VOLUME 44 | ISSUE 1 | October 2024

Sri Ramakrishna
Hospital (Multi-Speciality)

pulse

Happenings at Sri Ramakrishna...

49 Years of Excellence

Shri.D.Lakshminarayanaswamy
Managing Trustee

I am filled with immense pride and gratitude for the growth and innovation we have achieved together. I am delighted to be a part of the team that has made remarkable progress over the years. Our commitment to providing exceptional healthcare and serving our community has always been stronger, and I am proud of the strides we have taken together.

This month brings our shared responsibility towards health and well-being as we observe **October** as **Breast Cancer Awareness Month.** Breast cancer touches countless lives, and early detection is the key to improving outcomes. I urge all women to prioritize their health, seek regular screenings, and take preventive measures. Through awareness and education, we can reduce the impact of this disease. Let us join hands in supporting those affected by breast cancer and encourage open dialogue on the importance of early detection.

On **World Stroke Day(October 29),** we are reminded that Stroke can happen to anyone at any time. However, strokes are preventable with awareness and timely intervention. Let us raise awareness about the warning signs of stroke and emphasize the importance of managing risk factors like high blood pressure and diabetes.

This festive season, I wish you and your loved ones a prosperous, healthy, and joyful Diwali. May this festival bring you success, peace, and everlasting happiness.

Dr. S. Rajagopal
Medical Director

Sri Ramakrishna Hospital has consistently been at the forefront of diverse academic programs, complementing its clinical achievements. The focus on Clinical Club meetings, where we engage in discussions about intriguing cases, significantly enriches the professional development of our team.

This month's spotlight on **Neurology, Neurosurgery, and Interventional Radiology** reflects our strong commitment to staying abreast of medical advancements and addressing a wide range of healthcare needs, ultimately benefitting both our medical professionals and the overall quality of patient care. Every year, **October** is internationally recognized as **Breast Cancer Awareness Month,** providing a vital opportunity to shine a light on the importance of early detection, comprehensive education, and unwavering support for individuals affected by breast cancer. Early screening and timely medical intervention have the potential to save countless lives, and we strongly encourage everyone to commit to regular mammograms and thorough self-examinations as part of their health routines.

As we actively raise awareness for breast cancer throughout October, we also prepare to observe **World Stroke Day** on **October 29.** This significant day emphasizes the critical nature of early intervention for strokes, bringing attention to one of the leading causes of disability and mortality on a global scale. When it comes to strokes, every second counts; recognizing the warning signs and taking swift action can dramatically improve outcomes and potentially save lives.

Wishing everyone a joyful and healthy Diwali, filled with love, happiness, and the very best of health.

Editorial Team

Dr.N.Loganathan Pulmonologist	**Dr.S.Prahadeeshwaran** Head - Public Relations	**Mr.Murali Kaliappan** Head - Marketing

MANYATA CERTIFICATION – 02.09.2024

Manyata Certification programme for FOGSI quality standards for excellence in Maternity service was organized in line with WHO standards for antenatal, intra partum and post partum care for Obstetrics and Gynaecology Nursing team ,ensuring safe delivery. The Certification Programme acted as a stamp of quality, ensuring consistent, safe and respectful care for mothers during and after childbirth. The primary focus was to initiate transferring of skills, capacity enhancement and to ensure competency for the frontline maternal and child health care delivery.

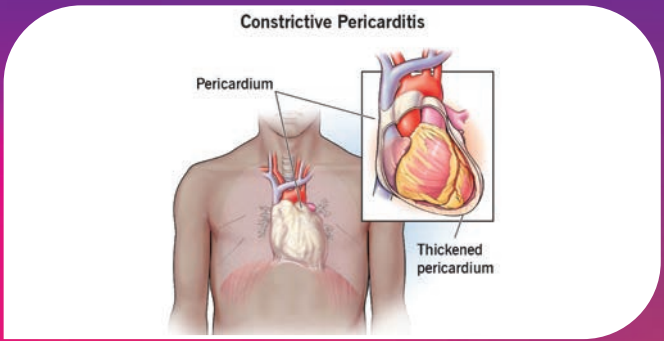
The initiative was taken by Dr. M. Banumathy, Consultant Obstetrician & Gynaecologist- HOD (Academics) with encouragement from the Hospital Management. The team was coordinated by Dr. Bharathi and Mrs. Rejini, Deputy Nursing Officer and the course began on 04.07.2024 with 4 Virtual session, every Thursday, for 4 weeks by ARTIST (Asian Research and Training Institute for Skill Transfer) with Dr. Poorni Narayanan as the faculty. Final Assessment was conducted virtually on 02.09.2024 by Dr.Jayam Kannan, Emeritus Professor of Tamil Nadu MGR University. Six of our OBG Staff Nurses Ms. Pandipriya, Ms. Kaleeswari, Ms. Keerthana, Ms. Lavanya, Ms. Keerthika and Ms. Ponnila successfully completed the certification programme. Post training score attained 100% (85% needed for certification). The Hospital has been awarded for compliance with FOGSI quality standards ensuring safe delivery.

First Time in Tamil Nadu – 16.09.2024

Sri Ramakrishna Hospital launched QUIDELORTHO'S VITROS AUTOMATION SOLUTIONS connected with VITROS XT 7600 Integrated analyzers, a cutting-edge clinical lab equipment that offers world-class robotic automation for blood testing, powered by Artificial Intelligence (AI) quality-checking technology.

The advanced system was officially launched by Shri R. Sundar, Joint Managing Trustee of SNR Sons Charitable Trust, in the presence of Mr.Anand Pande, Vice-President Asia Pacific of QuidelOrtho , SNR Sons Charitable Trust CEO Shri. C.V. Ramkumar, Medical Director Dr.S. Rajagopal, Medical Superintendent Dr. S. Alagappan and Administrative Director of Diagnostics Mr. R.Dorairaj.

This state-of-the-art system is designed to deliver highly accurate and reliable blood test reports in the shortest time with minimal sample volume. On the one hand, this improves the patient experience, particularly for infants and elderly patients where blood samples are more precious; also, it empowers doctors to make swift, informed decisions for effective patient treatment options. The newly introduced system also marks a significant milestone as it utilizes Dry Chemistry technology, one of a kind in Tamil Nadu. This innovative technology is renowned for its precision and sustainability.



Chronic Constrictive Pericarditis

Constrictive pericarditis is a condition charecterized by granulomatous inflammation, thickening, fibrosis and rarely calcification of the pericardium, resulting in restriction of filling of both ventricles.

The common causes are tuberculosis, post viral pericarditi , malignant deposits, post cardiac surgery, radiation and uremia. in a few cases the exact cause for the inflammatory process can not be made out and they are termed as idiopathic.

Patients present with features of right and left sided heart failure due to restriction ofventricular filling consequent to pericardial thickening. Difficulty in breathing , ascites (ascites precox – ascites appearing before oedema legs) and oedema legs are the usual symptoms . Prominent jugular venous pulsations ,becoming more prominent during inspiration (Kussmaul's sign), pulsus paradoxus and rarely a pericardial knock , a sharp diastolic sound due to the thick pericardium preventing expansion of the heart can be observed. Figure 1

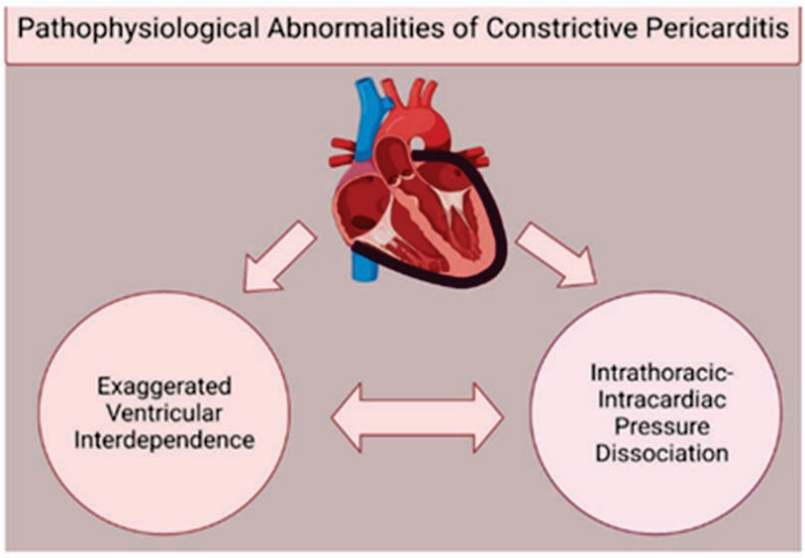


Figure 1

Investigations, apart from routine blood investigations, ECG, X-ray include Echocardiography, Tissue Doppler Echocardiography, CT Scan and MRI . Cardiac catheterization and pressure studies are needrd in a few cases.

A few cases may respond to a course of anti inflammatory drugs and steroids but many patients will need pericardiectomy.

Case report: A 58 year old male patient was admitted with symptoms and signs of heart failure. Blood tests , ECG and x-ray chest PA were unremarkable . Echocardiography revealed thickened pericardium and interventricular septal shudder. Tissue Doppler showed medial e prime 14 cm/sec and lateral e prime 8 cm /sec. (annulus paradoxus). Cardiac catheterization revealed classical early diastolic sharp dip with diastasis in ventricular filling pressure tracing. (square root sign).Figure-2 .Coronary angiography was normal. CT thorax showed thickened pericardium. Figure-3.

Figure 2 : LV Pressure tracing showing square root sign.

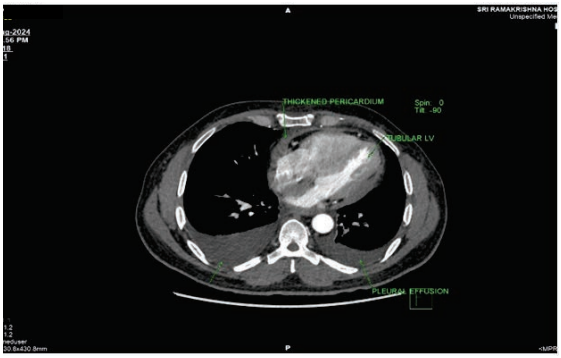


Figure 3. CT Thorax showing thickened pericarium.

He underwent successful pericardiectomy. Histology of the pericardiectomy specimen confirmed the aetiology as tuberculosis. Figure 4

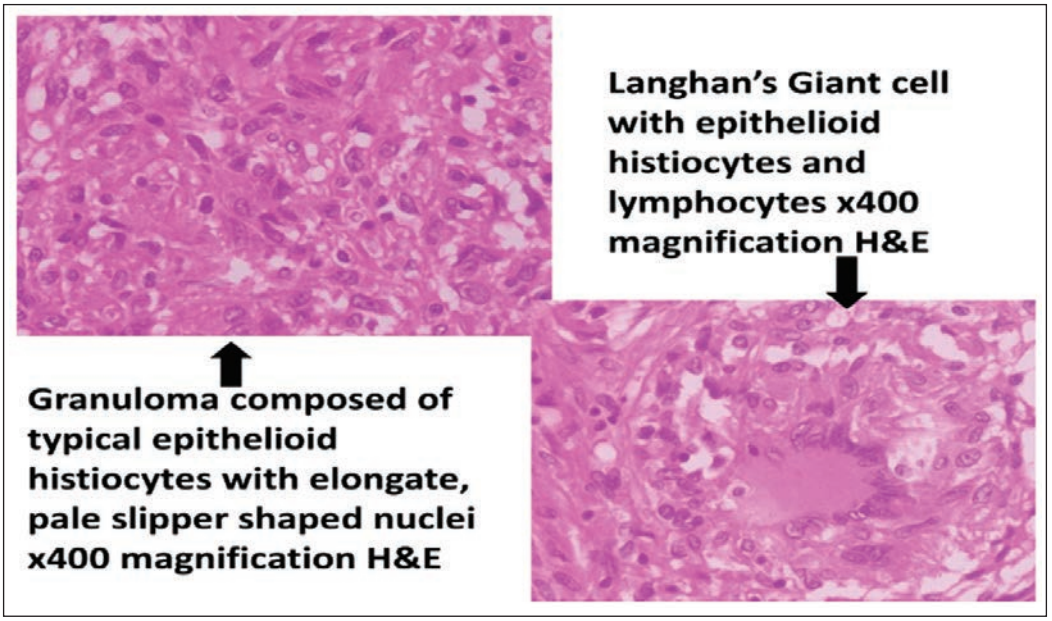
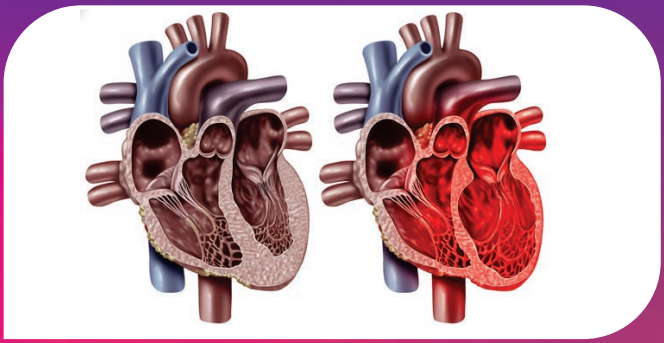


Figure-4 , Histology of the pericardial specimen showing classical Langhan's giant cell consistent with tuberculous aetiology.

Dr. MANOHARAN.S
MD.,(General Medicine)., DM (Cardiology)

Consultant Cardiologist & HOD



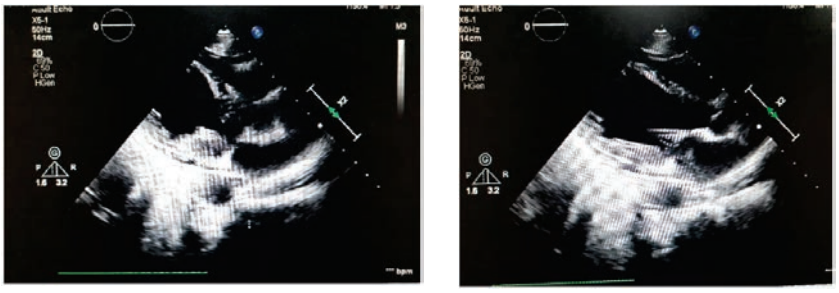
Takotsubo With Thyrotoxicosis

Case Report: A 58 years old female presented with retrosternal chest pain and burning sensation since 3 hours on 24-08-2024. It was non radiating pain. Pain was not associated with sweating. She had significant ECG changes. She was diagnosed as acute coronary syndrome as ECG revealed ST elevation in inferior leads and T inversion in anterolateral leads. She was taken up for urgent coronary angiogram. Coronary angiogram revealed normal epicardial coronary arteries. 2D Echo showed dilated LV apex with akinesia and ballooning of LV apex. Her blood reports revealed elevated Troponin. It also revealed highly elevated T4 level suggestive of thyrotoxicosis. She was diagnosed as takotsubo cardiomyopathy.

ECG

ECG revealed ST Elevation in Inferior leads

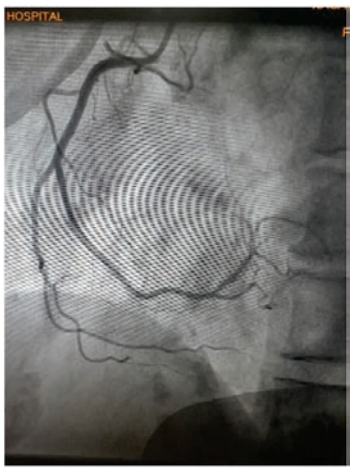
Echo



Parasternal Long Axis View (Systole and Diastole)

Apical Four Chamber View (Systole and Diastole)

CORONARY ANGIOGRAM



She underwent thyroidectomy for papillary carcinoma on 13-06-2024. She was started on Thyroxine after thyroidectomy. That was the reason for thyrotoxicosis.

Discussion: Takotsubo cardiomyopathy, also known as stress cardiomyopathy is a cardiomyopathy of reversible LV dysfunction. Though ECG and Echocardiography changes are present, coronary angiogram is normal. Though there are numerous definitions or classifications of takotsubo cardiomyopathy, ESC definition is the most used one (listed below).

Definition of Takotsubo Cardiomyopathy from European Society of Cardiology

1. Transient regional wall motion abnormalities of LV or RV myocardium occur and are frequently, but not always, preceded by a stressful trigger (emotional or physical).

2. The regional wall motion abnormalities usually extend beyond a single epicardial vascular distribution and often result in circumferential dysfunction of the ventricular segmentsinvolved.

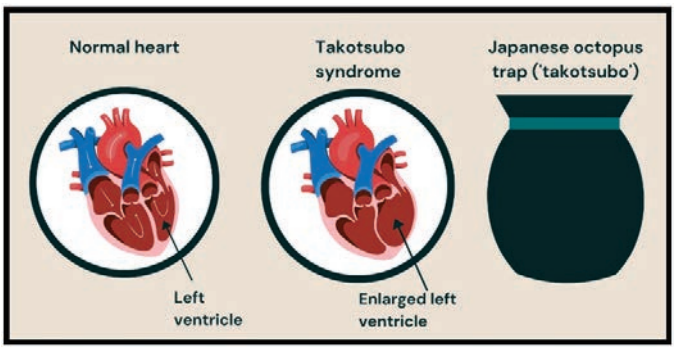
3. There is an absence of culprit atherosclerotic coronary artery disease, including acute plaque rupture, thrombus formation, and coronary dissection or other pathologicconditions, to explain the pattern of temporary LV dysfunction observed (e.g., hypertrophic cardiomyopathy, viral myocarditis).

4. New and reversible electrocardiography (ECG) abnormalities (ST segment elevation, ST depression, LBBB, T-wave inversion, and/or QTc prolongation) are seen during theacute phase (first 3 months).

5. Significantly elevated levels of serum natriuretic peptide (BNP or NT-proBNP) are seen during the acute phase.

6. A positive but relatively small elevation in cardiac troponin can be measured with a conventional assay (i.e., disparity between the troponin level and the amount ofdysfunctional myocardium present).

7. Recovery of ventricular systolic function is apparent on cardiac imaging at follow-up (3 to 6 months).



In Takotsubo registry approximately 90% of patients were women. Etiology of the disease is unclear. Though excessive release of catecholamines is said to contribute. In our case the patient was on thyroxine leading to thyrotoxicosis. That may have been the trigger for the cardiomyopathy.

Clinically the patients features mimic Myocardial Infarction. Sometimes they can be asymptomatic and detected incidentally by ECG or Echocardiography changes. The Troponin is usually positive. ECG may show ST Elevation or ST Depression. Many times ECG shows T Inversion. Echocardiography may show regional wall motion abnormality not specific to any segments. But mostly apical dilation and hypokinesia/akinesia of LV apex is present. Therefore the other name apical ballooning syndrome. Coronary angiogram is usually normal or rarely can have non significant lesions. In our case the coronary angiogram was normal. In case if we are still in doubt, cardiac MRI can be obtained. Cardiac MRI reveals mid to apical LV dyskinesis without delayed gadolinium hyperenhancement consistent with myocardial viability.

Management of Takotsubo Cardiomyopathy overlaps with management of Acute Coronary Syndrome. If ECG reveals ST Elevation patient should immediately be taken up for Coronary angiogram with angioplasty. When coronary angiogram is normal, Takotsubo cardiomyopathy should be suspected. Left Ventricular Dysfunction warrants the use of beta blockers, ACE Inhibitors or ARBs. Arrhythmias such as atrial fibrillation (seen in 5%-15%), VT, and ventricular fibrillation (seen in 5%-9%) are not uncommon in takotsubo cardiomyopathy. When left ventricular thrombus is present, patients should be started on anticoagulation. Usually LV systolic function recovery takes days to weeks. In our patient, thyroxine was stopped andLV function improvement occurred within 2 weeks. LV Ejection fraction improved from 30% to 55%.

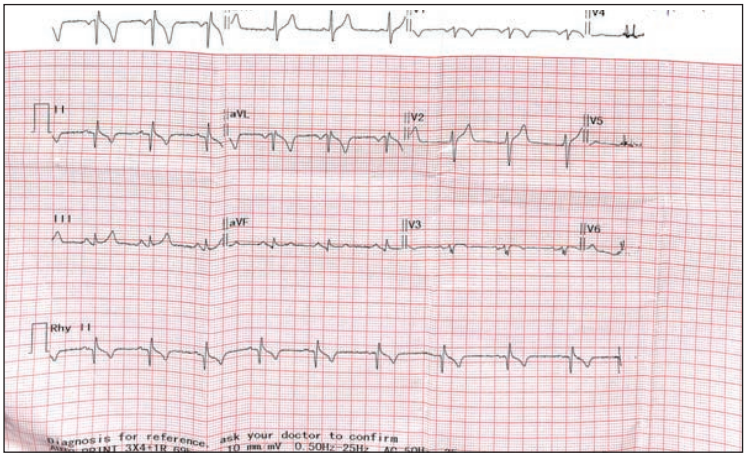
Conclusion: Hence takotsubo cardiomyopathy is an important cardiac entity. It mimics acute coronary syndrome, though it has a more favourable prognosis. ECG and Echocardiography changes are present. Coronary angiogram is normal. The management principle consists of managing heart failure.Usually LV function recovers in few days or weeks.

Dr. BALAJI.S
MRCP (UK), FICC.,
Senior Consultant Cardiologist

Watch Out - The Perils of Misinterpreting ECGs: Minor Errors may cause Major Consequences

A minor mistake in ECG interpretation can have grave consequences. We will present two case examples to explain further.

Figure 1: Case 1-ECG taken outside at 8.43 PM on 03 Sep 2024 leading to the diagnosis of Acute lateral wall MI-STEMI



At 8:43 PM on September 3, 2024, an ECG was performed on a 51-year-old gentleman, Mr. S, at a hospital outside. He presented with chest pain that had lasted for several hours. As per the ECG, the initial diagnosis made was Coronary Artery Disease - Acute ST Elevation Myocardial Infarction (STEMI) affecting the lateral wall. As a result, he was given the loading dose for STEMand an intravenous injection of 5000 units of Heparin.His relatives shifted the patient to our hospital by ambulance.

At first glance, everything seemed to follow the correct protocol. But if one carefully analyze the ECG,the erroneous diagnosis can be made out easily. Upon examining the ECG (See Figure 1) more closely, it becomes evident that the P wave is inverted, the QRS complex is negative in Lead I, and upright in aVR—hallmarks of Dextrocardia, a rare condition where the heart is located on the right side of the chest. In cases of Dextrocardia, the R wave does not progressively increase in size across the chest leads.

However, there's another, more common explanation. This occurs when the ECG technician accidentally reverses the ECG limb leads while performing the ECG. As the saying goes, "The eyes do not see what the mind does not know."

Figure 2: Case 2-ECG taken at SRH at 9.34 PM on 03 Sep 2024

The ECG taken at our hospital with leads properly placed showed a normal tracing without ischemic changes.(see Figure 2) Unless a physician actively checks for this type of technical errors,he might misinterpret the ECG and wrongly diagnose a non-cardiac condition as

an Acute MI. Such an error could lead to unnecessary thrombolysis, with potentially fatal consequences.

In fact, gastrointestinal conditions such as gastric erosion or perforating ulcers can mimic the clinical presentation of acute coronary syndrome. If a physician superficially reviews the ECG and hastily concludes Acute MI, administering thrombolytic therapy or loading doses of antiplatelet agents and Heparin could cause severe complications like hematemesis—or even death.

In this particular case, his pain turned out to be myalgia, and he did not have any serious complication due to the medications.

Case # 2:
Second case is also another example of a technical error leading to the mistaken diagnosis of Acute coronary syndrome.

In the second case, ECG with reversed leads mimicked Inferior wall MI in a patient with chest pain. However, the inverted waves in Lead I, upright waves in aVR and normally progressing chest leads suggested lead reversal.(See Figure 3).When ECG was repeated with properly positioned leads, Inferior wall MI changes disappeared!(See Figure 4)

Conclusion: These examples highlight the critical importance of vigilance in ECG interpretation. Physicians must be aware of common errors made by ECG technicians. Repeating the ECG with correctly placed leads can prevent an outrageously wrong diagnosis.

Figure 3: Case 2-ECG with reversed Right and Left arm leads

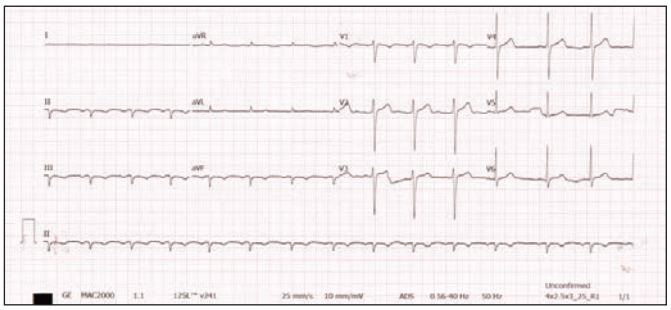
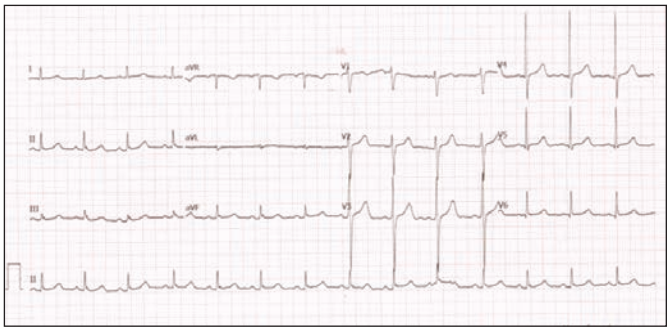


Figure 4: Case 2-ECG with normally positioned leads



Dr. MADHESWARAN.T.A
M.B.B.S., M.D. (Gen Medicine), D.N.B. (Gen Medicine),
D.M. (Cardiology), F.N.B. (Intervention Cardiology), FSCAI (USA)
Senior Consultant Cardiologist

Coimbatore's First Intracardiac Echo (ICE) guided Cryoablation of Paroxysmal Atrial Fibrillation

Case Study

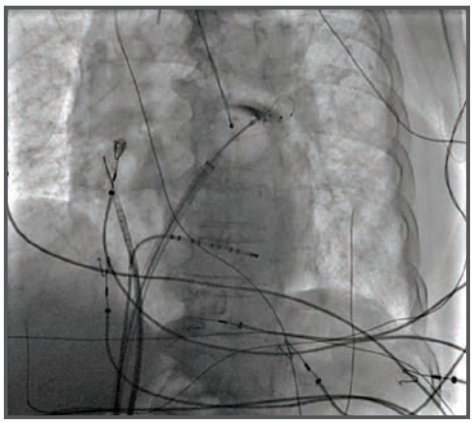
Mrs. SR 67/F

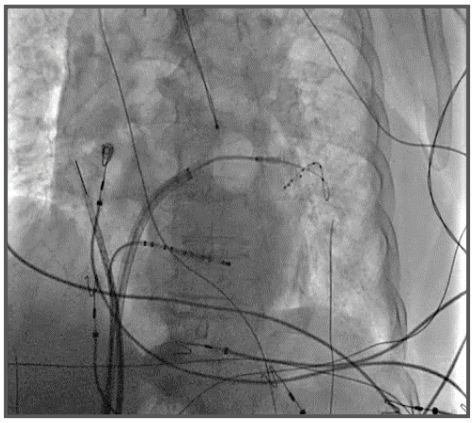
- Systemic Hypertension
- Paroxysmal Atrial Fibrillation
- Recurrent admissions for AF
- Unresponsive to Amiodarone and Flecainide
- Normal LV function
- LA size 4cm
- Successful isolation of all four Pulmonary Vein by cryoablation

CT Pulmonary Veins

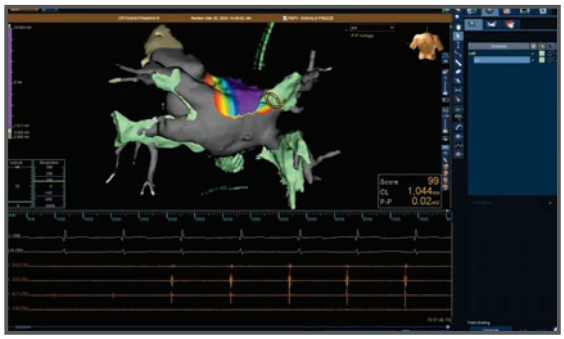
Intracardiac Echocardiography (ICE)

Cryoballoon in Left atrium occluding Pulmonary Vein





3D Mapping



Dr. VICKRAM VIGNESH.R
MBBS, MD, DM (Cardiology), PDF, CCDS (U.S.A)

Consultant Cardiologist & Electrophysiologist

7-day Old Neonate Successfully Underwent A Life Saving Caridac Surgery – 18.09.2024

A 7-day old neonate was admitted at Trichy Government Hospital with a complex heart condition that required immediate medical treatment. For further treatment the baby was referred and transferred through Ambulance to Sri Ramakrishna Hospital within two and half hours through Green corridor.

The ambulance with a fully equipped NICU on wheels, mobile ventilator, accompanied by a dedicated Pediatrician and expert NICU Nurse provided continuous medical supervision, ensuring the highest level of care to the neonate during the transfer.

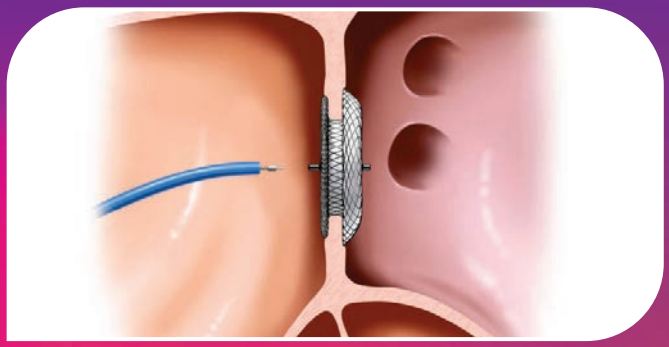
The baby was taken up for urgent surgery at Sri Ramakrishna Hospital and with the team led by Dr. Vijay Sadasivam, Consultant Pediatric Cardiothoracic Surgeon; Dr. Manfred Fernando, Junior Consultant Cardiothoracic Surgeon, and Cardiac Anaesthesiologists Dr. Narendran Menon and Dr. Manikandan; successfully performed the intricate heart procedure on the baby. The pre and post operative care is being provided by team Dr. Siddartha Buddhavarapu, Consultant Neonatologist; Dr. S. Devaprasath, Consultant Interventional Pediatric Cardiologist; and Dr. Suja Mariam, Consulant Neonatologist and the baby was discharged in a good health.

World Pharmacist Day – 27.09.2024

World pharmacist day was observed by Department of Clinical Pharmacy and Pharmacy on 27.09.2024 with the theme " Pharmacy: Meeting Global Health Needs"

Dr T.K. Ravi, Principal SRIPMS, COP was the Chief Guest and Dr Kripa Sridhar, Consultant - Infectious Disease, Sri Ramakrishna Hospital was the Guest of Honor. The program highlighted the theme and scope of Clinical Pharmacy in health care sector. All the Pharmacists, Clinical Pharmacists and Pharmacy Managers were honored on this occasion for their untiring works.

The department of Pharmacy and Department of Clinical Pharmacy presented the Annual report for the year 2023-2024. A short video was played by the department of Clinical Pharamcy on services rendered by the clinical pharmacy department.



Transcatheter Device Closure of Atrial Septal Defects

The interatrial septum, which separates the right and left atria, begins developing during the fifth week of gestation. Any defects in this process may lead to the formation of an atrial septal defect (ASD), allowing abnormal communication between the atria. There are four primary types of ASDs: ostium primum, ostium secundum, sinus venosus, and unroofed coronary sinus ASD. ASDs are among the most common congenital heart defects, frequently requiring intervention.

Transcatheter Device Closure for ASDs: Transcatheter device closure has become the preferred treatment method for ostium secundum ASDs. The first attempt to use a device for ASD closure was made by King and Mills in 1974 on animal models, marking the beginning of a long journey toward innovation in percutaneous ASD closure techniques. Over the past seven decades, advancements in transcatheter-based devices have greatly improved patient outcomes.

Comparison: Transcatheter vs. Surgical ASD Closure: A meta-analysis comparing transcatheter ASD closure with surgical methods revealed several advantages for the transcatheter approach. It has a high success rate, lower rates of adverse events, and shorter hospital stays. The transcatheter approach has a 95.7% success rate, compared to 100% for surgery, but significantly fewer complications (7.4% vs. 24%). Hospital stays are also shorter with the transcatheter method (1.0 ± 0.3 days) versus surgery (3.4 ± 1.2 days), with no mortality reported in either group. Major complications were also lower in the device group (1.6%) compared to surgery (5.4%).

Complications of Transcatheter ASD Closure: Though transcatheter closure is largely safe, complications have been documented. These include femoral arteriovenous fistulas, device embolization, cardiac erosion, aortic incompetence, new-onset migraine, arrhythmias, thromboembolism, and left ventricular dysfunction. However, these complications are rare, and the occurrence rates are quite low. For example, the incidence of femoral AV fistulas is around 0.004-0.02%.

Case 1 YOUNGEST CHILD

Baby A, Female, 9 months 15 days, presented with a history of recurrent respiratory tract infections for the past 5 months, requiring multiple hospital admissions. Multicystic Dysplastic Kidney (MCDK): Diagnosed antenatally, leading to left nephrectomy at 3 months of age The child experienced abdominal distension from birth and required high blood pressure management postnatally, which normalized after nephrectomy. Recurrent Respiratory Infections: Multiple hospitalizations for pneumonia. Delayed motor and cognitive milestones. Birth History: Late preterm (36 weeks) LSCS, Birth Weight: 3.1 kg Neonatal Complications: Did not cry after birth, likely hypoxic-ischemic encephalopathy (HIE), requiring oxygen support for 3 days. NICU Stay: 15 days for respiratory distress related to MCDK.

CHALLENGES

- **LEAST WEIGHT: 7.6 kg (<3rd percentile)**
- Syndromic - Low-set ears and slightly depressed nasal bridge.
- BRONCHOPNEUMONIA
- Echocardiography Large ostium secundum ASD WITH SEVERE Moderate pulmonary artery hypertension.

ASD device closure done after infection subsided successfully.

- **ASD size – 12MM**
- **Device size – 14 AMPLATZER ASD DEVICE, 8F MULLIS SHEATH**

ECHO

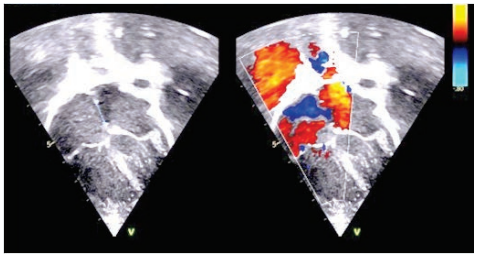


Fig 1 12 mm OS ASD

CATH IMAGE

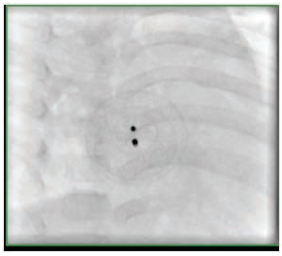


Fig 2 Intact ASD device

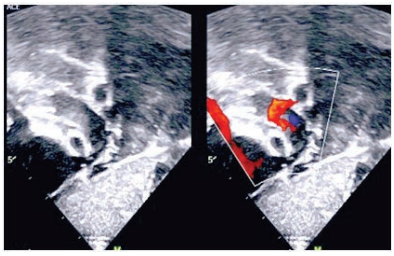


Fig 3 echo no residual ASD

CASE 2 LARGEST ASD AND DEVICE

MR K, **a 41-year-old male,** symptoms of Dyspnoea on exertion and palpitation class 2,

- **ASD size – 39x44 mm ostium secundum ASD**
- **Device size – 46 AMPLATZER ASD DEVICE,14F MULLIS SHEATH**

- moderate pulmonary artery hypertension, and adequate left ventricular (LV) systolic function. His coronary angiogram was normal

- **CHALLENGES**
  - Adult congenital heart disease
  - **Largest size available in india**
  - Difficult to deploy large ASD

The ASD device closure was successfully performed with no residual defects or complications.

ECHO

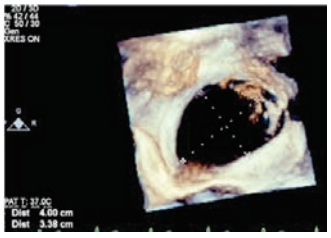


Fig 4: 3d echo showing large OSASD

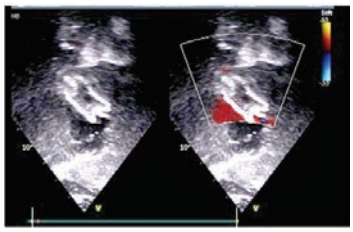


Fig 5: ASD device intact, no residualASD

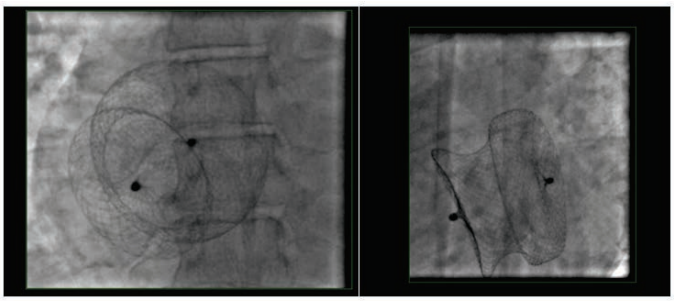


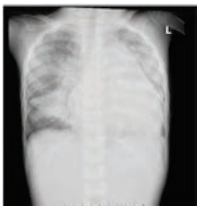
Fig 6: Angio image Ap and lateral showing ASD device

CASE 3 MULTIPLE ASD DEVICE WITH SEVERE PAH

- Baby N, **a 2-year-7-month-old** female, weight **9.8kg** was admitted with complaints of cough, increased work of breathing.
- Past history includes poor weight gain, recurrent respiratory tract infections (RTIs), and hospital admission for breathlessness.
- On admission, she was tachypnoea and tachycardia. Blood investigations revealed an elevated C-reactive protein (CRP),
- A chest CT scan showed a right middle lobe collapse with consolidation and multiple subsegmental collapse on the left side

- **ASD size – 8mm and 16mm ostium secundum ASD**
- **Device size – 14 and 20 AMPLATZER ASD DEVICE**

Chest Xray showing cardiomegaly and right middle pneumonia



Despite these challenges she was treated with intravenous antibiotics, anti-failure medications, and supportive care. The child showed clinical improvement, and multiple ASD device closure was done successfully and discharged with stable vitals

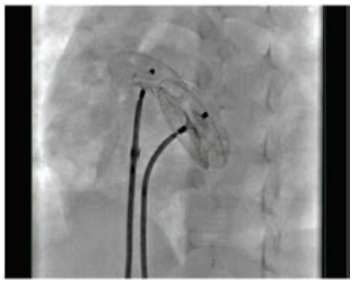


Fig 7: multiple OS ASD

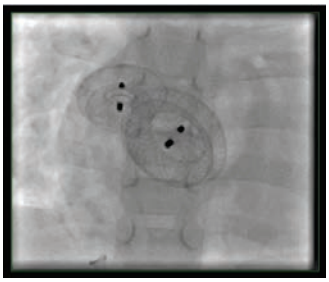
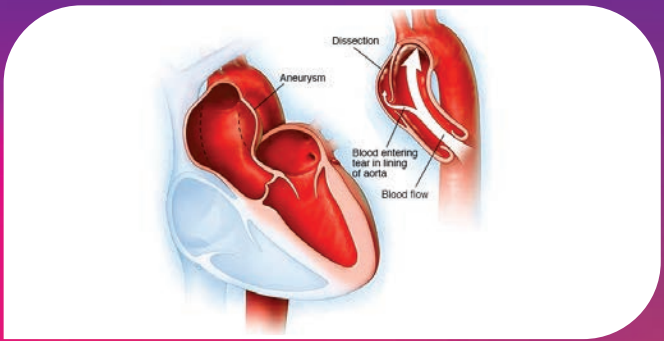


Fig 8: 2 devices intact, no residual ASD

Conclusion: Transcatheter ASD closure offers an effective, less invasive alternative to surgery, with a high success rate, fewer complications, and shorter recovery time. While rare complications do exist, they can be managed with careful patient selection and follow-up, ensuring that transcatheter-based closure remains a cornerstone in modern ASD management.

Dr. DEVAPRASATH.S
MD (Paediatrics), FNB (Paediatrics Cardiology).,
Consultant Interventional Paediatric Cardiologist



The story of 3 Arches

Pathologies affecting the Aorta

- Dissections
  - Acute
  - Chronic
- Aneurysms
  - Ascending aorta
  - Arch of aorta
  - Descending and Thoraco abdominal aorta

Risk factors

- Hypertension
- Connective tissue disorders
- Cystic medial disease of aorta
- Aortitis
- Iatrogenic
- Atherosclerosis
- Bicuspid Aortic valve
- Trauma

Classification - Aortic dissection

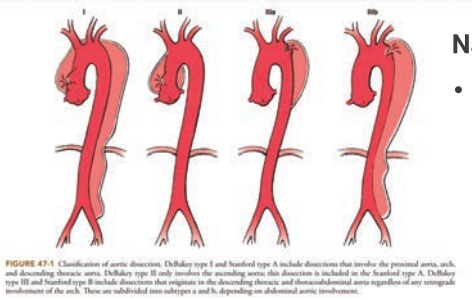


FIGURE 47-1 Classification of aortic dissection. DeBakey type I and Stanford type A include dissections that involve the proximal aorta, arch, and descending thoracic aorta. DeBakey type II only involves the ascending aorta; this dissection is included in the Stanford type A. DeBakey type III and Stanford type B include dissections that originate in the descending thoracic and thoracoabdominal aorta regardless of any retrograde involvement of the arch. These are subdivided into subtypes a and b, depending on abdominal aortic involvement.

Natural history

- Acute Type A
  - 50 % dead within 48 hours
  - 1% mortality per hour

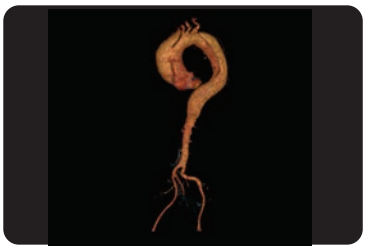
Our 3 arches

- Acute on chronic dissection
- Ascending and Arch aneurysm S/P Aortic valve replacement
- Aneurysm of Arch of aorta

CASE 1. ACUTE ON CHRONIC DISSECTION

- 70 years female
- Complaints of Chest pain radiating to back for 4 days
- breathlessness for 4 days
- Investigation : 2D Echo – Flap in ascending aorta and LV dysfunction

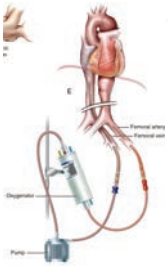
CT Aortogram: Chronic Type A dissection



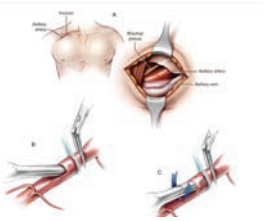
Management

- Median Sternotomy
- Cardio pulmonary bypass
- Cooling
- Aorta cross clamp and Cardioplegic cardiac arrest
- Dissecting out all segments
- Total circulatory arrest
- Anastomosis
- Restart the Flow

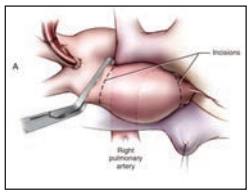
Surgical Management



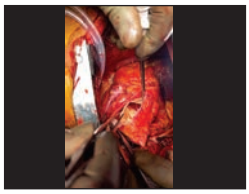
Femoral artery and vein bypass



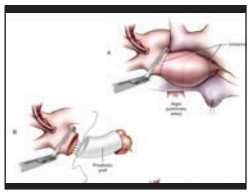
Axillary artery cannulation



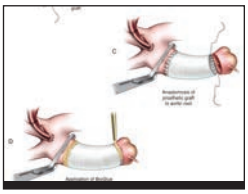
Aorta cross clamp and excising the dissected segments



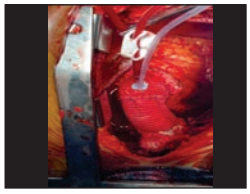
Showing dissected aorta with true and false lumen



Proximal Anastomosis of graft to aorta



- Distal graft anastomosis to

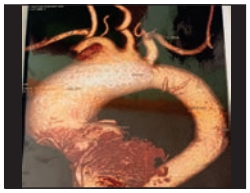


After Surgery

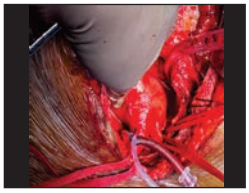
Before Surgery

CASE 2. ASCENDING AND ARCH ANEURYSM S/P AORTIC VALVE REPLACEMENT

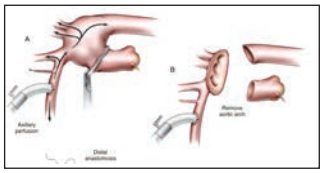
- 58 yrs male
- Underwent AVR mechanical valve for Severe Aortic stenosis in 2002
- No specific complaints
- On routine follow-up he was diagnosed to have Ascending aorta and Arch aneurysm



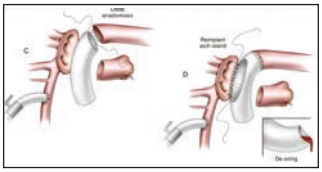
CT Aortogram



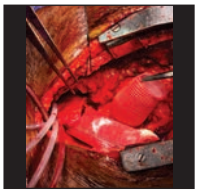
Showing dilated aorta and arch



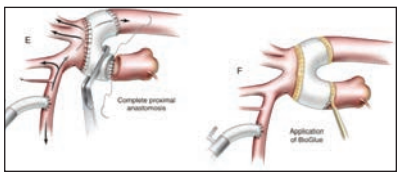
After Aorta cross clamp and island of arch vessels creation



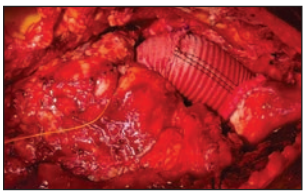
- Graft anastomosis to descending aorta
- Island of arch vessels anastomosis to graft



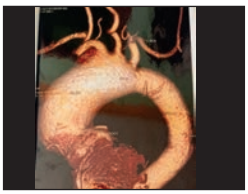
Picture showing island of arch vessels anastomosis done and graft to proximal aorta anastomosis done



Proximal anastomosis to aorta



After Surgery

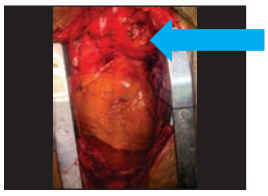


Before Surgery

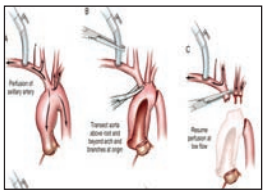
CASE 3. ANEURYSM OF ARCH OF AORTA

- 60 yrs male
- No specific complaints
- On routine health check for inguinal hernia surgery he was diagnosed to have aneurysm of arch of aorta on evaluation for cough

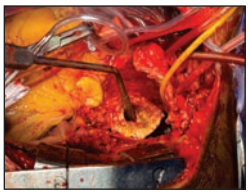
Aneurysm of Arch of aorta



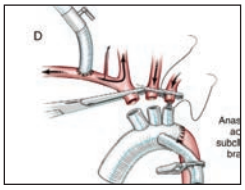
Picture showing dilated arch of aorta



Dissection of individual arch vessels

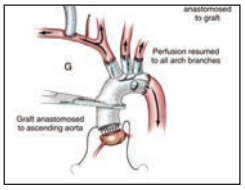


- After dissection
- Picture showing descending aorta and arch vessels dissected individually

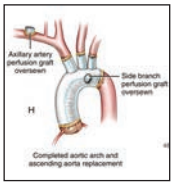


Individual arch vessels being anastomosed

Picture showing individual arch vessels anastomosed to graft



Proximal aorta anastomosis



Completed arch

After Surgery

Before Surgery

Dr. THIAGARAJA MURTHY.S
MS., FRCS – (General Surgery)., FRCS – (Cardiothoracic Surgery)

Chief Consultant Cardiothoracic Surgeon

Our Experience in Low Body Weight Infants Undergoing Corrective Cardiac Surgery

Introduction: Infants with low body weight (LBW) following cardiac surgery are a major challenge for the post cardiac surgery care unit. It has been observed that post surgery outcome for LBW infants is worse compared to the outcome of normal body weight infants. Evidence indicates that infants with congenital heart disease (CHD) are more prone to low body weight (LBW). LBW in CHD infants is caused by various contributing factors such as low birth weight, severe malnutrition due to a state of cardiac failure, and poor nutritional status due to repeated infections. Incidences of low birth weight were reported to be approximately 8–23% of live born infants with congenital heart disease, and these incidences also varied with specific congenital heart defects. LBW infants with CHD are usually critically ill, may have other organ dysfunction, and may need early cardiac surgical interventions. Some patients may require emergency surgery that cannot be delayed to prevent significant risk to their life. The challenge is to balance the risk of performing early cardiac surgery on LBW patients, or to delay for weight gain.

In the past, concerns over increased mortality and morbidity in low body weight infants have led some centers to delay surgical intervention until somatic growth reaches a specific weight. But recent studies report that delaying surgery for somatic growth may deprive babies from urgently needed surgery with consequent increase in morbidity and mortality. The rate of somatic growth in children with heart diseases is slow, and is often an unachievable mission. Here we present our recent experience in performing Open heart surgery in very Low body weight Infants. These patients are some of the very few LBW babies operated in our country.

Case1: A 2 month old baby with weight of 2.6kg was evaluated for tachypnoea and irritability in outside hospital. Screening ECHO showed massive pericardial effusion and mass in RA. Baby was shifted to Ramakrishna hospital and Pericardiocentesis was done. Around 200ml of blood stained fluid was aspirated. Echo showed a large right Atrial mass.

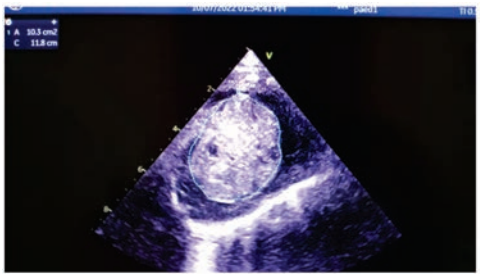


Fig: ECHO image showing mass in RA.

Cardiac CT showed a large tumor in right atrium showing intense enhancement in the periphery with poor enhancement in the center - ?Haemangioma / ?Angiosarcoma. Baby was planned for surgical excision of the tumor. Baby underwent Complete Excision of the tumour

Biopsy revealed – Capillary Hemangioma (a very rare Cardiac Tumour). Patient got discharged and came for revisit. Patient is doing well at followup.

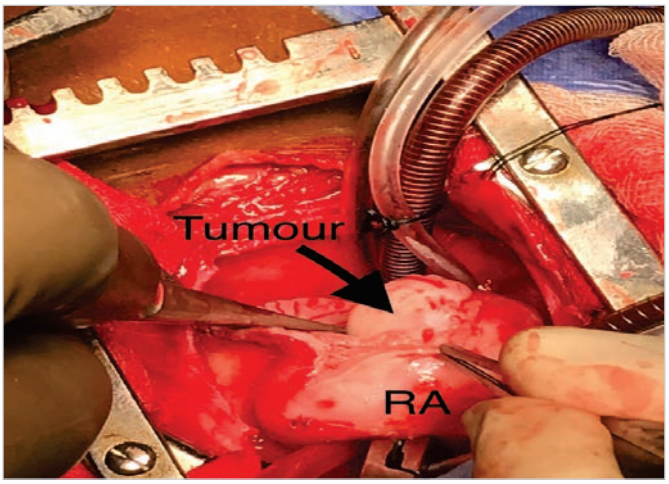


Fig: mass in RA

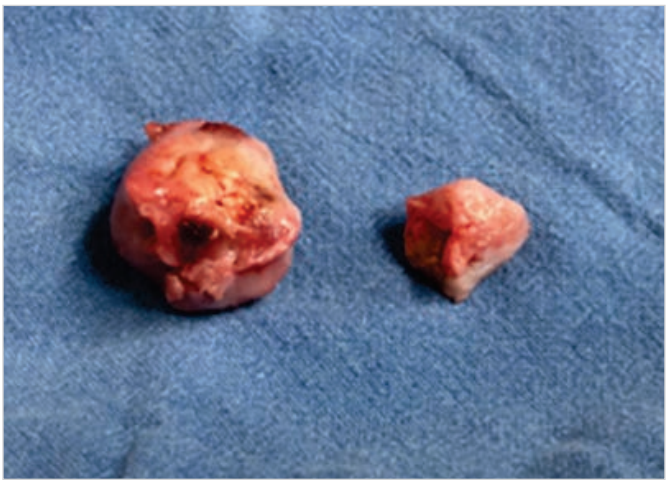


Fig: excised RA mass

Case 2: A 7 month old female child with weight of 2.5kg was evaluated for failure to gain weight and repeated LRTI. Echo evaluation showed Large PDA and Large VSD. Patient admitted for surgical management. Patient underwent VSD closure with Dacron patch and PDA closure. Intraoperative and postoperative period were uneventful. Patient is discharged and doing well. Baby came for review after three months and had a weight gain of 1kg.

Case 3: A 1 Month old 1.6kg baby admitted with Echo showing 2cm pedenculated mass in IVC – RA Junction, distal end is mobile, moving in and out of tricuspid valve. Baby Underwent RA mass excision. Patient is discharged and doing well now. **THIS IS ONE OF THE SMALLEST BABY TO UNDERGO OPEN HEART PROCEDURE SUCCESSFULLY IN COIMBATORE.**

Conclusion: In the early era of cardiac surgery, LBW infants were treated either medically (considered inoperable at that time) or were candidates solely for palliative procedure. The immaturity of the organ systems of LBW infants, including lungs, liver and, most importantly neurologic development puts them at risk for many types of morbidity after pediatric cardiac surgery. Indeed, non-cardiac factors may be associated with low body weight, and may jeopardize the outcome of surgery, thus requiring careful evaluation.

Risk of surgery and post operative morbidity can be neutralized with surgical excellence and delicate post operative management. Patients with LBW can undergo cardiac surgery with overall satisfactory results but with increased risk of ICU morbidity and mortality. In our opinion, each case of LBW patients must be judged for the risk of higher mortality in cardiac surgery versus the benefit of normalizing patient hemodynamics and preventing further damage to body organs while waiting for somatic growth.

Dr. MANFRED FERNANDO.J.X.A
MS(Gen), Mch., (CTVS),
Junior Consultant Paediatric Cardiothoracic Surgeon

Dr. VIJAY SADASIVAM
MS, MCH, (CTVS), DNB
Consultant Paediatric Cardiothoracic Surgeon

USE **HEART** FOR ACTION

World Heart day

Sri Ramakrishna Hospital

LARGEST CARDIOLOGY EXHIBITION @ BROOKEFIELDS MALL – 21.09.2024 & 22.09.2024

Sri Ramakrishna Hospital celebrates "World Heart Day" to emphasize the importance of heart health in the growing generations by hosting Largest Cardiac Exhibition with an aim to spread awareness and educate the people. The exhibition was inaugurated by Coimbatore District Collector Mr.Kranthi Kumar Pati, IAS , in the presence of SNR Sons Charitable Trust Chief Executive Officer Mr. C. V. Ramkumar, Hospital Medical Director Dr. S. Rajagopal, Medical Superintendent Dr. S. Alagappan on 21.09.2024. The exhibition was then led by Consultants from Department of Cardiology and Cardiovascular & Thoracic Surgery. The exhibition featured a 3D modeled display of human heart, offering an unique insight on working of the heart, helping the visitors to understand the functions of heart and the importance of good heart health.

One of the key highlights of the exhibition was the live Stent demonstration, which carefully illustrated how blockages in the heart are treated through minimally invasive procedures. Additionally the exhibition includes an exhibit on pacemakers, demonstrating how these life saving devices are implanted and how they work to regulate abnormal heart rhythms, alongside discussions about advances in Paediatric Cardiology, specialized cardiac surgeries, and Electrophysiology, Laser Coronary Angioplasty through video demonstrations. A live mannequin CPR demonstration was done by students from Sri Ramakrishna Hospital Institute of Allied Health Sciences to educate on how to provide effective cardiopulmonary resuscitation (CPR) when there is an emergency. The expert Dieticians from Sri Ramakrishna Hospital offered free diet advice on heart healthy foods and habits that are effective in preventing heart disease.

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