Case Reports

Drs. Amina Ibrahim and Chima Rupert

Resident Cardiology Medical Officers

Cardiocare Multispecialty Hospital,

Abuja-Nigeria.

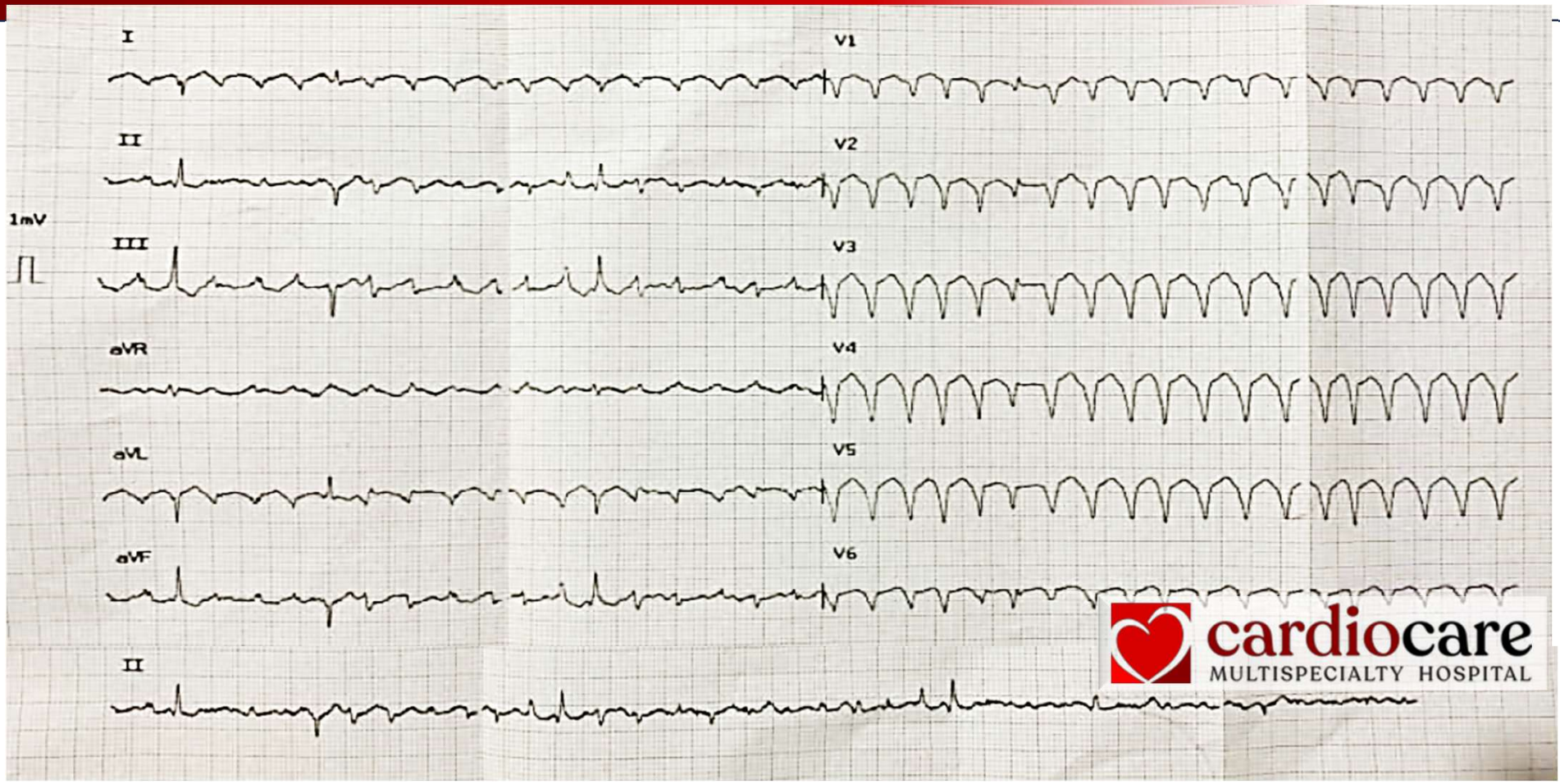
Case 1

56y old Female

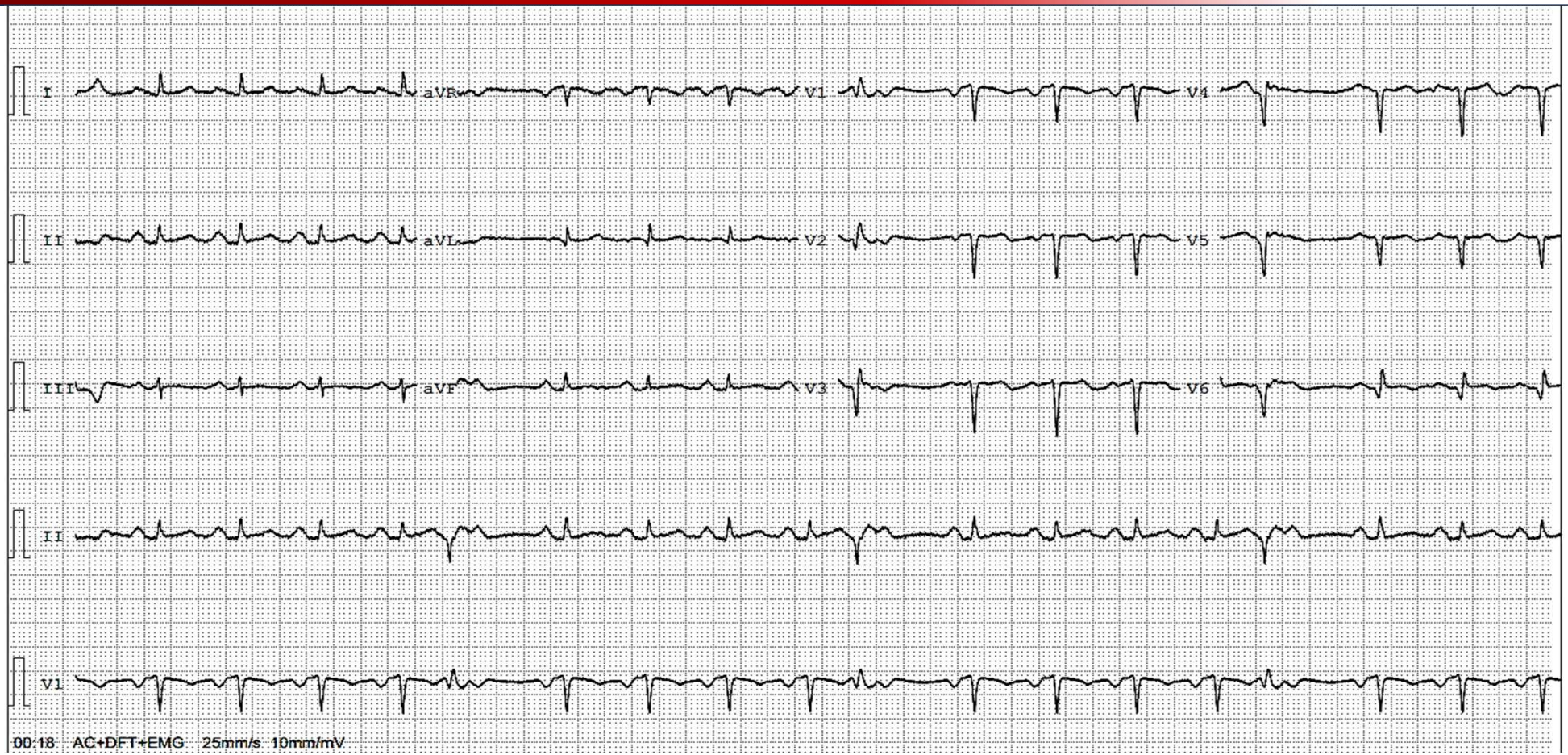
Emergency Room

- 56yr old Female with Palpitations and Altered Sensorium
- A known hypertensive and diabetic patient for over 10 years
- On Exforge, Bisoprolol, Galvus Met, Amaryl and Atorvastatin
- Had been on routine drugs and compliant with therapy and follow up
- Previous ECGs and ECHO said to be “normal”
- No Chest pains, No caffeine or pro-arrythmic medications taken recently
- Referred on account of severe arrythmias for further management

ECG from Referring Hospital



ECG in Emergency Room



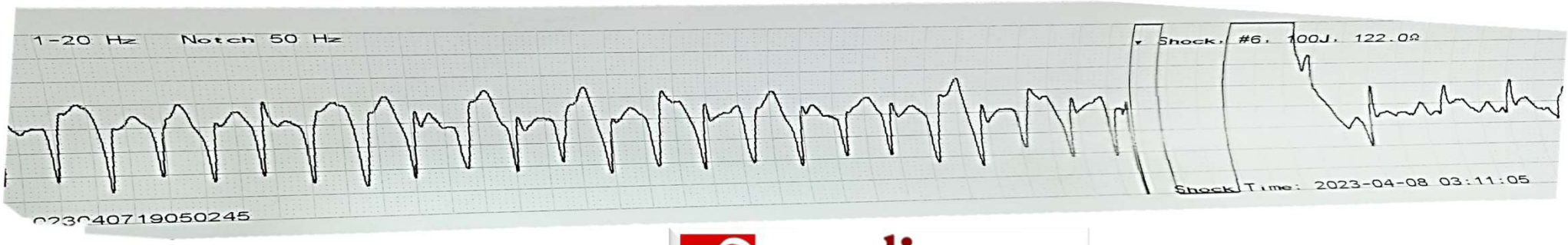
- Blood Pressure found to be 124/68mmhg,
- Pulse 102/min regular with ectopics on admission
- Now fully conscious, not in respiratory distress
- Other examination findings essentially normal
- Admitted to the Intensive Care Unit
- Continuous Cardiac Monitoring
- Placed on Oral Amiodarone therapy as well as anticoagulation

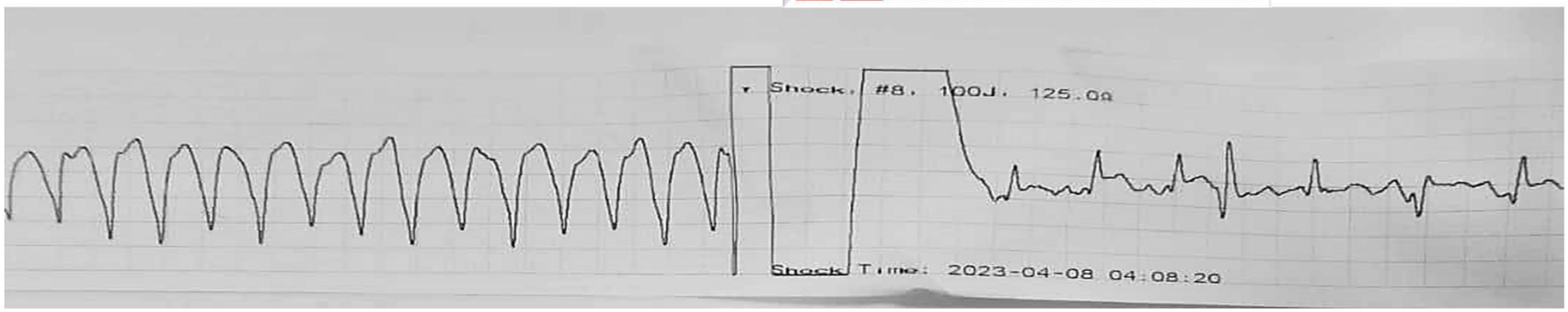
- Apparently stable until 6hrs later:
  - Blood pressure- 82/49 →78/40
  - Heart Rate- 178/min
  - Pulse is present
  - Diaphoretic, Drowsy but responsive
  - ECG on Monitor similar to referring ECG- Multiple episodes
  - IV Amiodarone loading dose given and continuous infusion
  - No response to Amiodarone
  - DC Cardioversion

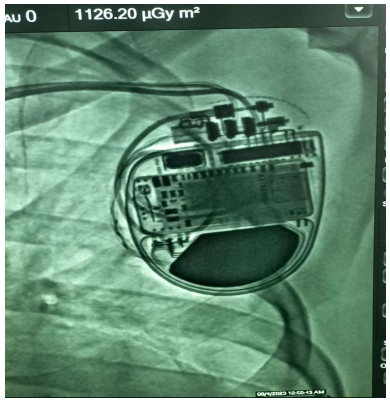
Day 4

- Relatively stable in ICU
- Requiring high dose Maintenance Amiodarone
- Normal Coronary angiogram
- Implantable Cardioverter Defibrillator Inserted
- Intra-Op Multiple episodes of Vtach requiring Cardioversion and IV Amiodarone

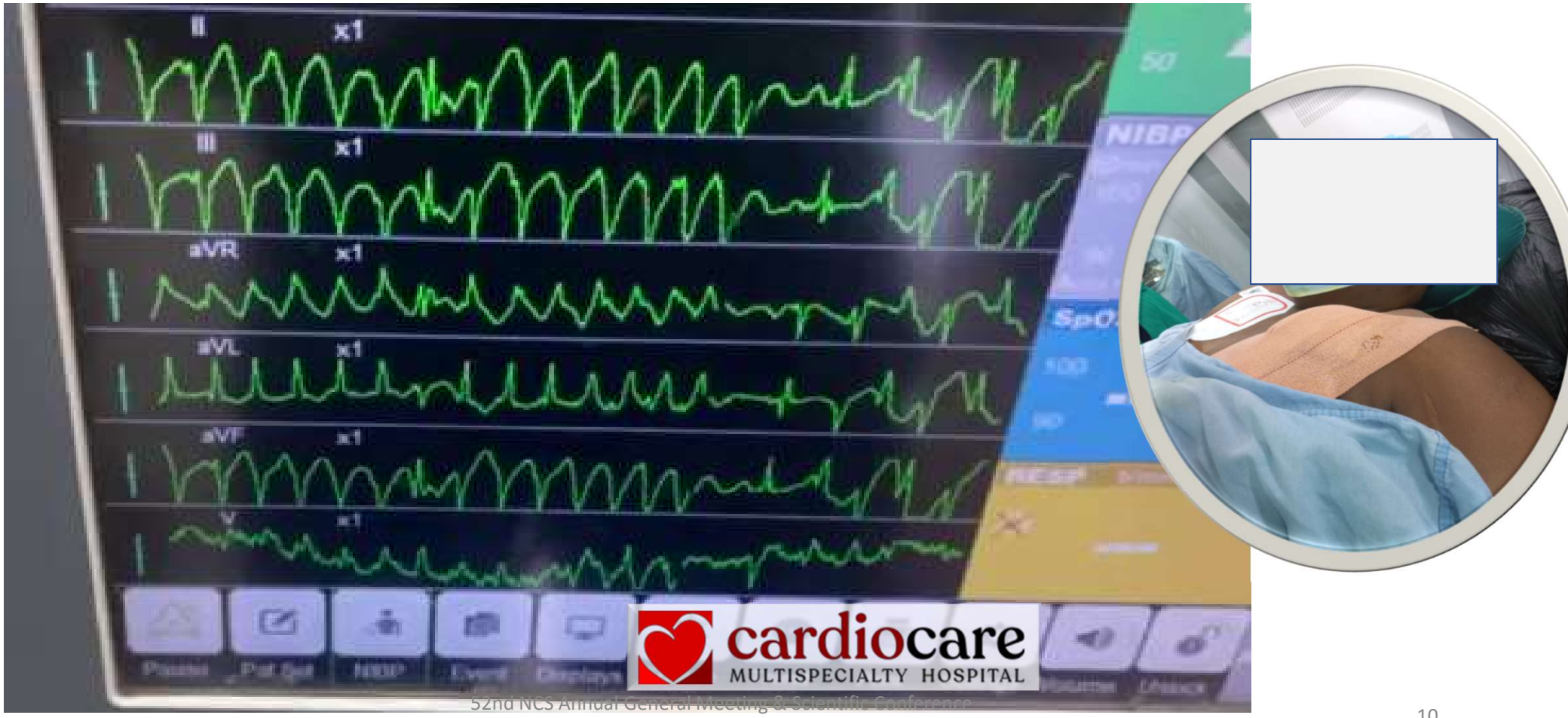
Intra-Op Day 4- 8 epsiodes of V tach



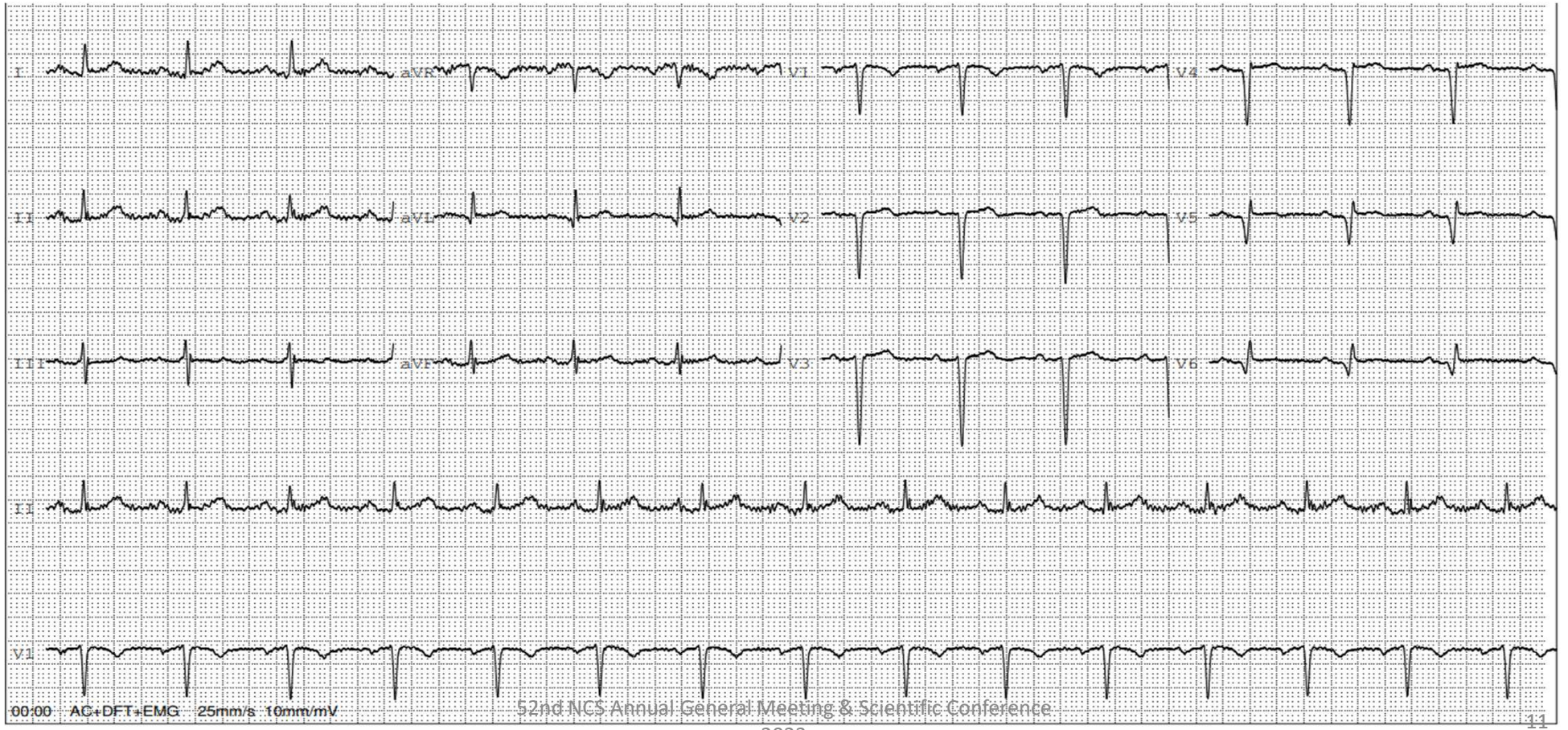




Post Implant



Clinic Visit



Case 2

50yr old Male with HFrEF

52 yo Male

HFrEF for over 1.5yrs

LVEF- 28%

cardiocare
MULTISPECIALTY HOSPITAL
The Limi Hospitals

Image 1

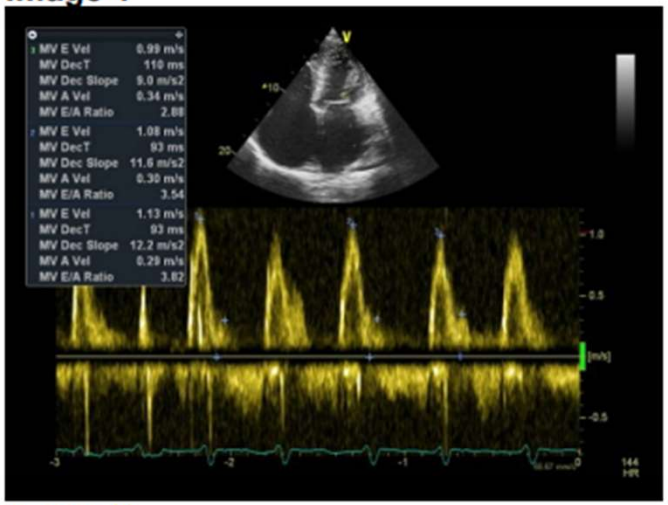


Image 2

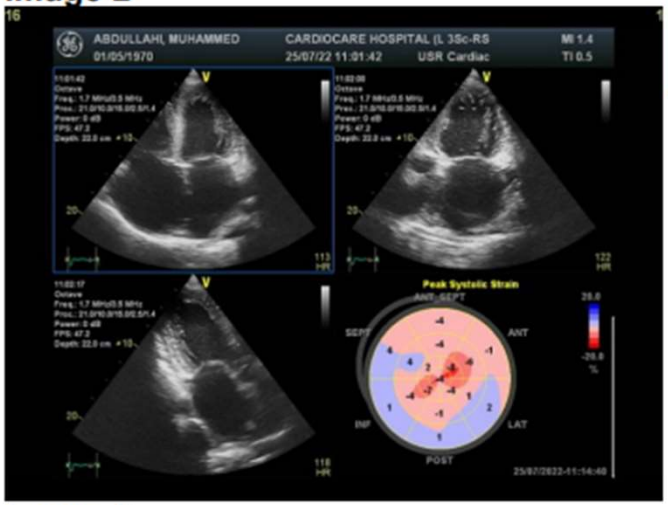


Image 3

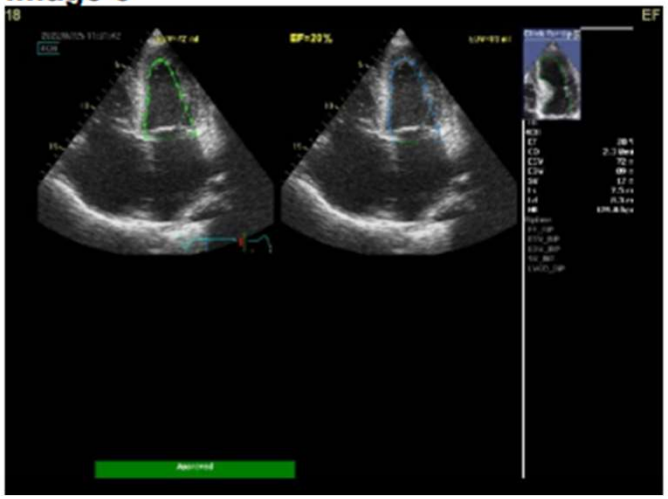
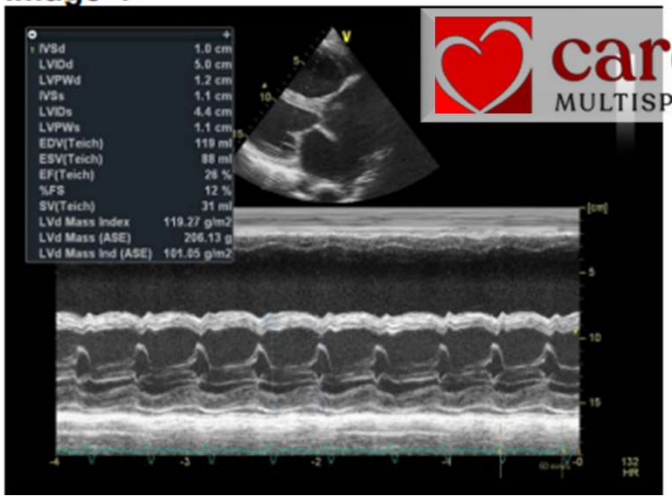
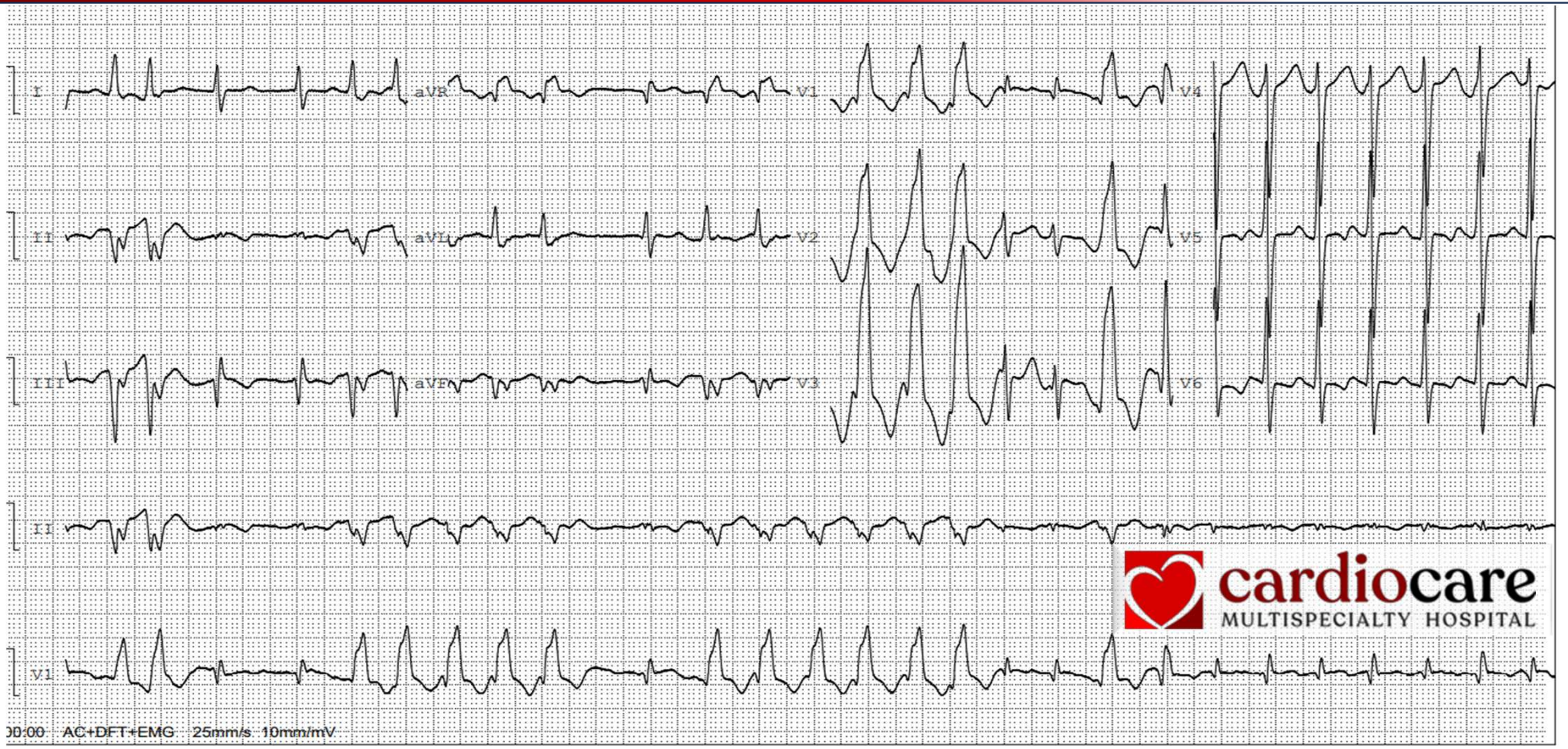


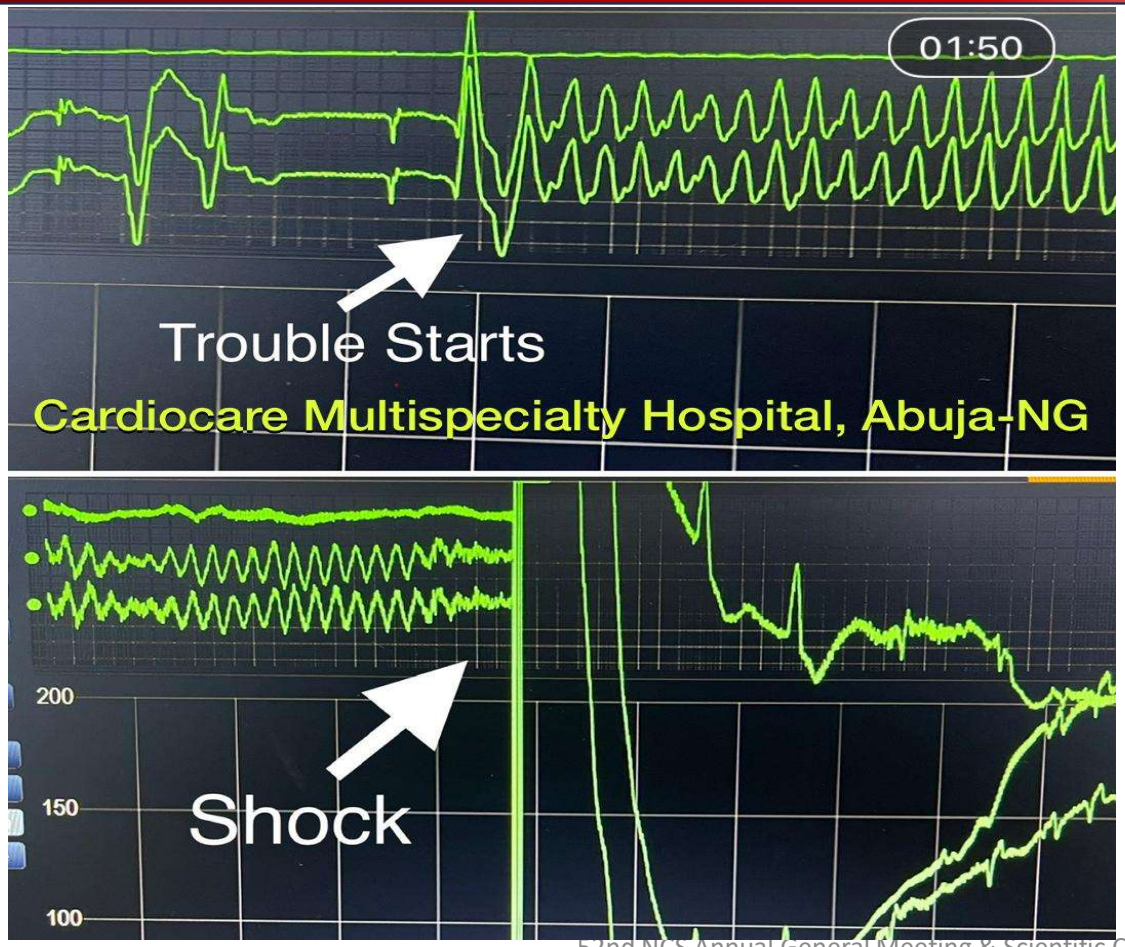
Image 4



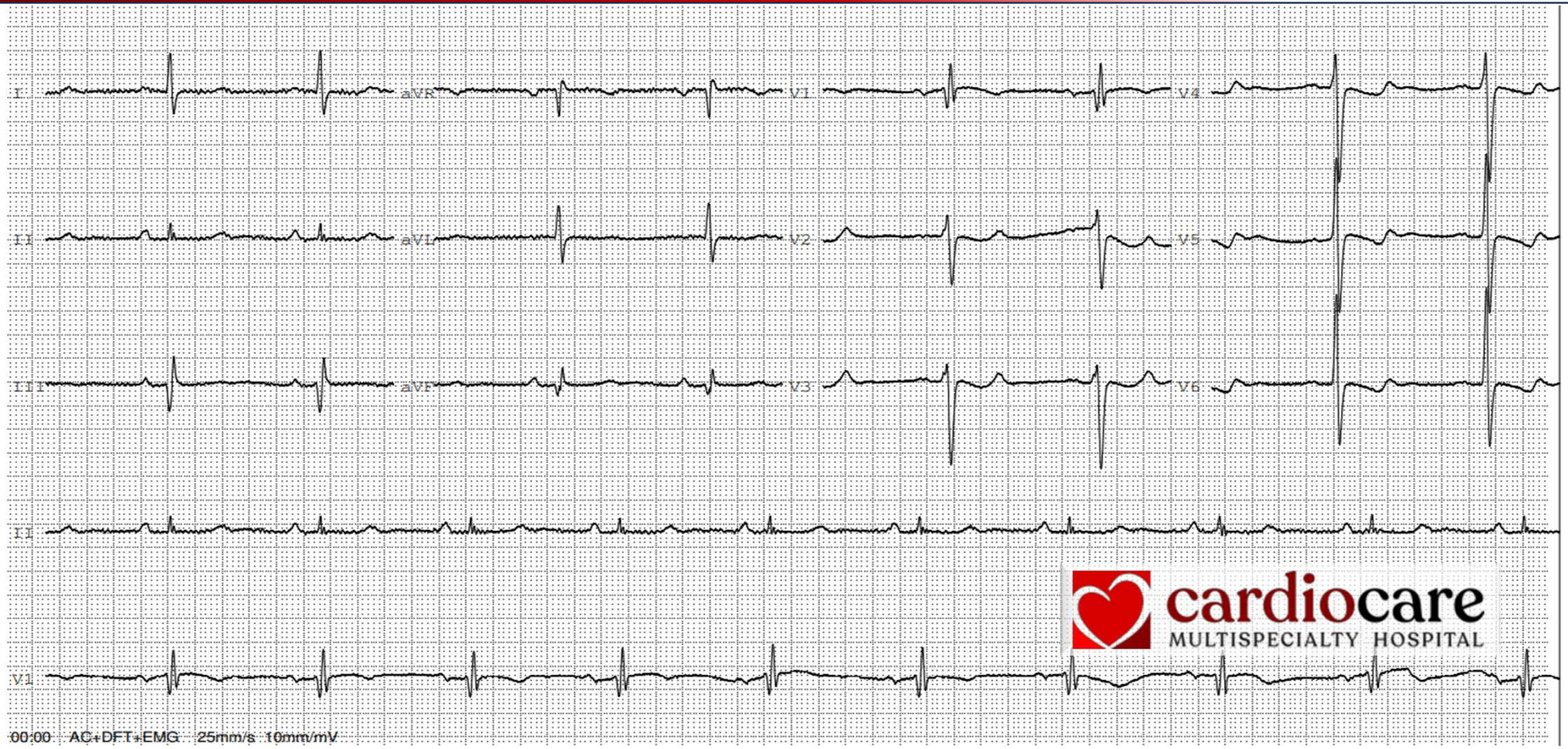
cardiocare
MULTISPECIALTY HOSPITAL


I
aVR
V1
V4
II
aVL
V2
V5
III
aVF
V3
V6
II
V1
00:00 AC+DFT+EMG 25mm/s 10mm/mV

Coronary Angio- Normal
After coronary angio



Optimized HF treatment, ICD implanted



Repeat PRESENTATION

- A year after he had dual chamber ICD inserted and had been stable on medications.
- Presented with complains of chest pain that had started about 4 hours prior to presentation.
- Chest pain was said to woken him suddenly from sleep , described as sharp, generalized, and did not radiate.
- There was associated history of diaphoresis and episodes of syncope during the chest pain.
- Episodes were brief lasting about 30 seconds each before spontaneously resolving.

- On examination he was found to have elevated blood pressure of 159/100mmHg, noted to be tachychardic with pulse rate of 112 beats per minute, irregular, full volume.
- Heart sounds: S1 S2 only
- Other aspects of the cardiovascular examination were essentially normal.
- He was placed on cardiac continuous cardiac monitor while in the emergency room which showed continued to show intermittent episodes of a polymorphic V.Tach.

Plan

- He had a 12 lead ECG done immediately

ECG

Investigations

- Troponin
- EUCR
- Serum magnesium, phosphtae
- Full blood count

Management

- Admitted into ICU
- Commenced on IV amiodarone and tabs metoprolol succinate
- Continued to have intermittent episodes of v-tach and IV Lidocaine was later started.
- Device was also interrogated
- Serum Troponin was elevated
- Coronary Angiogram was normal

Review

Ventricular Storms???

- Ventricular storms are uncommon but life-threatening condition characterized by
  - the occurrence of three or more episodes on ventricular tachycardia(VT) within 24 hours requiring intervention.

- Episodes of ventricular tachycardia (VT) storm pose a risk of sudden death even in individuals with trans-venous implantable cardioverter-defibrillators (ICD) and can negatively impact the prognosis of those who survive.

Managment

- The initial step in the management of any patient experiencing ventricular tachycardia (VT) involves with resuscitation as per ACLS protocol.

- In cases where VT leads to haemodynamic instability or is accompanied by significant co morbidities admission into an intensive care unit becomes imperative as sedation, intubation and hemodynamic support may be required

Management

- Addressing reversible causes is paramount, specifically correcting issues such as hypovolemia or electrolyte imbalances.

Reversible	Non-reversible
Electrolyte derangements: hypokalemia, hypomagnesaemia	Ventricular scars from myocardial infarction
Acute Ischemia	Chronic renal failure
Worsening heart failure	Ventricular aneurysm
Sepsis	Cardiac infiltration e.g tuomors
Missed medications	
Proarrhythmic medications	
Left ventricular pacing	

Management

- Following immediate stabilization, a comprehensive patient history should be obtained, focusing on precipitating factors, previous admissions, drug history (including recent changes), and adherence to medications
- A focused clinical examination should be conducted, assessing for heart failure, signs of cardiogenic shock, and the device site if applicable

Management

- Key investigations involve analysing venous blood for electrolyte abnormalities, brain-derived natriuretic peptide, and troponin levels to investigate the underlying cause.

- Whenever feasible, obtaining a 12-lead ECG of the VT is recommended, as it aids in guiding the ablation strategy by pinpointing the origin and mechanism of the VT.

Management

- An antiarrhythmic drug regimen involving beta-blockers, amiodarone, lidocaine or procainamide should be contemplated in the acute phase to further supress further ventricular tachyarrhythmias.

- If there are indications of an ischemic trigger based on history, ECG findings, or focused echocardiography, activating a primary percutaneous coronary intervention pathway is recommended promptly.

Management

- In instances of recurrent sustained V-Tachycardia with haemodynamic compromise or progression to ventricular fibrillation, prompt termination through DC cardioversion may be needed.

Summary SOP of Electrical Storm

cardiocare MULTISPECIALTY HOSPITAL
The Limi Hospitals

Definition of Electrical Storm	2 or more sustained episodes within 24 hours of: • ventricular tachycardia, and/or • ventricular fibrillation, and/or • appropriate shocks from an ICD	
Aetiology	1. Acute Myocardial Infarction 2. Structural Heart Disease 3. Inherited arrhythmic syndrome **Precipitants:** Electrolyte Derangement, STEMI, sepsis, worsening HF, ICD dysfunction, etc	
Prognosis	• Electrical storm typically has a poor outcome. **EMERGENCY CARDIOLOGY & MDT MANAGEMENT!!!**	
Investigations	• **12lead ECG, Echo, Troponins, Electrolyte Panel, Thyroid Panel, ICD interrogation (also every 3-6 months)**	
Treatment	• IV Amiodarone and/or • IV Lidocaine (preferred in MI, but check levels and neurotoxicity)	• Beta Blockers (IV Propranolol) • EP
Other Treatment	• Revascularization (as required) • Treat precipitant • Sympathectomy • ICU Care	• ICD btw 24-48hrs of control • Circulatory Support may be needed • Sedation (+/- Intubation) • Psychotherapy and Counselling

Indications for ICD-Summary

CLASS 1

- EF<35% and NYHA class 2 or 3 (EF<30% in class 1)
  - after 40/7 post MI
  - Non-ischaemic DCM
- Non-sustained VT due to prior MI
  - EF less than or equal to 40%, and
  - Inducible VF or sustained VT at EP study
- Cardiac Arrest Survivors due to VF/VT
- Structural Heart Disease + sustained Spontaneous VT
- Syncope of Undetermined Origin with Clinically significant VT/VF induced at EP study

REFERENCES

- Okeahialam BN. The Burden of arrhythmias in Hypertension: An electrocardiographic Study. Nig. J. Cardiol Vol. 1 No. 1. September 2004; 53 – 56.
- Omotoso ABO, Opadijo OG, Araoye MA: Arrhythmias in Hypertensive Heart Disease : A study of 2,017 Nigerian patients. Nig.Qt.J.Hosp.Med .Vol 7(4). Oct-Dec 1997:310-313.
- Anisiuba BC, Ejim EC, Onwubere BJC et al. Atrial fibrillation cases seen at the University of Nigeria Teaching Hospital, Enugu. J. Coll. Med Vol. 10 (2) 2005: 102 – 106.

REFERENCES

- Cecilia G, Daniel Gblanchard. Atrial Fibrillation: Diagnosis and Treatment :Am Fam Physician. 2011;83(1):61-68.