduling, maximizing connectivity, troubleshooting, CIED data review and triage, responding to alerts, documentation and billing. RM team members should receive training and have sufficient time dedicated for RM. To this end, a minimum of 3.0 full time equivalent clinical or administrative staff per 1000 patients on RM is recommended.

The benefits of RM are proportional to the patients' degree of connectivity with the RM system. Thus, maintenance of long-term connectivity can only be maximized by patient and caregiver education, design of clear clinic policies and procedures to re-establish reconnection with patients who have disconnected. Advancement in RM technology and more patient-oriented interfaces can further enhance long term connectivity. The importance of the patient as a team-member in RM is also highlighted. (**Figure 1**) An engaged patient helps to maintain connectivity. Patient engagement is only possible through appropriate education, shared decision-making and clear transparent communication of clinical workflows and emergency action plans.

Increased emphasis is also placed on defining high priority events that should warrant prompt clinical action and customized programming to deactivate alerts that are clinically irrelevant. (**Figure 2**) In particular, indication-based programming is recommended for implantable loop recorders to reduce alert volumes. It is also recognized that pivoting from the traditional scheduled follow-up to alert-based monitoring whereby patients are only evaluated when prompted by unscheduled alerts, would reduce unactionable in-person clinical visits and focus clinical resources to patients that need attention the most, akin to providing care as needed rather than care as scheduled. One of the key barriers to adopting such a system is outdated reimbursement structures that have underfunded RM equipment and continue to base reimbursements on in-person scheduled visits.

The 2023 consensus document provides much welcomed, comprehensive guidance of the standards expected of a world-class RM clinic and a call to action for all stakeholders, which includes industry vendors and payors, to increase accessibility of RM to all CIED patients worldwide.

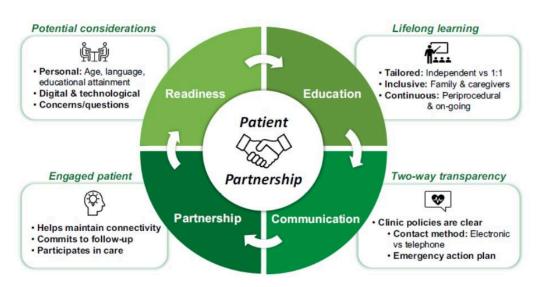
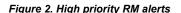
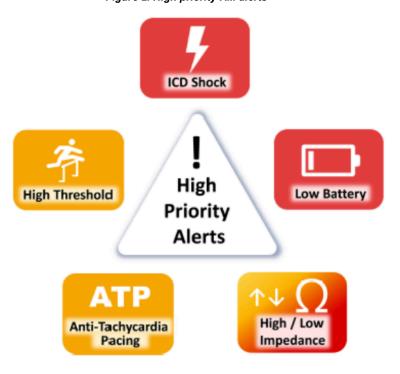


Figure 1. Patient as a key team member in RM





2023 HRS/APHRS/LAHRS Guideline On Cardiac Physiologic Pacing for the Avoidance and Mitigation of Heart Failure

Cardiac physiological pacing (CPP) refers to any form of cardiac pacing intended to restore or preserve ventricular synchrony and can be achieved either by engagement of the intrinsic conduction system via conduction system pacing (CSP) (includes His-Bundle (HBP) and left bundle branch area pacing (LBBAP)) and more established cardiac resynchronization therapy (CRT) using biventricular stimulation. It is well recognized that right ventricular pacing (RVP) results in dyssynchrony and approximately 12% of patients with substantial RVP will develop pacing-induced cardiomyopathy (PICM) during follow-up. For patients with bradycardia indications and likely to receive substantial ventricular pacing, the 2023 guidelines provide Class 2 recommendations for the use of CPP, in the form of either CRT or CSP, to reduce the risk of PICM. (Figure 3) If PICM occurs, upgrade to either biventricular CRT (Class I) and CSP (Class 2) is indicated. Even for patients with normal left ventricular ejection fraction (LVEF), do not require substantial RVP and have narrow QRS (most likely patients with sinus node dysfunction), both RV lead with minimization of RVP (Class 2a) and LBBAP (Class 2b) are both acceptable options. CRT however should not be used for such patients. (Class 3)

Our use of biventricular CRT in heart failure patients with broad QRS complexes is well-established by numerous multi-centre randomized landmark studies. Patient subsets with LBBB and broader QRS (>140 to 150ms) derive greater benefit from CRT. In recent years, large observational registries and small randomized controlled trials have demonstrated that CSP with correction of the underlying bundle branch block was at least non-inferior, if not better in improving LV dysfunction and reducing adverse clinical events, in heart failure patients whom fulfilled conventional CRT indications. Given the substantially greater strength of evidence to support CRT particularly for patients with LVEF ≤ 35%, LBBB and Qtrs. of more than 150ms (subgroup most likely to benefit), the level of recommendation remains much stronger for CRT (maintained at Class 1A) compared to CPP (Class 2b). (Figure 4) In the event that effective CRT cannot be delivered, a cross-over or bailout to CPP is advised. (Class 2a) There is a new class I CRT recommendation for female patients with QRS durations of 120 to 149ms as sub-analyses of the MADIT-CRT and RAFT Trials showed improved survival and fewer heart failure events compared with men. As LBBB itself may impair LV function, for LBBB patients with LVEF of 36% to 50%, NYHA class II to IV and QRSd ≥ 150ms, CPP is a new Class 2a recommendation.

For non-LBBB heart failure patients with QRS of more than 120ms and LVEF≤ 35%, both CRT with biventricular pacing and CPP are indicated. (Class 2a - 2b) Likewise, both CRT and CSP are recommended (Class 2) for AF patients undergoing AV junction ablation, the former for those with LVEF ≤ 50% and the latter for all patients regardless of LVEF.

Uniquely for biventricular CRT, there is a Class I level recommendation for the preferential use of quadripolar LV pacing leads, to avoid phrenic nerve pacing and need for repositioning. Furthermore, there is, for the first-time guidance, on optimization with a recommendation to achieve the narrowest possible paced QRS duration during CRT. (Class 2a) Electrocardiographic documentation of conduction system capture during CSP is strongly recommended. (Class 1) There are also new guidances on the use of CPP for congenitally corrected transposition of the great arteries and AV block without anatomic repair and congenital AV block with myocardial dysfunction.

The new guidelines incorporate much of the new CSP data that has become available since the last set of international guidelines published by ESC in 2021. As robust data from randomized CSP trials became available, alongside new information about long term CSP lead performance and extractability, the level of recommendation for CSP is anticipated to be stronger with better definition of patient subsets more likely to benefit from this new paradigm in pacing.

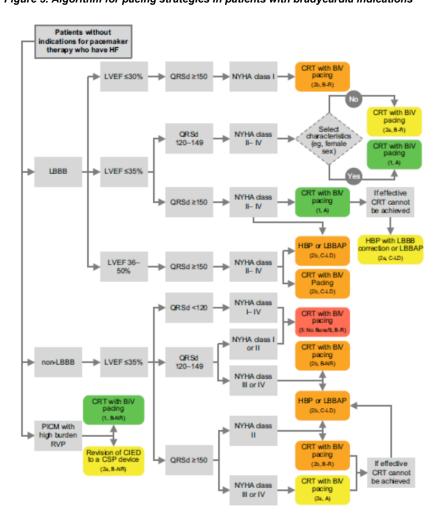


Figure 3. Algorithm for pacing strategies in patients with bradycardia indications

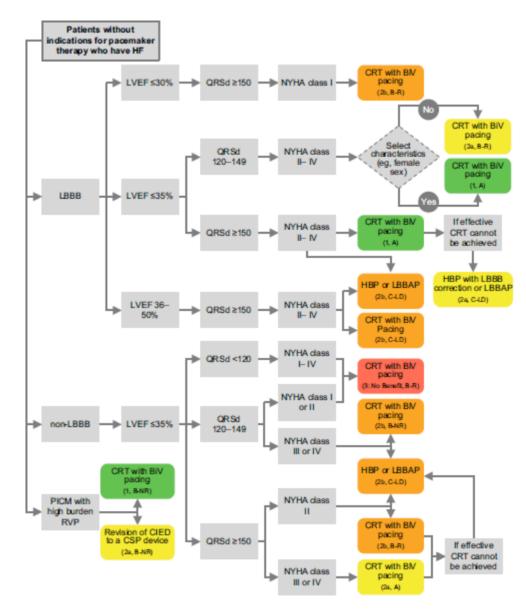


Figure 4. Algorithm for patients with heart failure without bradycardia indications

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- 2. 2023 HRS/APHRS/LAHRS guideline on cardiac physiologic pacing for the avoidance and mitigation of heart failure (https://onlinelibrary.wiley.com/doi/10.1002/joa3.12872)

WEBINAR SUMMARY: EP JOURNAL CLUB 2023 (Part 3)

Johnson & Johnson Institute





APAC EP Journal Club

A series of educational sessions

Faculty-Part 1



Prof. Raymond SyUniversity of Sydney

Faculty - Part 2



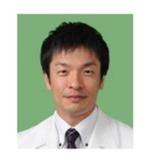
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Faculty - Part 3



Prof. Minglong Chen
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Hospital of Nanjing
Medical University

Faculty - Part 4



Dr. Akira Mizukami Kameda Medical Center



Part 1 Substrate beyond PVI

Jul 27

Part 2
High Density
Mapping in
AT/Flutter

Sep 14

China

Part 3 His-Purkinje related VT

Nov 9

Japan

Part 4 AVNRT

On Sep 14, 2023, the third session of EP Journal Club (EPJC) 2023 was hosted by the electrophysiology team led by Professor Minglong Chen. Prof. Chen is a physician scientist who serves as the director of Heart Center of The First Affiliated Hospital of Nanjing Medical University, as well as the vice-chairman of Chinese Society of Pacing and Electrophysiology. He is a professor of medicine (cardiology) at Nanjing Medical University. Prof. Chen is also the director of cardiac electrophysiology which covers 4000 ablations and 1000 devices annually. Prof. Chen has been elected as an APHRS country representative of China, Sub-committee Chairman of Global Affairs and Industry Affairs of APHRS.

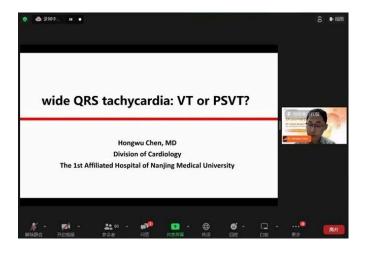




EPJC is a professional education event initiated by Biosense Webster, Johnson & Johnson, with Electrophysiological experts from China, Australia, Japan and Thailand. The experts share electrophysiology literature on a rotating basis, categorized by different topics. They are responsible for one topic each, leading the audience through the literature progress and sharing their hands-on experience. This course is aimed at Electrophysiologists with 1-5 years of experience, targeted at the audience in the Asia-Pacific region who have been endorsed by APHRS this year.







The session was based on case reviews, characterized by recent seminal journal publications, with the theme of this session was "His-Purkinje related VT". Prof Chen led the Chinese faculties who were Dr Hongwu Chen, Dr. Weizhu Ju, Dr. Xiaohong Jiang, Dr. Hailei Liu, Dr. Zidun Wang and Dr. Nan Wu. Prof. Chen led a lecture about Classification and Possible Mechanism of His-Purkinje Related Ventricular Arrhythmias. Other faculties made presentation with the topics of Idiopathic left fascicular reentrant VT, Bundle Branch Reentrant VT, Ventricular Arrhythmias Originating from Papillary Muscle, Idiopathic Accelerated Idioventricular Rhythm Originating from the Right Bundle Branch, Premature

Ventricular Complexes Originating from the Terminal End of Retro-Aortic Root Branch and VF Induced by His-Purkinje Related PVCs. In the Q&A portion, mapping technique and ablation strategy of His-Purkinje Related Ventricular Arrhythmias were discussed.

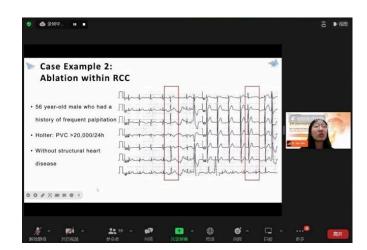
| Idiopathic Accelerated IdioVentricular Rhythm originating from the right bundle branch — case report— Zidun Wang, Hailei Liu, Minglong Chen 2023.09.11 | Dr. Akira Mizuk... |



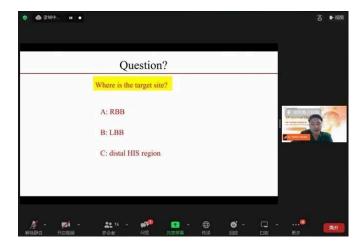


In addition to Prof Chen and the Chinese faculty who shared the excellent lectures, Prof. Sy from Australia and Dr. Akira Mizukami from Japan were the moderators of the session. They shared their valuable experiences in the discussion sessions. The panelists, Dr. Koji Yasumoto and Dr. Kaishi Otsuka joined the Q&A portion and discussion. Besides, the event attracted Dr. Nogami who interacted with the faculty

and the audience. With the wonderful lectures, various interaction, case reviews, Q&A discussion and multi-platform promotion, such as iEP, the number of audiences reached 260 who expressed that they had a deeper understanding for His-Purkinje related VT.







Virtual webinars have become a great platform where our experts and new electrophysiologists in the field gather together to share experience and learn from each other. We look forward to future sessions of the APAC EPJC.

Medtronic

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Proven safe. Proven effective. Proven design.



Systematic Review, Meta-Analysis¹

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312 patients 25 centers Medtronic CareLink™1

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Approval was granted based on the 3830 LBBAP real-world evidence evaluation, a robust data compendium encompassing > 20,000 patients.

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1.6% total procedural septal perforation rate at implant yet none with clinical sequela

Low and stable pacing thresholds¹

The average pacing threshold remained < 1.0V after 18 months of follow-up

Full-system MR Conditionality

3830 is approved for left bundle branch area pacing with MR Conditional systems.^{†‡}

[†]Model 3830 Jeads are indicated for left bundle branch area pacing in bradycardia patients only, as an alternative to right ventricular pacing in a single or dual chamber pacing system [‡]Medtronic MRI SureScan™ systems.

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Proven design

3830's central cable, 4.1 French lumenless design and fixed helix minimizes lead mechanical stress relative to stylet-delivered lead designs.¹

Reference

1 SelectSecure 3830 Left Bundle Branch Area Pacing Safety and Efficacy Utilizing RWE. Data on file.



26 September – 29 September 2024 International Convention Centre, Sydney

Abstract submissions opening soon!



26th - 29th September 2024



International Convention Centre Sydney, Australia



Over 2,500 attendees from 40 countries worldwide

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Associate Professor Andreas Pflaumer

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Associate Professor Eddy Kizana

The University of Sydney and Westmead Hospital

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