SICVD
SINDH INSTITUTE OF CARDIOVASCULAR DISEASES

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Lifeline of Sindh

Connecting Hearts, Saving Lives – Across Every Beat of Sindh

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EDITORIAL

FROM THE EDITOR'S DESK

It is with great pleasure that I present the second edition of the SICVD Newsletter. This issue reflects the sustained dedication and professional commitment of our team to providing meaningful insights and timely updates for our esteemed readership.

SICVD's steadfast mission to deliver hope and compassionate cardiac care to countless patients was graciously acknowledged by **Ms. Aseefa Bhutto Zardari, the First Lady of Pakistan,** during her visit for inauguration of the new SICVD building in Nawabshah. Her encouraging words resonate strongly with our institutional vision and serve as a source of inspiration as we continue to pursue excellence in cardiovascular care.

We express our profound gratitude to the Government of Sindh for its continued support and collaborative partnership, which have been instrumental in enabling SICVD to provide world-class medical services and to expand its healthcare network across the province. Through this collective effort, we remain committed to advancing a healthier and more prosperous future for the people of Sindh.

I extend my sincere appreciation to our Executive Director for his guidance and encouragement in bringing this edition to publication, to the Editorial Board for their dedicated efforts in curating and refining its content, and to our Publishing Manager for his professionalism and commitment to its design and production.

We welcome constructive feedback and valuable suggestions from our readers, which will assist us in further enhancing the quality, relevance, and impact of this publication.

Prof. Amin M. Khuwaja
Editor-in-Chief
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The editorial board is not responsible for the information and views incorporated in this newsletter. The articles are contributed by individuals and departments. The information regarding certain diseases does not serve as medical advice and person suffering from one of such diseases should contact a qualified physician.

Ms. Aseefa Bhutto Zardari

Honorable, First Lady of Pakistan

Ms. Aseefa Bhutto Zardari, while inaugurating the SICVD Satellite Center in Nawabshah, paid glowing tribute to the remarkable efforts of the Sindh Institute of Cardiovascular Diseases (SICVD) administration, faculty, and allied health professionals for their unwavering commitment to public service.

She acknowledged their dedication to providing free, high quality cardiac care with the support of Government of Sindh to the poorest segments of society, calling it a true reflection of compassion, professionalism, and social responsibility.

She also expressed sincere gratitude to the philanthropist who generously donated land for the establishment of the hospital, describing this contribution as an exemplary act of public welfare.

She commended the Government of Sindh for its continuous support in facilitating the construction, operationalization, and sustained delivery of services at SICVD satellite centers across the province.

Dr. Azra Fazal Pechuho

Honorable, Minister for Health & Population Welfare

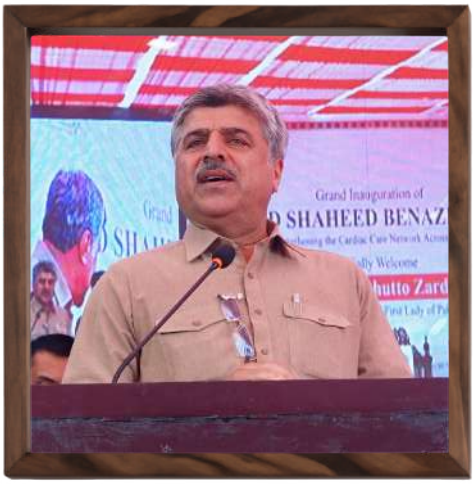
The inauguration of **SICVD Shaheed Benazirabad** marks a historic step in expanding accessible, world-class cardiac care to the people of Central Sindh. This state-of-the-art hospital embodies our commitment to ensuring that no citizen is deprived of life-saving cardiac treatment due to distance or financial constraints.

SICVD Shaheed Benazirabad will offer a comprehensive range of cardiac services, including 24/7 emergency cardiac care, primary angioplasty, pediatric cardiology, and, in the near future, stroke intervention programs. The hospital's establishment will significantly improve access to high-quality cardiac care in a region where previously patients had to travel long distances for treatment. By expanding these essential services, we aim to reduce health disparities, save lives, and provide dignity and hope to every patient.

I would like to emphasize the vital role of SICVD and its dedicated team of doctors, nurses, paramedics, and support staff. Their dedication, professionalism, and compassion ensure that every patient receives timely and high-quality care. This level of service reflects the core values of our public healthcare system: equity, accessibility, and excellence.

Finally, I want to acknowledge and sincerely appreciate the generosity of the donor who provided the land for SICVD Shaheed Benazirabad. Their selfless contribution in the spirit of serving humanity has been instrumental in making this hospital a reality. It is through such collaborations between the government, healthcare professionals, and philanthropic partners that we can continue to strengthen public healthcare infrastructure and make life-saving services available to every citizen of Sindh.

SICVD Shaheed Benazirabad is more than a hospital; it is a promise to the people of Sindh that quality, free, and compassionate cardiac care is within their reach, whenever they need it.



Syed Ghulam Mustafa Shah

Honorable, Deputy Speaker, National Assembly of Pakistan

I am delighted to extend my heartfelt congratulations on the inauguration of **SICVD Shaheed Benazirabad**, a purpose-built facility that brings advanced, free, and life-saving cardiac care to the people of Central Sindh. This hospital is a testament to the vision and commitment of the Government of Sindh and the dedicated team at SICVD, who have worked tirelessly to expand healthcare services and ensure that quality cardiac care is available to all, especially those in underserved communities.

The establishment of SICVD Shaheed Benazirabad is a milestone for public healthcare in Sindh. It will provide 24/7 emergency cardiac services, primary angioplasty, pediatric cardiology, and in the near future, stroke intervention services, directly at the doorstep of the people. Such initiatives reflect a strong commitment to reducing health disparities, saving lives, and promoting equitable access to healthcare.

I would like to particularly acknowledge and commend the **Government of Sindh** and SICVD leadership for their unwavering efforts to make these vital services accessible to thousands of citizens. This facility will serve as a lifeline for the people of Shaheed Benazirabad and surrounding regions, giving hope and reassurance to families who previously faced challenges in accessing specialized cardiac care.

In support of this ongoing mission, I am pleased to share that I have reserved a plot of land in Sakrand City for the establishment of a SICVD Chest Pain Unit (CPU). This initiative will further strengthen emergency cardiac services in the region and ensure that timely treatment reaches even more patients in need.

I extend my best wishes to the entire team at SICVD Shaheed Benazirabad and SICVD Network. May this facility continue to serve as a beacon of **hope, health, and humanity**, improving the lives of countless patients in Sindh and setting a benchmark for public healthcare in Pakistan.

Prof. Jawaid Akbar Sial

Executive Director, SICVD

It is with great pride and satisfaction that I witness the inauguration of **SICVD Shaheed Benazirabad**, a purpose-built facility that brings timely, advanced, and completely free cardiac care to the people of Central Sindh. I would like to extend my heartfelt thanks to **Honorable First Lady of Pakistan, Ms. Aseefa Bhutto Zardari**, for gracing the occasion as the Chief Guest and inaugurating this vital institution. Her presence reflects a shared commitment to healthcare equity and the well-being of the people of Sindh.

This hospital represents our steadfast commitment to ensuring that no patient is ever denied access to life-saving cardiac treatment due to financial constraints or geographical barriers. SICVD Shaheed Benazirabad has been designed to provide comprehensive cardiac services, including 24/7 emergency cardiac care, primary angioplasty, pediatric cardiology, and, in the near future, a stroke intervention program. By offering these services at the doorstep of the community, the hospital will serve as a lifeline for thousands of patients, providing not only medical care but also hope and reassurance to families across the region.

This achievement would not have been possible without the unwavering support of the **Government of Sindh**, whose vision and commitment to strengthening public healthcare institutions have been instrumental in realizing this project. I also extend my heartfelt gratitude to our medical and paramedical staff, whose professionalism, dedication, and compassion continue to make SICVD a model for public healthcare in Pakistan.

SICVD Shaheed Benazirabad is not just a hospital; it is a promise to the people of Sindh that quality, free, and advanced cardiac care is accessible, equitable, and delivered with dignity. As we continue to expand our network and services, we remain committed to bringing life-saving healthcare closer to underserved and remote communities, ensuring that every patient receives timely and effective treatment.

This inauguration reaffirms our mission to save lives, reduce health disparities, and provide hope to those who need it most. Together with our partners in government, philanthropy, and healthcare, SICVD will continue to advance the standard of cardiac care across Sindh and set a benchmark for public health service nationwide.

INAUGURATION OF SICVD SHAHEED BENAZIRABAD: EXPANDING ACCESS TO FREE CARDIAC HEALTHCARE

The Sindh Institute of Cardiovascular Diseases (SICVD) achieved another major milestone with the inauguration of **SICVD Shaheed Benazirabad**, further strengthening its mission to provide free and world-class cardiac healthcare across Sindh. The inauguration ceremony was graced by **Ms. Aseefa Bhutto Zardari, First Lady of Pakistan**, as the Honorable Chief Guest, underscoring the importance of expanding equitable healthcare services for the people of the province.

The ceremony was attended by Dr. Azra Fazal Pechuho, Honorable Minister for Health, Sindh; Syed Ghulam Mustafa Shah, Honorable Deputy Speaker of the National Assembly; Prof. Jawaid Akbar Sial, Executive Director SICVD; along with Members of the Provincial and National Assemblies from Shaheed Benazirabad and faculty members.

SICVD Shaheed Benazirabad is a **55-bedded, state-of-the-art cardiac hospital** designed to deliver comprehensive and specialized cardiac care. The facility offers 24/7 cardiac emergency services, primary angioplasty, and pediatric cardiac care, all completely free of cost. With the continued support of the Government of Sindh, preparations are also underway to introduce stroke intervention services at the center in the near future, further enhancing its scope of life-saving care.

The journey of SICVD Shaheed Benazirabad began on April 12, 2018, when it was initially established at Peoples Medical University Hospital, Nawabshah. To overcome space limitations and meet the growing demand for cardiac services, the facility has now been relocated to a purpose-built hospital, significantly expanding its capacity and enabling improved service delivery for the people of Central Sindh.

During her visit, Ms. Aseefa Bhutto Zardari toured various departments of SICVD Shaheed Benazirabad, including the cardiac emergency unit, inpatient wards, and other key clinical areas. She interacted with doctors, nurses, and healthcare staff to review the facilities and services being provided. The Honorable First Lady also met patients and their attendants, inquired about their health, and sought feedback regarding the treatment and care being provided at the hospital. She expressed satisfaction over the standard of facilities and appreciated the dedication of the medical and paramedical staff in delivering compassionate, patient-centered, and free cardiac care.

Ms. Aseefa Bhutto Zardari also appreciated the tireless efforts of SICVD and the Government of Sindh in strengthening the public healthcare system and expanding free cardiac services across the province. She acknowledged that institutions like SICVD have become a lifeline for the people of Sindh, particularly for underprivileged and marginalized communities who otherwise face significant barriers in accessing quality medical treatment.

Over the years, SICVD has emerged as Pakistan's largest free cardiac care network, comprising 10 full-fledged cardiac hospitals and an extensive Chest Pain Unit (CPU) program across Sindh.

The inauguration of SICVD Shaheed Benazirabad marks another significant step toward ensuring that advanced cardiac and emergency care is accessible to underserved and remote communities, reaffirming SICVD's unwavering commitment to saving lives and serving humanity with dignity and compassion.

Abdul Nasir
Head of Marketing & Spokesperson
NICVD/SICVD, Karachi.

BEACON OF HOPE SICVD, NAWABSHAH SATELLITE CENTER

The Nawabshah Satellite Cardiac Facility is an important addition to cardiovascular care. It offers services around the clock for patients with serious and complex heart conditions. The center operates 24/7 Primary PCI (Percutaneous Coronary Intervention). This means patients having an acute myocardial infarction can get immediate, life-saving treatment. The continuous availability of primary PCI services significantly cuts down door-to-balloon time and makes the facility a reliable option for emergency cardiac care in the area.

Along with emergency treatments, the center also provides early invasive PCI for patients with unstable angina, high-risk non-ST elevation myocardial infarction, and other conditions that need prompt but not urgent coronary evaluation. This method follows global cardiac care guidelines and improves results through early diagnosis and effective treatment.

The Nawabshah Satellite also specializes in essential life-saving procedures like Temporary Pacemaker (TPM) insertion for patients with symptomatic bradyarrhythmias or conduction issues. The team is well-equipped to perform pericardiocentesis, which is a critical procedure used to relieve cardiac tamponade and restore hemodynamic stability. These skills show the center's ability to handle complex cardiac emergencies effectively.

A dedicated Chest Pain Unit at Sanger serves as the first point of contact for patients with chest pain or suspected heart issues. It has trained staff who can quickly provide diagnostics, interpret ECGs, assess risk, and transfer high-risk cases to the catheterization lab. Its organized workflow reduces delays and improves patient safety by ensuring timely interventions.

For thorough non-invasive evaluation, the facility provides a wide range of diagnostic tests including Transthoracic Echocardiography (Echo) and Dobutamine Stress Echocardiography (DSE). These tests are essential for evaluating cardiac structure, function, wall-motion issues, valvular disease, and ischemia. Together, they increase diagnostic precision and help guide treatment decisions for both acute and chronic heart conditions.

Overall, the Nawabshah Satellite Cardiac Facility brings together emergency intervention, advanced diagnostics, and specialized cardiac procedures in one location. Its round-the-clock interventional capability, skilled staff, and complete diagnostic services ensure high-quality, accessible heart care for the community it serves.

Dr. Aslam Zardari
Associate Professor Adult Cardiology
SICVD, Nawabshah

LAUNCHING TRANSCATHETER ASD DEVICE CLOSURE: A TECHNICAL ADVANCEMENT FOR OUR CENTER

Our cardiac center (SICVD HYDERABAD) has marked an important milestone with the successful introduction of transcatheter Atrial Septal Defect (ASD) device closure services. This is the first time such a procedure has been offered within our center and anywhere in our city, making it a significant step forward for cardiac care in the region. Considering how common secundum ASDs are and the long-term complications they may cause if untreated, establishing this service locally represents a major improvement in the management of congenital heart disease.

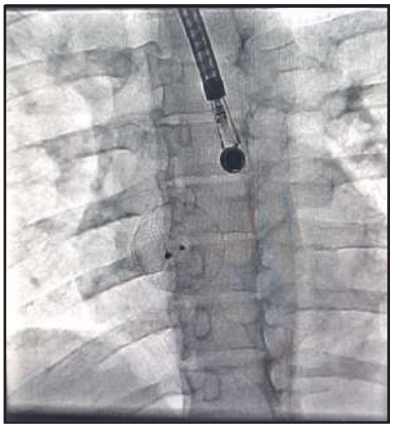
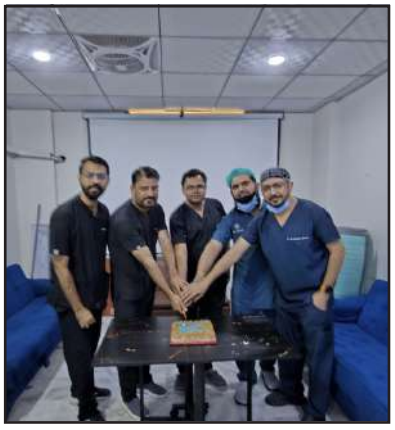
Transcatheter ASD closure provides a less invasive alternative to open-heart surgery for appropriately selected patients. It offers several clear advantages, including fewer complications, shorter hospital stays, and a quicker return to normal activity. Before we launched this service, patients had no option but to travel to Karachi or other major centers for device closure. This often resulted in treatment delays, higher financial costs, and difficulty ensuring regular follow-up. Having this facility available locally now removes many of those barriers and allows families to receive timely care closer to home.

The first few ASD device closures performed at our center were completed smoothly and with excellent outcomes. All patients recovered well, and most were able to return home within 24 hours of the procedure. These early successes reflect not only the benefits of the transcatheter approach but also the readiness and coordination of our team in adopting this advanced intervention safely.

Since introducing the service, we have performed a total of 10 ASD device closures. Our patients have ranged in age from 8 to 40 years, highlighting the broad spectrum of individuals who benefit from ASD closure when indicated. Each case was successfully completed without major complications, and follow-up evaluations have shown encouraging results. These outcomes reinforce the importance of offering this procedure within our own community.

Establishing this service has also streamlined the entire care pathway. From initial evaluation to imaging, defect assessment, and follow-up visits, all components of care are now available on-site. Standardized protocols have been put in place for post procedure review, echocardiographic assessment, and monitoring for potential complications such as arrhythmias or residual shunting.

The introduction of ASD device closure services represents an important advancement for our congenital heart disease program. It reflects our commitment to improving access to high-quality, evidence-based cardiac care and strengthens our center's role as a growing regional facility for advanced cardiovascular services.

Dr Muhammad Asif Khan
Associate Professor Pediatric cardiology
SICVD HYDERABAD

MODIFIED MANOUGIAN PROCEDURE

SICVD cardiac surgery department has successfully performed more than 900 open heart surgeries at Hyderabad including extensive and complex cardiac surgeries.
Asian descents have often smaller absolute aortic root dimensions as compare to individuals in developed countries. (1)

This anatomical difference poses a significant challenge requiring specialized techniques to optimize outcomes our patient was 32 years old lady diagnosed with severe aortic valve stenosis with aortic annulus of 18mm, Due to severe shortness of breath we planned to proceed with aortic valve replacement (AVR) but the challenge was her annulus size and height of the coronary ostium from aortic annulus, so we decided to perform AVR with aortic root enlargement (Modified Manougian Procedure) with Coronary artery bypass grafting.

Steps of procedure involved:

- Aortic root dissected
- aortic valve excised
- Patch anastomosis done
- Prosthetic valve implanted
- Coronary grafting done
- Hemostasis and closure

Patient weaned off from bypass with minimal inotropic support, post-operative TEE showed normal functioning bio-prosthetic aortic valve with peak and mean gradient of 26mmHG and 15mmHg respectively, with LVEF of 60%. Post-operative course went smooth and patient was discharged home on 4th postoperative day.
On one month follow-up patient was clinically stable, with repeat echo-cardiogram showed normal bi ventricular function and normal functioning prosthetic valve. The patient and family expressed extreme satisfaction and happiness with surgical outcome during the follow-up visit reporting significant improvement in symptoms and quality of life.

Dr. Amir Khawaja
Assistant Professor Cardiac Surgery
SICVD, Hyderabad

WHEN POSTPARTUM FEVER PERSISTS: A RARE CASE OF TRICUSPID VALVE INFECTIVE ENDOCARDITIS

Infective endocarditis involving the tricuspid valve is an uncommon clinical entity in patients without a history of intravenous drug use, particularly in the postpartum period. We report a case of a young postpartum female who developed persistent fever following a home-based vaginal delivery and was subsequently diagnosed with Staphylococcus aureus tricuspid valve infective endocarditis complicated by large vegetations and abscess formation

A 22-year-old woman from Larkana, previously healthy and with no known comorbidities, presented to the Emergency Department with a history of persistent high-grade fever for one month. Her illness began soon after delivering an intrauterine dead baby at eight months of

gestation through a spontaneous vaginal delivery conducted at home by a midwife. Since the delivery, she had been experiencing intermittent fever reaching 102°F, accompanied by chills, rigors, generalized weakness, and exertional breathlessness consistent with NYHA class II. She denied having cough, urinary symptoms, abdominal pain, joint pain, headache, vomiting, seizures, or any history suggestive of tuberculosis or chronic medical illness.

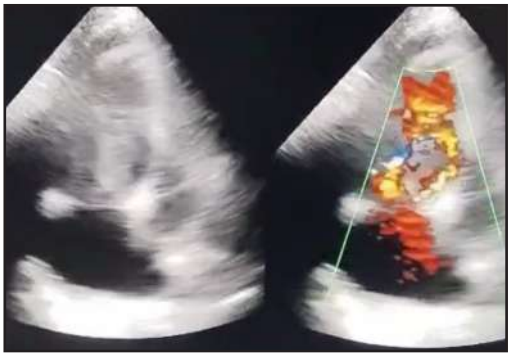
On examination, she appeared ill and pale, with a pulse of 120 bpm, temperature of 101°F, blood pressure 130/80 mmHg, and respiratory rate 24/min with oxygen saturation of 96% on room air. Her jugular venous pressure was raised to 6 cm above the sternal angle. A parasternal heave was palpable, and a grade III systolic murmur was audible at the left lower sternal border, increasing with inspiration. Abdominal examination revealed hepatosplenomegaly, with both liver and spleen palpable 2 cm below their respective costal margins, firm and non-tender. Her chest and neurological examinations were unremarkable.

Initial investigations showed anemia with hemoglobin of 9.2 g/dL, leukocytosis with a total leukocyte count of 15,400/µL, and normal renal function and electrolytes. Viral serology for hepatitis B, hepatitis C, and HIV was negative. Ultrasound abdomen confirmed mild hepatosplenomegaly without ascites. A significant finding emerged when her blood culture grew Staphylococcus aureus.

Transthoracic echocardiography revealed normal left-sided cardiac chambers and systolic function (LVEF 60%). However, the right atrium and right ventricle were enlarged, and a vegetation was visualized on the tricuspid valve, causing moderate to severe tricuspid regurgitation with mild pulmonary hypertension. A subsequent transesophageal echocardiogram provided a clearer picture, showing multiple large vegetations on the tricuspid valve associated with abscess formation, leading to very severe tricuspid regurgitation. No vegetations were seen on the pulmonary valve, and biventricular systolic function remained preserved. Because of ongoing fever despite treatment, urgent cardiothoracic surgical consultation was advised.

The patient was initially started on intravenous vancomycin and ceftriaxone, which were continued for 10 days with no improvement in fever. After infectious disease consultation, the vancomycin dose was increased and ceftriaxone was continued for another week, yet the fever persisted. A second infectious disease review led to a change in therapy to intravenous meropenem and oral linezolid, which were administered for 16 days. The fever finally subsided, although repeat TEE showed that the large vegetations and abscess formation remained unchanged. Due to persistent structural destruction of the tricuspid valve despite adequate antimicrobial therapy, the patient was again referred for urgent cardiothoracic surgical evaluation.

This case highlights a rare but serious occurrence of postpartum infective endocarditis involving the tricuspid valve in a young woman without traditional risk factors such as intravenous drug use or previous cardiac disease. The postpartum period, especially following a home delivery under non-sterile conditions, may predispose to bacteremia leading to infective endocarditis. Staphylococcus aureus, known for its aggressive tissue-invasive behavior, can rapidly cause large vegetations and perivalvular abscesses, as seen in this patient. The case emphasizes the need for high clinical suspicion when encountering postpartum women with persistent fever, as early diagnosis and multidisciplinary management are crucial for preventing complications and improving outcomes.



Dr. Fayaz shah
Associate Professor Adult Cardiology
SICVD Larkana

SICVD TANDO MUHAMMAD KHAN ACHIEVES REMARKABLE MILESTONE IN STROKE CARE

In a groundbreaking achievement, the Sindh Institute of Cardiovascular Diseases (SICVD) Tando Muhammad Khan has successfully completed 100 mechanical thrombectomy and 100 thrombolysis procedures, providing life-saving stroke interventions to patients in the region. What's even more remarkable is that these complex procedures were offered completely free of cost to patients, making quality healthcare accessible to those who need it most.

Located in Tando Muhammad Khan, SICVD is a beacon of hope for patients suffering from cardiovascular diseases. The institute's dedication to providing cutting-edge care at no cost to patients is a testament to its commitment to improving healthcare outcomes in the region.

A Milestone in Stroke Care

Stroke is a leading cause of death and disability worldwide, and timely intervention is crucial for effective treatment. Mechanical thrombectomy and thrombolysis are two critical procedures that can significantly improve outcomes for stroke patients. The fact that SICVD Tando Muhammad Khan has achieved this milestone is a testament to the skill and dedication of its medical team.

Free-of-Cost Services: At Doorstep for Patients

The cost of stroke intervention can be prohibitively expensive, making it inaccessible to many patients. SICVD Tando Muhammad Khan's decision to offer these services free of cost is a game-changer for patients in the region. This initiative has ensured that financial constraints do not come in the way of life-saving treatment.

Government Support and Team Effort

This achievement is a result of the tireless efforts of the SICVD administration and the support of the Government of Sindh. The institute's commitment to providing quality healthcare to the people of Sindh is evident in its achievements.

A Message of Hope

This milestone is not just a celebration of the SICVD team's achievement but also a message of hope to patients suffering from cardiovascular diseases. It sends a strong message that quality healthcare is within reach, and that financial constraints should not be a barrier to accessing life-saving treatment. The SICVD Tando Muhammad Khan team deserves congratulations for this remarkable achievement. Here's too many more milestones and continued excellence in patient care!

About SICVD Tando Muhammad Khan

The Sindh Institute of Cardiovascular Diseases (SICVD) Tando Muhammad Khan is a leading healthcare institution providing specialized cardiac care as well Stroke intervention for people of Sindh With a team of expert cardiologists and stroke interventionist and 24/7 state-of-the-art facilities. SICVD is committed to delivering quality healthcare services to those in need.

Dr. Ghazanfar Shah
Associate Professor Adult Cardiology
SICVD TMK

SICVD MARKS ANOTHER MILESTONE WITH LAUNCH OF CHEST PAIN UNIT IN SANGHAR

The Sindh Institute of Cardiovascular Diseases (SICVD) has achieved another significant milestone in its mission to provide timely and free cardiac emergency care with the inauguration of a **Chest Pain Unit (CPU) in Sanghar**, located near the DHO Office at Civil Hospital, Sanghar.

The inauguration ceremony was led by Prof. Jawaid Akbar Sial, Executive Director SICVD, and was attended by senior officials, medical professionals, and members of the local community. The establishment of this Chest Pain Unit further strengthens SICVD's extensive emergency cardiac care network across Sindh, aimed at reducing cardiac-related mortality through early diagnosis and rapid intervention.

Speaking on the occasion, Prof. Jawaid Akbar Sial expressed his satisfaction over the continued expansion of SICVD's services and reaffirmed the institute's commitment to public healthcare. He stated that the launch of the Chest Pain Unit in Sanghar reflects SICVD's resolve to ensure that **life-saving cardiac care is available at the doorstep of every citizen**, without any financial burden.

He highlighted that Chest Pain Units play a critical role in the early management of heart attack patients by providing immediate diagnosis, stabilization, and timely referral to tertiary cardiac centers when required. Each unit is fully equipped with trained doctors and nursing staff, ECG facilities, essential cardiac medications, and emergency response systems, enabling rapid and effective care during the crucial golden hours.

The newly inaugurated Sanghar Chest Pain Unit will operate **24 hours a day, seven days a week**, offering completely **free-of-cost emergency cardiac services** to the local population. This initiative is expected to significantly improve survival rates and outcomes for cardiac patients in the district and surrounding areas.

With the addition of this facility, SICVD continues to reinforce its position as **one of the world's largest public-sector cardiac care networks**, serving millions of patients through its state-of-the-art cardiac hospitals and an extensive network of Chest Pain Units across Sindh.

Abdul Nasir
Head of Marketing & Spokesperson
NICVD / SICVD, Karachi

PARALYSIS TO POWER – AWARD-WINNING STROKE RESCUE AT SICVD SUKKUR

On 10 October 2025, a 65-year-old shopkeeper from Ghotki was brought to SICVD Sukkur after he suddenly developed left-sided weakness and inability to speak. His family acted quickly, arriving within the crucial therapeutic window. At triage, the patient had a NIHSS score of 12–14, indicating a moderate-to-severe acute ischemic stroke. Immediate NCCT and CTA were performed, which revealed a highly challenging tandem lesion a severe right ICA ostial occlusion combined with a right MCA blockage. This complex anatomy is known for procedural difficulty, delayed recanalization, and higher morbidity if not managed swiftly.

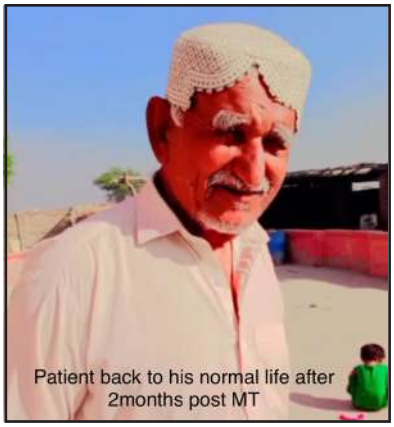
Recognizing the urgency, the multidisciplinary stroke team proceeded for emergency mechanical thrombectomy (MT) under the leadership of Dr. Muhammad Hashim Kalwar, Associate Professor of Cardiology & Stroke Interventionist, SICVD Sukkur. Right femoral access was obtained using an 8 Fr sheath. An Avigo guidewire was carefully navigated across the extremely tight ICA ostial lesion and parked into an MCA branch. However, due to the severity of the ostial obstruction, the Fubuki sheath could not cross the lesion. To overcome this barrier, the team skillfully performed pre-dilatation using a 4.0 × 15 mm coronary NC balloon, successfully creating a passage for the neuro-interventional inventory.

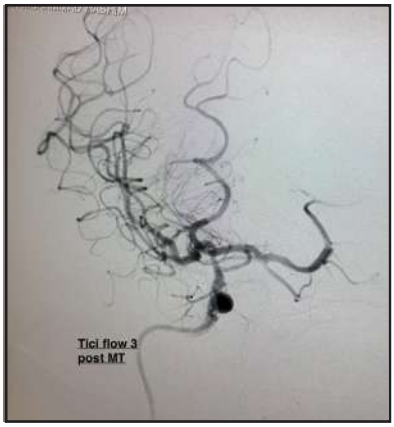
With the track restored, a React aspiration catheter was advanced, and a remarkable technical success, the team achieved TICI 3 reperfusion on the first pass by ADAPT (A Direct aspiration 1st pass technique).

The patient showed dramatic neurological improvement within hours, regaining strength and speech. Within two weeks, he had returned to his independent normal life, representing an outstanding recovery for a tandem-lesion stroke.

This compelling and technically demanding case was presented by Post-Fellow Interventional Cardiologist Dr. Tahir Mumtaz at the Leaders Track Conference, GMMMC Sukkur, on 22 November 2025. The presentation secured 2nd position in the complex case category, receiving praise from Principal Prof. Saleh Muhammad Channa and senior faculty members. The academic activity was proudly supported by Pharmevo Pharmaceuticals.

SICVD Sukkur expresses deep appreciation to Executive Director SICVD, Prof. Dr. Jawaid Akbar Sial, whose visionary leadership continues to elevate stroke care in Sindh. Special acknowledgment is also extended to Dr. Irfan Amjad Lutfi, pioneer in establishing stroke intervention services at SICVD Sukkur.
A triumph of precision, preparation, and teamwork transforming paralysis into power and giving a patient his life back.





Dr. Muhammad Hashim
Associate ProfessorAdult Cardiology
SICVD, Sukkur

DIASTOLIC DYSFUNCTION ASSESSMENT ON TRANSTHORACIC ECHOCARDIOGRAPHY: INSIGHTS FROM THE 2025 ASE GUIDELINES

Diastolic dysfunction (DD) is a condition characterized by impaired relaxation and increased stiffness of the left ventricle (LV), leading to elevated filling pressures. It is a key contributor to heart failure with preserved ejection fraction (HFpEF), which accounts for nearly half of all heart failure cases.

Transthoracic echocardiography (TTE) remains the cornerstone in the non-invasive assessment of diastolic dysfunction (DD), offering real-time insights into left ventricular relaxation, filling pressures, and chamber compliance.

Core Parameters for DD Assessment

Mitral Annular e' Velocity: A cornerstone marker of LV relaxation, with abnormal values defined as septal e' <6 cm/s, lateral e' <7 cm/s, or average e' <6.5 cm/s. Reduced e' velocity indicates impaired relaxation.

E/A Ratio: Reflects the balance between early (E) and late (A) diastolic filling. A reduced ratio (<0.8) suggests impaired relaxation, while an elevated ratio (>2) indicates increased left atrial pressure (LAP).

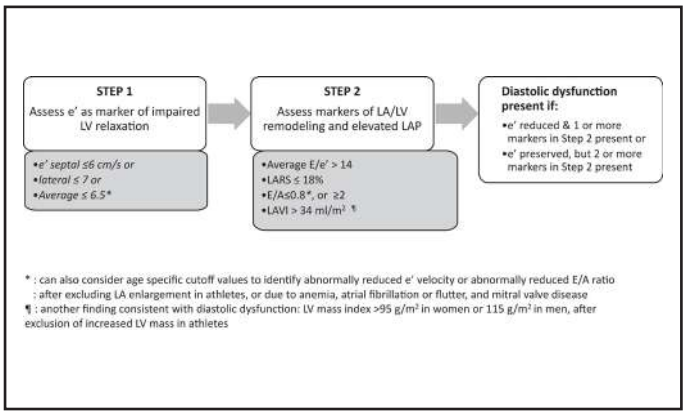
E/e' Ratio: A surrogate for LV filling pressures, with values >14 strongly correlating with elevated LAP.

Left Atrial Volume Index (LAVi): Enlarged LA volume (>34 mL/m²) serves as a marker of chronic LAP elevation.

Left Atrial Reservoir Strain (LARS): A novel parameter derived from speckle-tracking echocardiography, with values <18% indicating elevated LAP.

Pulmonary Vein Ar-A Duration: A difference >30 ms between pulmonary vein Ar duration and mitral A duration suggests elevated LV end-diastolic pressure (LVEDP).

Peak Tricuspid Regurgitation Velocity: Helps estimate pulmonary pressures, which may rise in advanced DD.



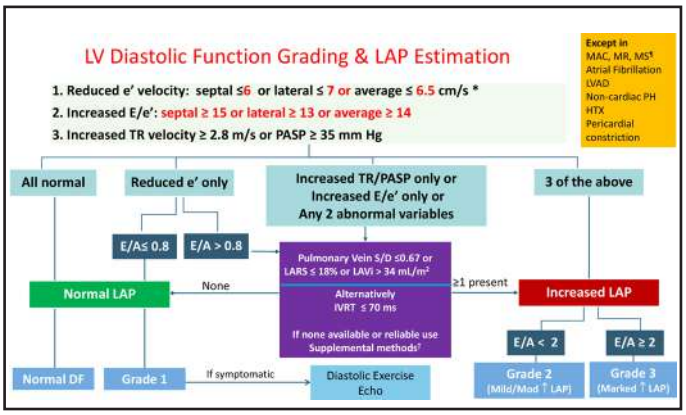


Image courtesy of the American Society of Echocardiography, 2025 Guidelines.

Special Populations

Tailored assessments are essential for patients with atrial fibrillation, valvular heart disease, or pulmonary hypertension.

Advances in Imaging

Emerging techniques, such as left atrial strain and artificial intelligence (AI)-assisted echocardiography, are enhancing diagnostic accuracy. AI can automate measurements and reduce indeterminate cases.

Conclusion

Diastolic dysfunction is a clinically significant condition that often precedes symptomatic heart failure. Its early detection is vital, especially in patients with preserved ejection fraction. Echocardiography provides a comprehensive, non-invasive window into diastolic mechanics, enabling timely diagnosis and risk stratification. With the integration of novel parameters and AI, clinicians are better equipped than ever to identify DD and guide management. As cardiovascular care evolves, mastering DD assessment remains essential to improving outcomes in heart failure

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RUPTURE OF NON-CORONARY CUSP SINUS OF VALSALVA INTO THE RIGHT ATRIUM: A RARE CAUSE OF ACUTE HEART FAILURE

Interesting Case Report at SICVD TMK

Introduction

Rupture of the sinus of Valsalva (RSOV) is a rare structural cardiac emergency that may lead to sudden hemodynamic collapse. While most ruptures arise from the right coronary sinus, involvement of the non-coronary sinus with rupture into the right atrium (RA) is exceedingly uncommon. Immediate recognition through echocardiography and timely surgical repair are vital for survival. This report highlights a successfully operated case managed at SICVD TMK, illustrating the life-saving role of echo diagnosis and surgical intervention.

Case Presentation

A 38-year-old male, previously healthy, presented to SICVD TMK emergency with sudden onset dyspnea, palpitations, and progressive fatigue over 48 hours. He denied fever, trauma, or prior cardiac disease. On examination, he was tachycardic (HR 118/min), hypotensive (BP 92/58 mmHg), and exhibited overt respiratory distress. A prominent, continuous high-frequency murmur was audible over the right parasternal border.

Urgent transthoracic echocardiography (TTE) revealed a saccular aneurysmal dilation arising from the non-coronary sinus of Valsalva. Color Doppler imaging demonstrated a continuous high-velocity jet entering the right atrium, consistent with ruptured non-coronary sinus of Valsalva into RA. Continuous-wave Doppler showed a significant left-to-right shunt with a pressure gradient of 80 mmHg. RA and RV were mild dilated with mild functional tricuspid regurgitation. The aortic valve appeared structurally normal, with no significant regurgitation.

Given the rare rupture site and need for detailed anatomical definition, a transesophageal echocardiogram (TEE) was performed, confirming a discrete perforation at the base of the non-coronary cusp directly communicating with the RA.

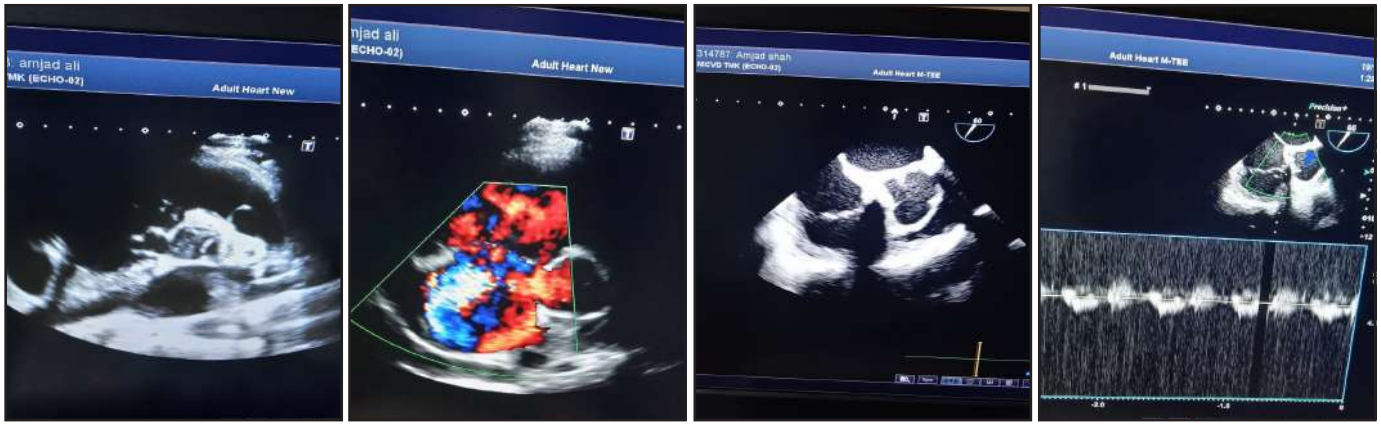
Management & Surgical Repair

The patient was taken for urgent surgical repair. Intraoperatively, a 6–7 mm defect was identified in the non-coronary sinus with direct RA communication. The defect was closed using a Dacron patch, restoring the integrity of the aortic root. No residual shunt was observed on intraoperative TEE.

Postoperatively, the patient stabilized rapidly. A follow-up TTE on day three showed complete resolution of the shunt, normalization of RA/RV dimensions, and preserved LV function. The patient was discharged home in stable condition on postoperative day six.

Conclusion

This operated case highlights the critical importance of timely echocardiographic evaluation in diagnosing rare lesions such as RSOV from the non-coronary sinus into the RA. Early identification and prompt surgical repair can prevent catastrophic heart failure and ensure excellent outcomes. SICVD remains committed to showcasing such unique structural heart cases to enhance clinical knowledge and patient care.



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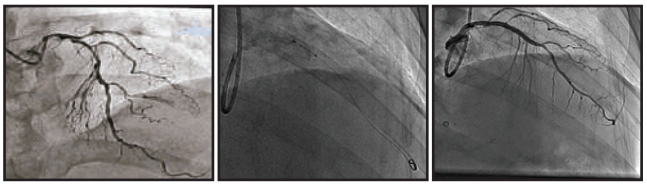
BREAKING CALCIFIED BARRIERS: HANDS-ON IVL WORKSHOP TRAINING AT SICVD BALDIA

Intravascular Lithotripsy (IVL) is an innovative calcium-modifying technology designed for the treatment of severely calcified coronary arteries, utilizing acoustic shock waves delivered through a specialized balloon to fracture both superficial and deep calcium, thereby facilitating optimal stent delivery and expansion. IVL is indicated for heavily calcified lesions, under-expanded stents, and diffuse or concentric calcium, particularly when conventional balloon angioplasty is insufficient. Compared with other calcium-modification techniques—such as rotational atherectomy, orbital atherectomy, and excimer laser atherectomy—IVL offers several advantages: it does not require wire exchange, is technically simpler, generates minimal particulate debris, carries a lower risk of no-reflow or perforation, and does not require extensive operator training. While atherectomy devices mechanically ablate or sand calcium, necessitating higher procedural skill and carrying greater risk, IVL gently fractures calcium at low pressure with minimal vessel trauma. The procedure involves crossing the lesion with a guidewire, advancing the IVL balloon, delivering lithotripsy pulses at low pressure, followed by balloon expansion, stent deployment, and final angiographic assessment. IVL is generally well-tolerated, with uncommon complications including vessel dissection, balloon rupture, perforation, arrhythmias, or coronary spasm, making it a safe and effective modality for managing complex calcified coronary lesions.

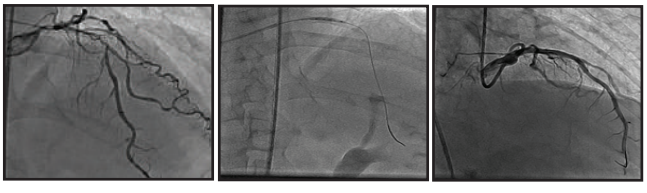
SICVD Hospital, Baldia Town, Karachi conducted a **successful IVL workshop on 19th November 2025.**

Our team performed two highly challenging procedures on patients with severely calcified coronary lesions—both completed with excellent outcomes, demonstrating the remarkable effectiveness of IVL technology in complex PCI.

CASE 01 - 71-year-old hypertensive male with CCS III angina for 2 months not resolved by medicines , and a history of PCI to the RCA (Aug 2025) presented with severe calcified LAD disease. He underwent successful LM–LAD PCI with two DES after calcium modification using IVL, achieving optimal stent expansion and an excellent final angiographic result.



CASE 02 - 70-year-old hypertensive male with a history of NSTEMI. Coronary angiography showed severe distal left main disease and a heavily calcified LAD. He underwent successful LM–LAD PCI with two DES after calcium modification using an IVL catheter, achieving optimal stent expansion and an excellent final angiographic result.



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LEFT BUNDLE BRANCH AREA PACING (LBBAP) AT SICVD TMK

The Sindh Institute of Cardiovascular Diseases (SICVD) network stands as the prime cardiology institute network across the Sindh province, dedicated to advancing patient care through the adoption of cutting-edge medical technologies and interventions. SICVD TMK (Tando Muhammad Khan), in particular, has consistently demonstrated a commitment to incorporating the latest techniques to ensure the best possible outcomes for its patients.

A notable recent achievement for SICVD TMK is its pioneering role in implementing a relatively new and highly advantageous cardiac pacing technique known as Left Bundle Branch Area Pacing (LBBAP). This marks a significant milestone, as SICVD TMK has become the first institute in Sindh outside of Karachi to successfully perform this procedure.

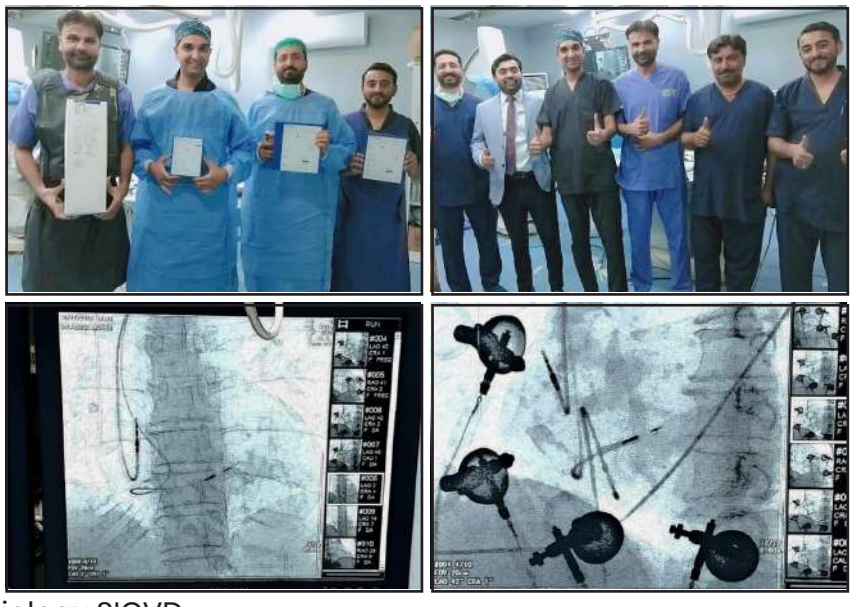
LBBAP represents an important shift in the worldwide approach to cardiac pacing. Unlike traditional right ventricular pacing, which can sometimes lead to adverse effects like pacing-induced cardiomyopathy, LBBAP aims to capture the heart's natural conduction system specifically the left bundle branch area leading to a more physiological and synchronized ventricular contraction.

This technique is gaining significant recognition, particularly for its benefits in managing specific patient populations. It is often referred to informally as "poor man's CRT" (Cardiac Resynchronization Therapy) because it offers many of the hemodynamic benefits of CRT improved left ventricular function and reduced heart failure symptoms but often with a less complex procedure and potentially lower costs.

Furthermore, LBBAP is increasingly becoming the preferred pacing option for patients with heart failure who require permanent pacing, serving as a highly effective alternative to traditional CRT in appropriate candidates. By achieving near-physiological activation of the left ventricle, LBBAP helps to reduce or prevent pacing-induced dyssynchrony, which is crucial for improving the quality of life and prognosis for heart failure patients.

SICVD TMK's successful adoption of LBBAP underscores its mission to provide accessible, state-of-the-art cardiovascular care to communities across Sindh, ensuring that patients outside of major

Metropolitan areas can also benefit from the newest and most effective interventional cardiology techniques available globally. This commitment solidifies SICVD TMK's position as a leader in regional cardiovascular healthcare innovation.



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RHEUMATIC FEVER AND RHEUMATIC HEART DISEASE STILL CHALLENGE IN REMOTE AREAS OF SINDH

Introduction.

Acute rheumatic fever (ARF) is a non-suppurative complication of pharyngeal infection with group A Streptococcus (GAS). It is a significant cause of cardiovascular morbidity and mortality in children, particularly those from low and middle-income countries like Pakistan.

Case report:

A 10–year–old Kirsh Kumar, student of grade 5, came in OPD with a history of cough and shortness of breath for 2 months. For these symptoms, he visited multiple local doctors, but did not improve. On further inquiry, he had also had a history of orthopnea for the last 9 days; he had no history of recent sore throat.

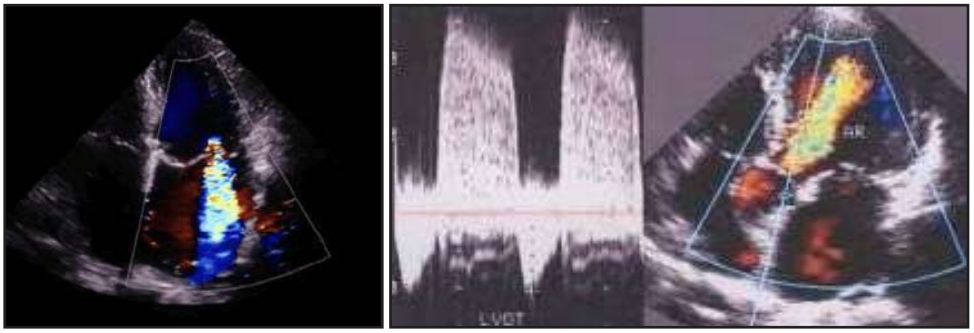
On examination, his H/R 130 b/mins, R/R 26 br /mins, both S 1 and S2 heart sounds are audible, but loud P2, there is a grade 4/6 systolic murmur at the apex radiating to the axilla, also a grade 3 early diastolic murmur is audible at LLSB. We did his blood test and echocardiography, which showed his HB was 9.8 g%, TLC 8300, ESR 66 mm/hr, ASOT < 200 initially, and repeat after 1 week, which showed 600 u/ml, while his throat C/S was negative.

The echo showed a thickened mitral valve and aortic valve leaflets with severe regurgitation, as well as severe tricuspid regurgitation and moderate pulmonic regurgitation. We initially stabilized the patient with diuretics and gave secondary prophylaxis with benzathine penicillin, and the surgical team was on board.

He underwent surgery with DVR @ (Mitral and Aortic) valve replacement and repair of the tricuspid valve. After surgery patient was kept on diuretics for 6 months, and on warfarin therapy was also advised for secondary prophylaxis every 3 weeks.

Conclusion:

The absence of a sore throat and initially negative ASOT and throat culture cannot rule out Rheumatic, which is still a challenge in our population. Quadricuspid valvular involvement in the pediatric population is rare. So healthcare workers and general practitioners should be aware of the disease burden in our community and strengthen primary and secondary prophylaxis. Additionally, local government inter-collaboration to conduct a registry system program and provide secondary prophylaxis awareness sessions.



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TITLE: RADIAL SHEATH FRACTURE AND RETAINED INTRAVASCULAR FRAGMENT FOLLOWING TRANSRADIAL CORONARY PERCUTANEOUS CORONARY INTERVENTION OF A FEMALE PATIENT: A RARE PROCEDURAL COMPLICATION

Case Report

Transradial access has become the preferred approach for coronary procedures due to its safety profile. However, rare complications such as radial sheath fracture may occur and require urgent recognition.

Case Presentation:

We report a case of 40-year-old female, known case of DM, IHD recently presented with NSTEMI. Coronary Angiogram was planned needing PCI of LAD, successfully done. After procedure experienced a broken radial sheath during withdrawal after a diagnostic coronary angioplasty. Flouroscopy confirmed a retained intravascular segment of broken radial. Surgical extraction was performed successfully with preservation of radial artery patency. The patient recovered without complications.

Introduction

Coronary angiography via the transradial approach is widely favored because of reduced bleeding, early patient mobilization, and improved comfort. Despite its advantages, complications may still occur, including radial artery spasm, hematoma, thrombosis, and rarely, sheath breakage. We report a rare case of radial sheath fracture during sheath removal and discuss the diagnostic and management strategies applied.

Investigations

Flouroscopy Forearm: Confirmed the presence and location of a retained sheath fragment along the radial artery course.

Management

A joint decision by vascular surgery and interventional cardiology teams favored open surgical retrieval due to risk of distal embolization and superficial location.

Under local anesthesia, the radial artery was exposed through a small longitudinal incision. The artery was opened, and the retained sheath fragment was removed intact. Arterial repair was performed using primary closure. Distal flow was confirmed post-procedure.

Complication

At the end of the procedure, after applying TR band, resistance was encountered during sheath withdrawal. Despite gentle traction, the sheath fractured at the mid-segment, and only the proximal portion was removed. Approximately 3–4 cm of the sheath remained within the radial artery.

The patient remained hemodynamically stable, with no pain, swelling, or hematoma formation

Outcome and Follow-Up

The patient had an uneventful postoperative course. Radial pulse remained strong, and neurological examination was normal. She was discharged the next day. At 2-week follow-up, the wound had healed well with no vascular compromise.

Discussion

Radial sheath fracture is a rare procedural event. Contributing factors may include:

Severe radial artery spasm

Prolonged sheath dwell time

Calcified or tortuous radial anatomy

Excessive traction against resistance

Excessive traction against T.R Band at High pressures.

Device manufacturing defects

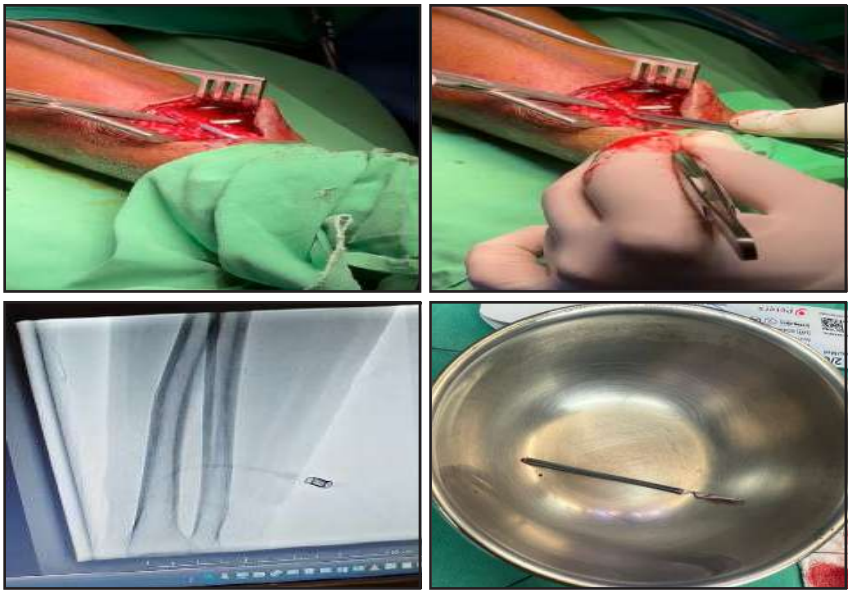
This case emphasizes the importance of:

- Using intra-arterial vasodilators (verapamil, nitroglycerin) before sheath withdrawal.
- Avoiding forceful traction when resistance is felt.
- Immediate ultrasound evaluation when sheath fragmentation is suspected.
- Prompt retrieval, either endovascular or surgical, based on fragment location.

Conclusion:

Radial sheath fracture is an uncommon but significant complication. Awareness, careful manipulation, and immediate imaging facilitate early diagnosis and prevent adverse outcomes.
Keywords: Transradial access, sheath fracture, coronary angiography, vascular complication, case report

Early diagnosis and appro



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YOUNG HEART, UNCONVENTIONAL STRATEGY: DOACS FOR THROMBUS RESOLUTION IN ACUTE STEMI

A 31-year old obese male smoker, presented to the SICVD Hyderabad triage with retrosternal chest discomfort for 3 hours. His vital signs and physical examination were unremarkable. ECG showed ST-elevation in the precordial leads with reciprocal ST-depression in leads II, III, and aVF. He was diagnosed as an acute anterior ST-elevation myocardial infarction (STEMI) with KILLIP class I.

After written and informed consent for primary percutaneous coronary intervention (PCI), he was given loading doses of Aspirin 300 mg, Clopidogrel 600 mg, and intravenous Heparin 5000 IU, and was taken for left heart catheterization/primary PCI. His coronary angiography demonstrated 80–90% ostial proximal LAD narrowing with thrombus, with no significant disease in the remaining coronary arteries. (Figure A & B)

FIGURE: A

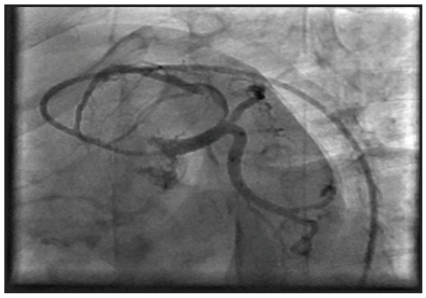
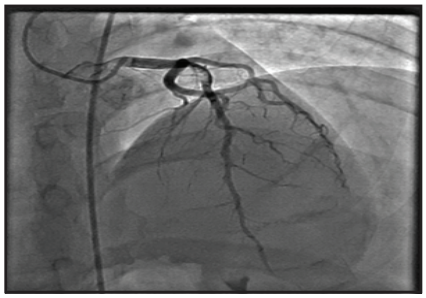


FIGURE: B



Given his young age, resolution of chest pain in the catheterization laboratory, and the presence of TIMI III flow in the LAD, a decision was made to defer stenting and initiate glycoprotein IIb/IIIa inhibitor therapy for 24 hours. He received Tirofiban for 24 hours, followed by in-hospital subcutaneous Enoxaparin 1 mg/kg every 12 hours for 2 days, with strict monitoring for recurrence of chest pain.

Echocardiography showed hypokinesia of the mid IVS and mid anterior wall with an ejection fraction (EF) of 45%. The patient remained symptom-free during 3 days of hospital monitoring and was discharged on Aspirin 75 mg, Clopidogrel 75 mg, Rosuvastatin 20 mg, and Rivaroxaban 15 mg once daily. Rivaroxaban was discontinued after 4 weeks, and he was continued on dual antiplatelet therapy (DAPT) and statin.

FIGURE: C

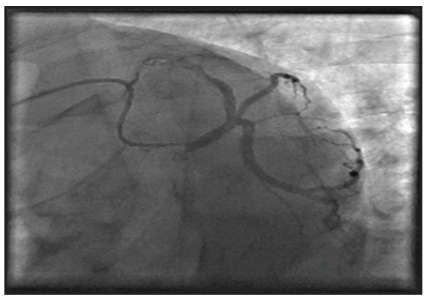
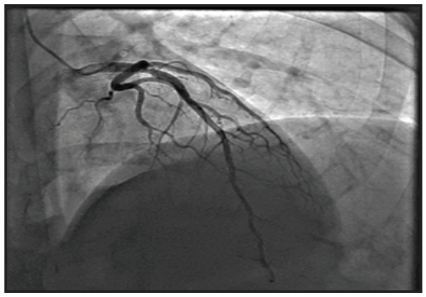


FIGURE: D



A re-look coronary angiography performed 6 weeks later showed only 30–40% ostial LAD disease with resolution of the thrombus in the ostial–proximal segment, and the LVEF had improved to 55%. (Figure C & D) Myocardial SPECT after the re-look angiography demonstrated no ischemia in the LAD territory. The patient has remained compliant with lifestyle modification and medical therapy and has successfully stopped smoking during follow-up. Avoiding stent placement in the acute STEMI setting can be challenging; however, the patient's chest pain resolution with TIMI III flow in LAD supported a conservative, stent-less approach. More data and long-term follow-up on such cases are needed to guide evidence-based practice regarding the safety and efficacy of stent-free management in selected STEMI patients.

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AN UNPRECEDENTED CASE OF BICUSPID AORTIC VALVE AND CRITICAL AORTIC STENOSIS WITH VERY HIGH MEAN GRADIENTS: A CASE REPORT

ABSTRACT:

This case describes a rare and remarkable presentation of a 37-year-old woman diagnosed with a bicuspid aortic valve (BAV) and critical aortic stenosis (AS) exhibiting exceptionally high mean pressure gradients (MPG) of 172 mmHg—among the highest reported. The patient, from a remote area, experienced progressive shortness of breath over three years, worsening to NYHA functional class II–III in the preceding six months. She also reported multiple syncopal episodes, indicating advanced disease severity and a significant decline in quality of life.

CLINICAL EXAMINATION & INVESTIGATIONS:

On examination, the patient appeared hemodynamically unstable, with a low-volume pulse, hypotension (90/60 mmHg), and a loud grade IV/VI ejection systolic murmur radiating to the carotids. Laboratory testing showed anemia (Hb 8.6 g/dL). Echocardiography revealed mild LV hypertrophy, mild systolic dysfunction (EF 40–45%), and a heavily calcified bicuspid valve with critical AS. The valve demonstrated extremely high gradients (MPG 172 mmHg, PPG 292 mmHg) and a severely reduced valve area of 0.3 cm^2. Additionally, a retro-aortic course of an anomalous coronary artery was noted.

Cardiac CT confirmed type 1 BAV, with fusion of the right and left coronary cusps and a median raphe. An anomalous dominant left circumflex artery originating from the right coronary cusp and following a benign retro-aortic course was also identified. The aorta was normal in size with no evidence of aortopathy.

MANAGEMENT:

Given the severity of symptoms and findings, urgent surgical aortic valve replacement (SAVR) was indicated. After discussing options with the patient and her family, a mechanical prosthetic valve was selected due to her young age. She underwent successful implantation of a 19 mm St. Jude mechanical valve. The native valve was severely calcified and distorted. The anomalous coronary artery required no intervention. Postoperatively, the patient required 3–4 pints of red cell concentrate but otherwise recovered well. She was started on anticoagulation and discharged on postoperative day five. Postoperative echocardiography showed significant improvement, with peak gradient 27 mmHg and mean gradient 13 mmHg.

FOLLOWUP:

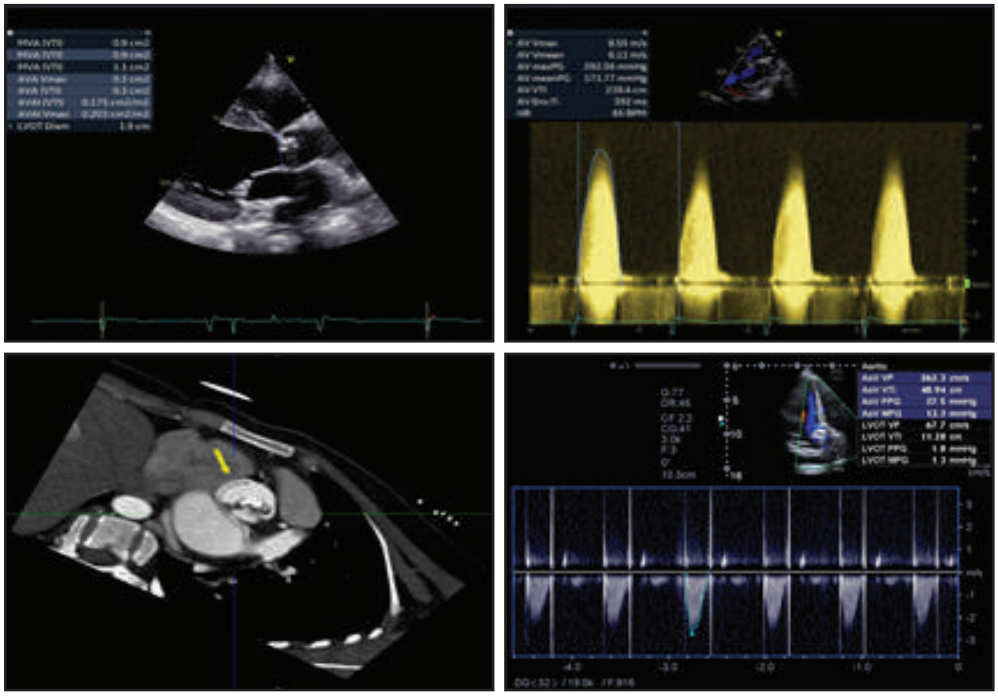
At her one-month follow-up, the patient demonstrated marked improvement, remained stable, and maintained therapeutic INR (2.4). Her symptoms significantly improved, and she showed a satisfactory recovery.

DISCUSSION:

This case is significant due to the exceptionally high transvalvular gradients, far exceeding typical severe AS thresholds. According to 2020 AHA guidelines, severe AS is defined by gradients >40 mmHg and AVA <1.0 cm^2. Previously reported maximum gradients in BAV patients reached 134 mmHg, making this case uniquely severe. These findings emphasize the risk of rapid deterioration, including heart failure and sudden cardiac death, requiring urgent intervention.
BAV, the most common congenital cardiac anomaly (1–3% prevalence), is associated with AS, aortic regurgitation, aortopathy, and infective endocarditis. Anomalous coronary arteries occur in up to 18% of BAV patients, with anomalous LCX from the right cusp being the most common pattern, as seen in this case.

CONCLUSION:

In conclusion, this case highlights the importance of early diagnosis, multimodal imaging, and timely management of critical AS in BAV patients. Despite the unprecedented gradient severity, prompt SAVR resulted in an excellent clinical outcome. This case contributes to the understanding of extreme hemodynamic presentations in BAV-related AS and reinforces the value of a multidisciplinary heart team approach.



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WIDE COMPLEX, NARROW RISK: A VASOVAGAL CASE OF IVR IN THE OPERATING ROOM.

INTRODUCTION

Accelerated Idioventricular Rhythm is generally observed in the setting of reperfusion phase after an acute Myocardial Infarction. There are various other causes of Accelerated Idioventricular Rhythm (AIVR) that are overlooked. In healthy individuals without any heart disease, it may be caused by increased vagal tone and decreased sympathetic activity.

CASE

A 24-year-old male operating theatre technician was assisting in a routine surgical procedure when he experienced sudden-onset palpitations, light-headedness, and nausea. The attending surgeon noted visible distress and promptly escorted him to the emergency department. The patient denied chest pain, syncope, or dyspnoea. He reported similar episodes in the past, typically triggered by physical exertion, or pain, though none had occurred with such intensity.

He had no known cardiovascular disease, and his family history was negative for structural heart disease or arrhythmias. He was not on any medications and denied use of stimulants or recreational drugs. On arrival, he was alert and hemodynamically stable BP 126/82 mmHg, HR 42 bpm, SpO_2 99% on room air. Physical examination was unremarkable, with no signs of heart failure, murmurs, or neurological deficits.

The acute onset of symptoms in a high-stress environment raised concern for a cardiac arrhythmia, prompting immediate ECG evaluation and telemetry monitoring.

Baseline work-up was also normal apart from his ECG which revealed accelerated idioventricular rhythm (AIVR) (Figure 1). A 24-h Holter analysis was done that demonstrated sinus rhythm with frequent run of IVR. No significant pause or High-grade AV block noted. Echocardiography revealed normal cardiac function.

DISCUSSION

IVR frequently occurs in the presence of structural heart disease mostly as a reperfusion-arrhythmia. It may occur due to electrolyte imbalance, in athletes or may be drug-induced. However, a vasovagal response, in rare circumstances, can lead to AIVR due to increased vagal tone. Its occurrence in the absence of MI warrants extensive work-up to rule out any underlying pathology. Considering vasovagal response as a potential cause can help simplify the diagnostic process and avoid unnecessary testing as clinical diagnosis is often sufficient.

MANAGEMENT

He was reassured and proper education was provided about his condition. Main focus of the management included avoidance of trigger factors. He was advised to stay well-hydrated, avoid prolonged standing, and practice mindfulness techniques to minimize stress.

TAKE-HOME MESSAGE

IVR can be a benign, physiological phenomenon associated with increased vagal tone, especially in young, healthy individuals without any structural heart disease. Avoidance of triggers and reassurance is enough in such cases.

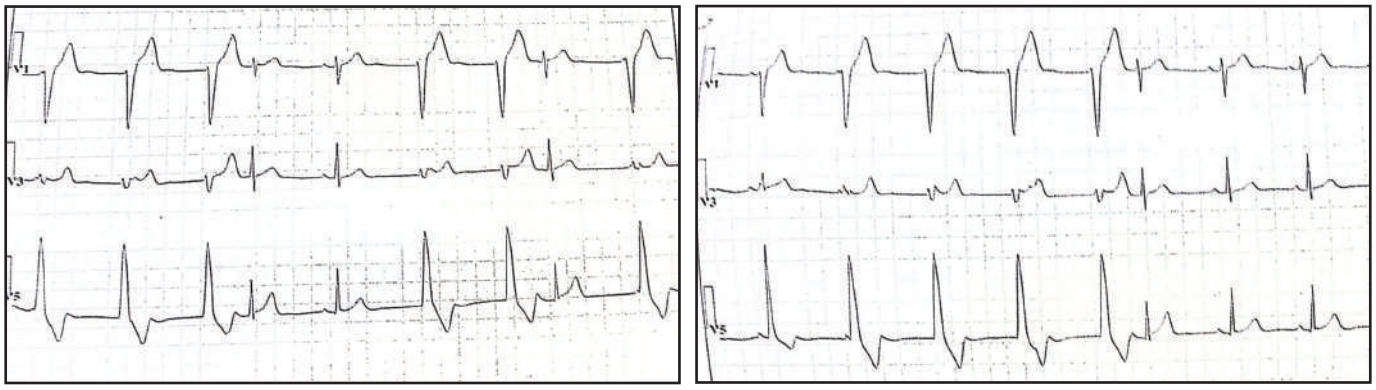

Figure 1. ECG showing accelerated Idioventricular Rhythm (AIVR)

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SUCCESSFUL EXCISION OF A GIANT RIGHT ATRIAL MYXOMA IN A YOUNG GYMNAST AT SICVD LARKANA: TWO-YEAR FOLLOW-UP

In December 2023, the cardiac surgery team at the Sindh Institute of Cardiovascular Diseases (SICVD), Larkana, performed a landmark operation on a young gymnast who was incidentally diagnosed with a massive right atrial tumor. The patient, previously healthy and active, began experiencing severe fatigue and breathlessness during exercise. Simple non-fatal symptoms revealed to be a life-threatening cardiac tumor.

Echocardiography and imaging confirmed the presence of an unusually large right atrial myxoma measuring approximately 65x60mm. Unlike the more common left atrial location, this tumor was situated in the right atrium and extended into the inferior vena cava (IVC), superior vena cava (SVC), and occluding major blood flow of tricuspid valve region. Such an extensive involvement posed significant risks of venous obstruction, impaired cardiac output, and embolization.

The patient was taken for urgent open-heart surgery under cardiopulmonary bypass. After careful bicaval cannulation, right atriotomy, tumor excised from its septal pedicle and removed from right atrial cavity. The tumor's attachment was traced to a septal pedicle, which was cauterized to minimize the chance of recurrence. Despite the technical challenges, the operation was completed successfully without intraoperative complications.

Postoperatively, the patient recovered smoothly, with early mobilization and return to normal rhythm. Intensive care monitoring confirmed stable hemodynamics, and the young gymnast was discharged home in good condition. The rarity of such a large right atrial myxoma, coupled with its extension into major venous structures, made this case a remarkable achievement for the SICVD Larkana team.

Two years later, at follow-up in December 2025, the patient remains in excellent health. Echocardiographic surveillance shows no recurrence, and the gymnast has resumed training and daily activities without limitation. The case underscores the importance of vigilance in young athletes presenting with unexplained fatigue, as even benign cardiac tumors can masquerade as exercise intolerance.

This successful outcome highlights the growing expertise of SICVD Larkana in managing complex cardiac tumors. It stands as a testament to the skill, precision, and dedication of the surgical team, offering hope to patients across Sindh that advanced cardiac care is available locally with outcomes comparable to international standards.

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MANAGEMENT OF ELECTRICAL STORM: SIMPLIFIED NEW PATHWAYS

Electrical Storm (ES)—defined as ≥3 episodes of sustained ventricular tachycardia (VT) or ventricular fibrillation (VF) within 24 hours—remains one of the most frightening emergencies in cardiology. Although often managed by electrophysiologists, every cardiologist, intensivist, and resident must be confident in a standardized, stepwise approach. New algorithms now emphasize early autonomic modulation, structured drug therapy, and coordinated EP–ICU management. The storm results from a "perfect arrhythmic setup":

Substrate:

scar from prior myocardial infarction, non-ischemic cardiomyopathy, channelopathies

Trigger:

electrolyte imbalance, acute ischemia, heart failure decompensation, fever, drugs

Modulator:

heightened sympathetic tone—often underestimated

The Management Includes:

Immediate Stabilization:
Sedation & Sympathetic Control First : New evidence shows that sympathetic hyperactivity fuels recurrences, making early sedation crucial. Give IV benzodiazepines or propofol (if BP allows). Consider short-acting β-blockers (esmolol preferred due to rapid titration).
Treat anxiety, pain, and dyspnea—these independently worsen catecholamine drive. This "sympathetic break" often reduces ICD shocks and stabilizes rhythm within minutes.

Antiarrhythmic Therapy:

First line:
IV Amiodarone (300 mg + infusion)
Combine with IV β-blocker (proven synergistic effect)

Second line:
IV Lidocaine (especially in ischemic VT substrate)
Procainamide (if BP stable; avoid in decompensated HF)

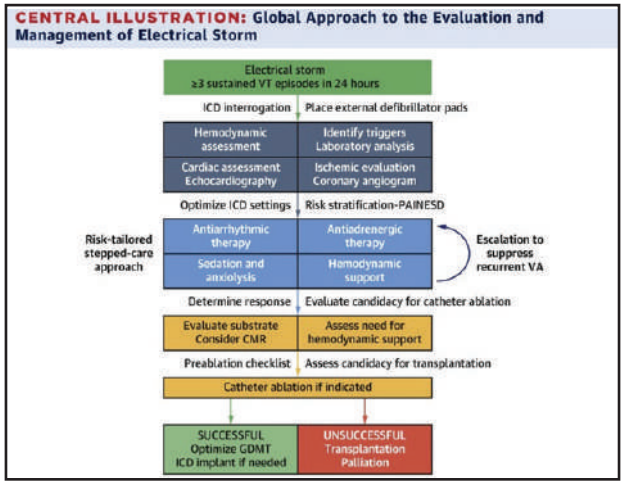
Optimize: K+ 4.5–5.0 mmol/L, Mg^{2} > 2.0 mg/dL. Correct acidosis, treat fever, ensure oxygenation

Identify and Fix the Reversible Trigger: A 12-lead ECG, ICD interrogation, and bedside echo are essential. Common causes may include acute ischemia which would require urgent PCI, new HF decompensation, drug toxicity, infection, sepsis, or metabolic derangements.

Autonomic Modulation: The Game-Changer: If ES persists despite drugs, current guidelines now recommend stellate Ganglion Block (SGB) that can be done by anesthesia/icu teams, is ultrasound guided and results in rapid reduction in VT/VF recurrence. For recurrent stroms epidural anesthesia or thoracic sympathectomy may be considered. The "neural rescue" strategy is now a core step instead of a last resort.

Catheter Ablation: Earlier than Before: Ablation is no longer a late option. It is indicated when VT recurs despite AADs, ICD shocks continue or patient is hemodynamically stable or supported (IABP/Impella/ECMO). Early ablation improves survival and reduces recurrent ES.

Multidisciplinary ES Team: Modern ES pathways emphasize a coordinated response as it dramatically reduces mortality and involves the following teams: Cardiology, Electrophysiology, ICU/anesthesia, Heart failure team and Interventional cardiology.



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ROLE OF VACCINATION IN PREVENTING INFLUENZA AND PNEUMONIA: IMPACT ON HEART FAILURE HOSPITALIZATION AND HEALTHCARE BURDEN

Heart failure (HF) remains a leading cause of morbidity, mortality, and recurrent hospitalization worldwide. Acute infections, particularly influenza and pneumonia, are well-recognized precipitants of heart failure decompensation. Vaccination against these preventable infections plays a crucial yet often underutilized role in improving cardiovascular outcomes and reducing the overall healthcare burden.

Link between Respiratory Infections and Heart Failure

Influenza and pneumococcal infections trigger systemic inflammation, fever, tachycardia, hypoxia, and increased metabolic demand. These pathophysiological changes can precipitate acute heart failure in vulnerable patients by worsening myocardial function, increasing preload and afterload, and destabilizing previously compensated disease. Additionally, infections increase the risk of arrhythmias, myocardial injury, and ischemic events, further contributing to adverse outcomes in heart failure patients.

Influenza Vaccination and Cardiovascular Protection

Seasonal influenza vaccination has been consistently associated with reduced cardiovascular events. Multiple studies have demonstrated that influenza vaccination lowers the risk of heart failure exacerbations, hospital admissions, and cardiovascular mortality, particularly in elderly patients and those with established cardiovascular disease. By preventing influenza infection, vaccination reduces systemic inflammatory stress and hemodynamic instability, thereby decreasing episodes of acute decompensated heart failure.

Pneumococcal Vaccination and Reduction in Severe Illness

Pneumococcal pneumonia is a major cause of severe infection and hospitalization among patients with heart failure. Pneumococcal vaccination significantly reduces the incidence of invasive pneumococcal disease, severe pneumonia, and related complications. Preventing pneumococcal infections translates into fewer hospital admissions, reduced need for intensive care, and lower in-hospital mortality in patients with underlying cardiac disease.

Impact on Heart Failure Hospitalization

Recurrent hospitalization is a hallmark of heart failure and is associated with progressive decline in cardiac function and increased healthcare costs. Vaccination reduces infection-related admissions and prevents secondary cardiac complications, thereby interrupting a common pathway leading to heart failure decompensation. Even modest reductions in hospitalization rates can result in substantial clinical and economic benefits.

Reducing Healthcare Burden

From a public health perspective, vaccination is a cost-effective intervention. Reduced hospital admissions, shorter lengths of stay, and fewer intensive care requirements lead to significant savings for healthcare systems. In resource-limited settings, prevention through vaccination is particularly valuable in preserving hospital capacity and reducing strain on already overburdened cardiac and medical services.

Role of Healthcare Professionals

Cardiologists, internists, and primary care physicians have a critical role in promoting vaccination as part of comprehensive heart failure management. Influenza vaccination should be administered annually, while pneumococcal vaccination should follow recommended age- and risk-based schedules. Integrating vaccination status into routine cardiology follow-up can significantly improve uptake and outcomes.

Conclusion

Vaccination against influenza and pneumonia is an essential, evidence-based strategy for preventing heart failure exacerbations, reducing hospitalizations, and lowering overall healthcare burden. Beyond infection prevention, vaccination provides meaningful cardiovascular protection and should be regarded as a standard component of optimal heart failure care. Strengthening vaccination advocacy among healthcare professionals and patients alike can lead to improved clinical outcomes and more sustainable healthcare systems.

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VENTRICULAR SEPTAL DEFECTS BY DEVICE CLOSURE TECHNIQUE AT SICVD TMK

The Paediatric Cardiology Department at SICVD TMK Hospital, located in a remote city of Sindh, represents a significant advancement in cardiac care for children in this underserved region. One of the critical cardiac interventions offered here is the closure of Ventricular Septal Defects (VSD) using device closure techniques, a modern and less invasive approach compared to traditional open-heart surgery.

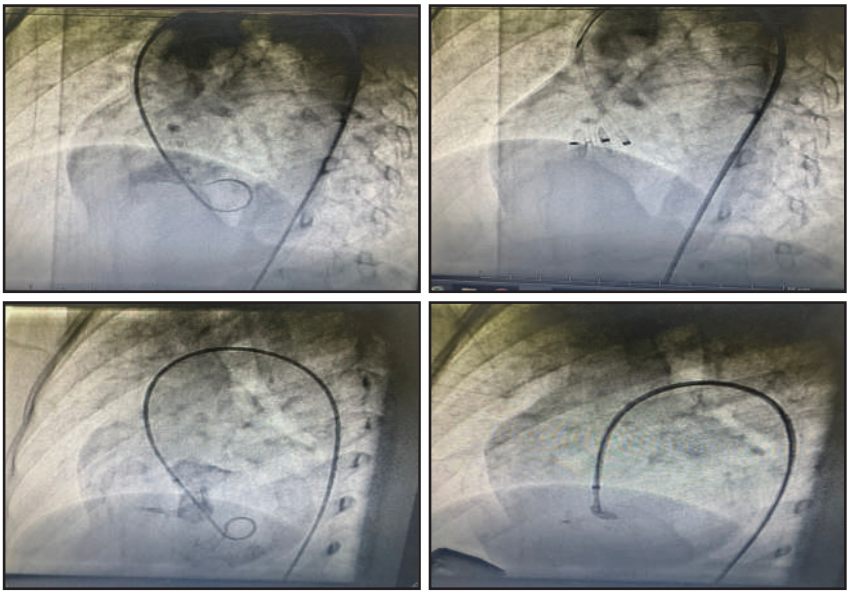
VSD is one of the most common congenital heart defects where a hole exists in the wall (septum) separating the heart's lower chambers (ventricles). This defect causes the mixing of oxygen-rich and oxygen-poor blood, leading to workload increases on the heart and lungs and potentially resulting in heart failure, pulmonary hypertension, and other complications if untreated. Earlier, children in remote areas like this often had to travel long distances for such specialized cardiac procedures, which posed financial and logistical barriers, sometimes leading to delayed or no treatment.

With the availability of the VSD device closure facility at SICVD TMK Hospital's Paediatric Cardiology Department, children from surrounding remote areas now gain access to advanced, life-saving cardiac interventions locally. The procedure involves the use of a catheter-based technique where a specially designed closure device is delivered via a blood vessel to the heart, positioning it across the septal defect to seal the hole. This minimally invasive approach eliminates the need for open-heart surgery, reduces hospital stay, decreases recovery time, and lowers the risk of complications.

The department is equipped with skilled paediatric cardiologists, advanced Cath lab facilities, and supporting medical staff trained to perform these interventions safely and efficiently. This transformation in cardiac care infrastructure within a remote city addresses critical healthcare gaps by providing timely diagnosis, intervention, and follow-up care for children with VSD and other congenital heart defects.

Moreover, the availability of VSD device closure locally relieves families from emotional and financial stress linked to seeking treatment in distant metropolitan centers. It also contributes to reducing overall paediatric cardiac mortality and morbidity rates in the region.

In summary, the introduction of VSD device closure at SICVD TMK Hospital marks a milestone in paediatric cardiac care for Sindh's remote communities. It ensures that children with congenital heart defects receive modern, effective, and compassionate treatment close to home, heralding a new era of accessible specialized healthcare in the region.



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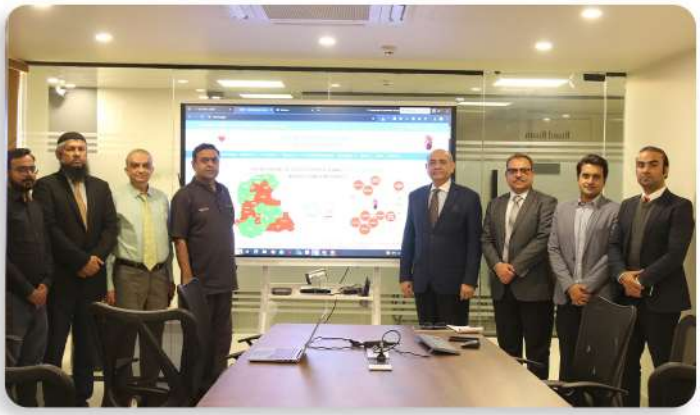
Prof. Jawaid Akbar Sial, ED, SICVD, was graciously invited on dinner by the President of the CPSP, Prof. Khalid Masood Gondal, discussion on the accreditation of SICVD centers and other key matters related to postgraduate medical training

Under the leadership of Prof. Jawaid Akbar Sial, ED, SICVD, the team successfully conducted an Intravascular Lithotripsy (IVL) Workshop and performed multiple complex cases with excellence

PSIC Karachi Chapter organized a Citywide Cath Conference at SICVD Baldia Town, Karachi, sharing knowledge, discussing new techniques, and advancing the practice of interventional cardiology

SICVD proudly launched its inaugural newsletter, "Life Line of Sindh", marking a new milestone in its journey of excellence & transparency in healthcare

Mr. Asifullah Khan, Secretary Health G.B. & Dr. Syed Sadiq Shah, DG Health G.B. met Prof. Jawaid A. Sial, ED, SICVD, During the meeting, both dignitaries appreciated the SICVD's exemplary model of providing free cardiAC care



SICVD officially launched the SICVD Website, the digital platform marks an important step in SICVD's journey to make life-saving cardiac information, services, & emergency care access available to everyone across Sindh

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