EVALUATION AND MANAGEMENT OF PALPITATIONS

DR. ISEKO I. ISEKO

CONSULTANT PHYSICIAN/INTERVENTIONAL CARDIOLOGIST

CARDIOCARE MULTISPECIALTY HOSPITAL, ABUJA- NIGERIA.

8th Abuja Cardiovascular Symposium 2024

Limi Children's Hospital

cardiocare MULTISPECIALTY HOSPITAL
A Member of The Limi Hospitals

The Limi Hospitals
Since 1982

cardiocare MULTISPECIALTY HOSPITAL

The Limi Hospitals

Since 1982

The Limi Hospital Since 1982 | cardiocare MULTISPECIALTY HOSPITAL | Limi Children's Hospital

...Reversing Medical Tourism

World Class Healthcare at our doorstep.

Reconsider going abroad for heart, kidney, diabetes, neurology and other medical care.

cardiocare
MULTISPECIALTY HOSPITAL
Member of The Limi Hospitals

•Clinical & Interventional Cardiology •Endocrinology & Diabetology •Neurology •Nephrology and Dialysis
•Hepatology •Critical and Intensive Care •Internal Medicine

5 Giza Close, Area 11 Garki, Abuja-Nigeria.
0817 444 0888, 0817 444 5544, 0908 331 7777
frontdesk@cardiocare.ng


Why Travel
Abroad?
cardiocare
cardiocare
SPECIALTY HOSPITA
cardioca
MULTISPECIALTY HOSI
•Clinical & Interventional Cardiology •Endocrinology & Diabetology •Neurology •Nephrology and Dialysis •Hepatology •Critical and Intensive Care •Internal Medicine
5 Giza Close, Area 11 Garki, Abuja-Nigeria.
0817 444 0888, 0817 444 5544, 0908 331 7777
frontdesk@cardiocare.ng

cardiocare
MULTISPECIALTY HOSPITAL

Who are we?

- A **SUPPORT AND REFERENCE** hospital
- For Internal and Cardiovascular Medicine Specialties and Subspecialties
- Propagate Healthcare Delivery and Training
- Aim to **Reverse Medical Tourism**
- Flagship specialty Hospital of Limi Hospitals **originally founded 1982**
- Opened July 2016

OBJECTIVES

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

- Understand the definition
- Know the possible etiologies
- How to assess the patient
- How to manage palpitations

INTRODUCTION

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

- Common and nonspecific symptom
- Often benign in origin but also the most common symptom of a life-threatening arrhythmia
- This sensation can be either intermittent or sustained and either regular or irregular
  1. Palpitation does NOT mean heart disease
  2. The degree of palpitation does not equal the severity of the heart disease

Founded since 1982 to Support and Serve

Limi Children's Hospital

cardiocare MULTISPECIALTY HOSPITAL
A Member of The Limi Hospitals

The Limi Hospitals Since 1982 | Limi Children's Hospital

INTRODUCTION- DEFINITION

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

VARIOUS DEFINITIONS AND DESCRIPTIONS

1. Rapid pulsations
2. Abnormally rapid or irregular beating of the heart
3. Perception of a skipped beat or rapid fluttering in the chest
4. Pounding sensation in the chest or neck
5. Uncomfortable awareness of one's own heartbeat or undue awareness of heart action

INTRODUCTION

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

- **16% of OPD visits**
  - Represents 5.8/1000 ER visits
  - Admission rate of 25%
- **3rd common complaint presenting to cardiologists**
  - After chest pain and shortness of breath, and hypertension
- **43% are cardiac in nature**
  - In a study of 190 people with chief complaint of palpitation

Weber BE, Kapoor WN. Evaluation and outcomes of patients with palpitations. Am J Med 1996;100(2):138–48.

PHYSIOLOGY

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

Palpitation is due to

1. Alteration in heart rate e.g: sinus tachycardia & bradycardia
2. Alteration in heart rhythm (+/- rate) Eg: Atrial fibrillation
3. Alteration of subjective assessment, eg: anxiety states
4. Augmentation of myocardial contraction Eg: anxiety states & drugs
    a. **Physiological Augmentation**: exercise, caffeine, tea, alcohol, aminophylline, ephedrine
    b. **Pathological Augmentation**: ventricular hypertrophy from hypertension, valve

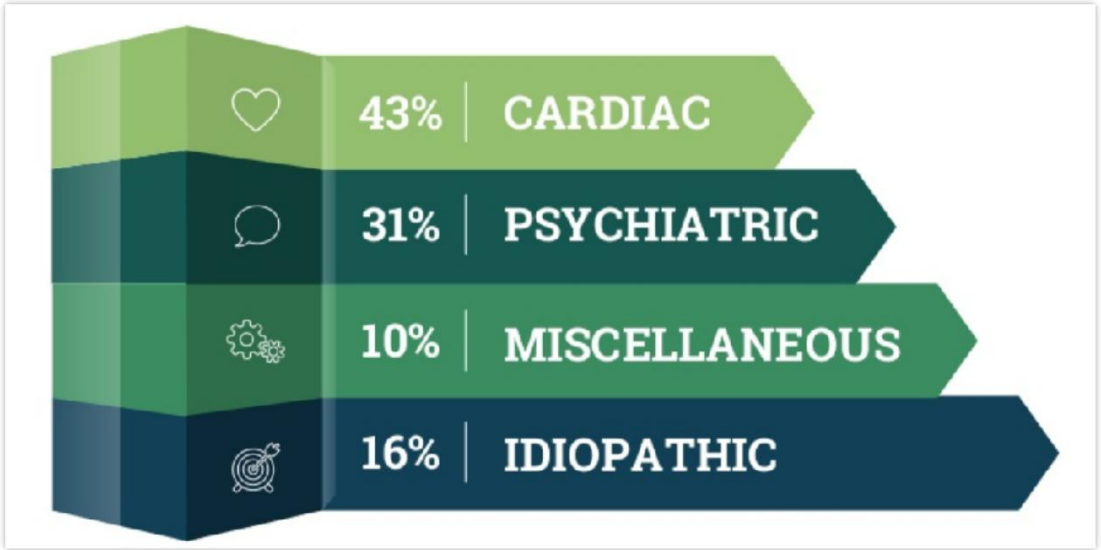
Introduction

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

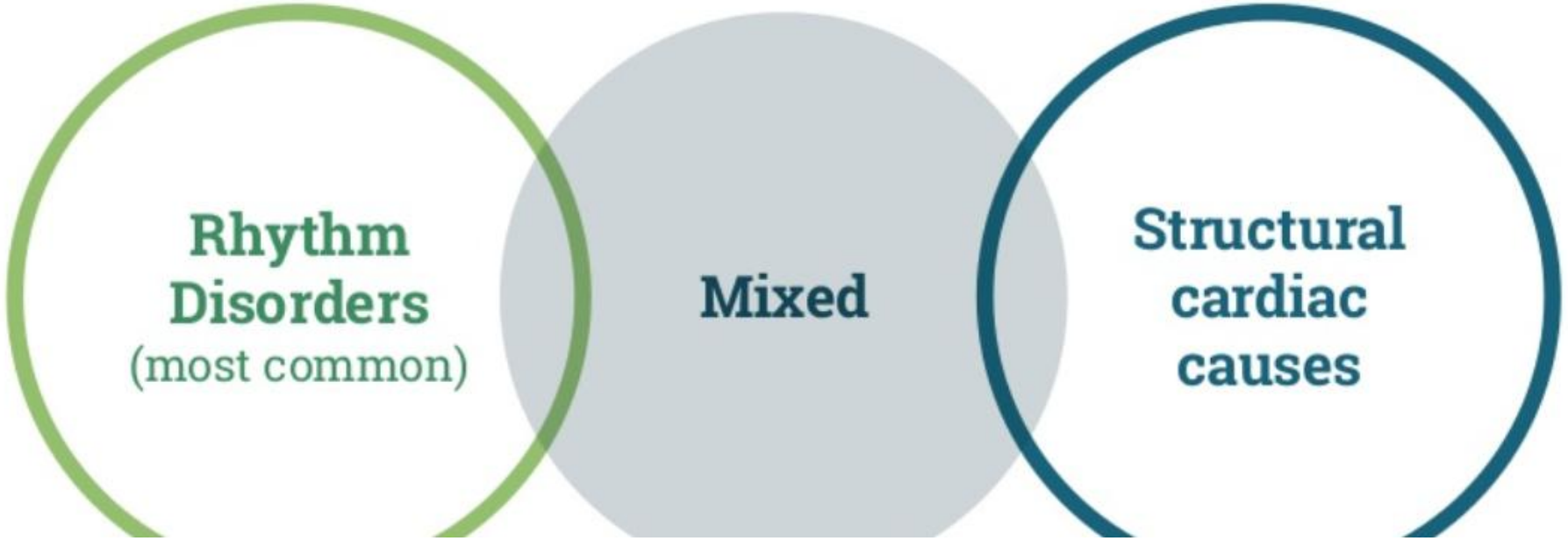
- Cardiac catheterization procedures in the dedicated catheterization laboratory (cathlab) are apparently at an infantile stage in Nigeria.
- The cardiac cathlab is invaluable in the practice of Cardiology as its use is the **gold standard** for diagnosis and treatment of many cardiovascular conditions.
- In Northern Nigeria, **two prior indigenous cathlab installations had been reported**, one public and one private which had become non-functional.
- However, since 2015 there has reportedly been **no functional indigenous cardiac cathlab in the entire Northern Nigeria.**

CAUSES OF PALPITATIONS

- Weber BE, Kapoor WN. Evaluation and outcomes of patients with palpitations. Am J Med 1996;100(2):138–48.



CARDIAC CAUSES (43 %)



CARDIAC CAUSES

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

- **Independent Predictors of Cardiac Etiology of Palpitation**

✓Male sex

✓Description of an irregular heartbeat

✓History of heart disease

✓Event duration >5 minutes

✓1 predictor : 26% 2 predictors: 48% 3 predictors: 71%

Introduction

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

- Cardiac catheterization procedures in the dedicated catheterization laboratory (cathlab) are apparently at an infantile stage in Nigeria.
- The cardiac cathlab is invaluable in the practice of Cardiology as its use is the **gold standard** for diagnosis and treatment of many cardiovascular conditions.
- In Northern Nigeria, **two prior indigenous cathlab installations had been reported**, one public and one private which had become non-functional.
- However, since 2015 there has reportedly been **no functional indigenous cardiac cathlab in the entire Northern Nigeria.**

CARDIAC CAUSES

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

RHYTHM DISORDERS

- Premature contractions (PAC, PVC)
- Atrial fibrillation
- Atrial flutter
- Supraventricular tachycardia (SVT)
- Ventricuar tachycardia (VT)
- Wolff-Parkinson-White syndrome (WPW)
- Ectopics (extrasystole)
- Sick sinus syndrome (SSS)
- Bradyrrhythmias (heart blocks)

NON-ARRHYTHMIC CARDIAC CAUSES

- Systemic hypertension
- Mitral valve prolapse
- LVOT obstruction (atrial stenosis, HOCM)
- Aortic insufficiency
- RV dysfunction (PE, ASD, VSD)
- Myocarditis, Pericarditis
- Atrial myxoma

Introduction

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

- Cardiac catheterization procedures in the dedicated catheterization laboratory (cathlab) are apparently at an infantile stage in Nigeria.
- The cardiac cathlab is invaluable in the practice of Cardiology as its use is the **gold standard** for diagnosis and treatment of many cardiovascular conditions.
- In Northern Nigeria, **two prior indigenous cathlab installations had been reported**, one public and one private which had become non-functional.
- However, since 2015 there has reportedly been **no functional indigenous cardiac cathlab in the entire Northern Nigeria.**

PSYCHIATRIC CAUSES

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

- Panic attacks
- Anxiety states
- Somatization
- Depression
- Patients with psychiatric causes for palpitations more commonly report:
  - a longer duration of sensation >15min,
  - younger & disabled
  - multiplicity of symptoms than do patients with other causes
  - with more visits to ER

MISCELLANEOUS CAUSES

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

- Hyperkinetic circulatory states :
  - Anaemia , Fever , Thyrotoxicosis , Hypoglycemia , Pheochromocytoma
- Drugs :
  - Aminophylline , Atropine , Thyroxine , Tricyclic antidepressants , Vasodilators , Digitalis
- Others :
  - Caffeine , Cocaine , Amphetamines , Tobacco , Ethanol

CAUSES(CONT.)

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

- Spontaneous skeletal muscle contractions of the chest wall
- Systemic mastocytosis
- Physiological : exertion , excitement , pregnancy
- Neurocirculatory asthenia or Da costa's syndrome or Effort syndrome or Soldier's heart
- Vaso-vagal attack

- Panic/Anxiety Disorder and Cardiac Arrythmias are not mutually exclusive and could co-exist- ALWAYS complete a full cardiac evaluation

EVALUATION

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

1. Principal goal in assessing patients with palpitations is to **determine if the symptom is caused by a life-threatening arrhythmia**

- Remember:

"All palpitations are not arrhythmias and many arrhythmias do not palpitate"

EVALUATION cont'd

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

2. Reduce possible risks other than the direct effects of the arrhythmia (eg, reduce stroke in patients with atrial fibrillation).
3. Does the patient require urgent hospitalization?
4. Is specialist consultation required, and if so, how urgently?

EVALUATION cont'd

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

APPROACH

Introduction

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

- Beyond service to the Nigerian populace, Cardiocare as an indigenous cathlab practice and Cardiovascular Hospital has provided avenues for:
  - Local research
  - Local training and exposure of medical professionals
  - Reversing of medical tourism (>$2billion dollars annually)
  - Improvement of related Healthcare economics- staffing & employment, development of the healthcare value chain

HISTORY

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

- Character
- Mode of onset
- Mode of termination
- Precipitation
- Associated symptoms
- Relief with vagal maneuver
- Family History

HISTORY (1)

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

- Age of onset
- Is it true palpitation or some other symptom simulating it?
  - Chest discomfort or dyspnea can be confused for palpitation
- Physiologic
  - e.g. after running, sexual activity, etc
- More when alone and quiet with thoughts?
- Does is interrupt activities, wake from sleep?
- Any associated symptoms?

HISTORY (2)

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

- Is it paroxysmal or persistent?
- If paroxysmal, what is mode of onset and offset?

✓Abrupt onset +/- abrupt termination – usually an SVT, VT, or sick sinus syn.

✓Gradual onset +/- gradual termination – usually other benign causes, sinus tachycadia

- Any relief with vagal maneuvers? – usually an SVT
- Does it worsen at night? – usually ectopic beats

Who is Cardiocare Multispecialty Hospital?

Northern Nigeria's **pioneer standalone Institution** wholly dedicated to comprehensive **Cardiovascular and Internal Medicine**.

Received Multiple **Awards for Excellence in Service.**

We are a **Support Hospital** for your practice in Nigeria through our **specialized services, training, and research in collaboration with you**

HISTORY (3)

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

CHARACTER

- Flip-flopping" (start & stop), missing a beat, thump in the heart – premature contractions i.e. PVC
- Rapid regular "racing" or "fluttering" in the chest – sinus tachycardia, SVT, VT
- Rapid irregular "fluttering" or "jumping about" – sustained VT , SVT – regular AVNRT, irregular- atrial fibrillation, tachycardia with variable block
- Pounding in the chest – hyperdynamic circulation

HISTORY (4)

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

FEATURE	SUGGESTS
HEART MISSES AND THUMPS	ECTOPIC BEATS
WORSE AT REST	ECTOPIC BEATS
VERY FAST REGULAR	SVT / VT
SUDDEN ONSET	SVT / VT
OFFSET WITH VAGAL MANOEUVRES	SVT
FAST AND IRREGULAR	AF and ATRIAL FLUTTER with varying block
FORCEFUL AND REGULAR – NOT FAST	AWARENESS OF SINUS RHYTHM (ANXIETY)
SEVERE DIZZINESS OR SYNCOPE	VT or BRADYARRHYTHMIAS
PRE-EXISTING HEART FAILURE	VT

HISTORY (5)

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

RADIATION

- Does the palpitation radiate into the neck?
  - AV nodal tachycardias
  - Simultaneous contraction of both atria and ventricles cause reflux of blood into superior vena cava)
  - PVCs, CHB also cause atrio-ventricular dissociation,
    - resulting in pounding sensations in the neck and
    - often a finding of “cannon” A waves in JVP that occur when right atria contracts against a closed tricuspid valve

Abuja Cardiovascular Symposia- Five (8) so far.

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

- Over 7**50 participants from over 30 states**
- Trained in **PRIMARY CARDIOVASCULAR SKILLS- mainly**
  - ECG interpretation,
  - Basic Management of Diabetes, Hypertension, Acute coronary syndromes, etc
  - Basic Life Support
- **10 CME points & Certificate**

HISTORY (6)

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

ASSOCIATED SYMPTOMS

- **Syncope** – low C.O in arrhythmias (VT) or bradycardia, hypoglycemia
- **Dyspnea (before palpitation)** – acute MI or PE, valvular dysfunction
- **Dyspnea (after palpitation)** – heart failure due to arrhythmias (i.e. VT)
- **Chest pain (before palpitaion)** – acute MI or PE
- **Chest pain (after palpitaion)** – angina due to palpitation (i.e AS,

HISTORY (7)

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

ASSOCIATED SYMPTOMS

- **Polyuria** – atrial fib. / flutter, SVT (release of atrial natriuretic peptide)
- **Sweating** – acute MI, hypoglycemia, anxiety, thyrotoxicosis
- **Diarrhea** – hypokalemia, thyrotoxicosis
- **Melena, heavy menstrual bleeding** – anemia
- **Heat intolerance, weight loss, increased appetite** – thyrotoxicosis

PAST HISTORY

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

- **Any known heart disease?** - IHD, RHD, valvular disorders, cardiomyopathy, heart failure
- **Any other known conditions?** - Pregnancy, fever, anemia, hyperthyroidism, asthma
- **Any recent drug intake, caffeine and alcohol consumption**? - Sympathomimetics i.e beta agonists used by asthmatics
- **Family history of sudden cardiac death?** - Palpitations is a symptom of many common conditions

National Interventional Cardiology Symposium- One (1)

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

- 41 attendees from:
  - Lagos=3, Benin=1, Kano=3, Katsina=3, Sokoto=5
  - Enugu=3, Gombe= 5, Jos=5, Kebbi=4, FCT= 8

Hospital
MULTISPECIALTY HOSPITAL
A Member of The Limi Hospitals
The Limi Hospitals Since 1982
Limi Children's Hospital

EXAMINATION-VITALS

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

- **Bradycardia** – Vasovagal syncope, heart blocks
- **Tachycardia** – MAT, SVT, VT, AVNT, atrial flutter, anxiety, MI, PE
- **Hypotension** – Vasovagal syncope, SVT, VT
- **Bounding pulse** – SVT, anemia, dehydration, hypoglycemia
- **Irregular pulse** – atrial fibrillation, ectopic "skip beats" (PVC)
- **Pyrexia** – thyrotoxicosis, infections, rheumatic fever, PE.

EXAMINATION

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

- Pallor – Anemia
- Goitre, exopthalmos, fine tremors – Thyrotoxicosis
- Raised JVP – SVT, AVNT, PVC, atrial flutter, PE
- Murmurs – valvular disorders
- Other: S3 gallop (HF), S4 (LVH), loud P2 (PE), bibasal fine rales (HF), bipedal edema (HF), calf tenderness (PE)

INVESTIGATIONS

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

- 12 Lead Resting ECG –
- Ambulatory (Holter) ECG- 24-96hrs
- Blood sugar profile
- Serum electrolytes esp Ca, Mg, PO4
- CBC
- Screening Thyroid Function Tests

Our Experience

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

- A total of 1000 **procedures** were carried out on 847 patients over the last 5 years
- Male to female ratio of **4. 4:2**,
- Mean age of **59.0 (+/- 12.4)** years
- Of the patients,
  - 32 (10.6%) were partially financed through discounts, sponsorships, and donations from:
    - Cardiocare/Limi Hospitals
    - Nigerian Cardiovascular Education Foundation

Limi Children's Hospital

cardiocare MULTISPECIALTY HOSPITAL
A Member of The Limi Hospitals

The Limi Hospitals Since 1982 | Limi Children's Hospital

INVESTIGATIONS (2)

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

- Thyroid function tests -Thyrotoxicosis
- Cardiac biomarkers – Suspected MI
- D-dimer – suspected PE
- Echocardiography- structural heart disease
- Treadmill exercise testing for palpitations precipitated by exercise

INVESTIGATION- ECG

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

Sinus rhythm ECG markers of arrhythmia[1]	
Electrocardiographic sign	**Implication/consideration**
Pre-excitation/delta wave	WPW – AVRT
Left atrial enlargement, frequent PACs, sinus bradycardia	Atrial fibrillation
Left ventricular hypertrophy	Atrial fibrillation, ventricular tachycardia
Frequent PVCs	Ventricular tachycardia
Q waves	Ischaemic heart disease – atrial fibrillation, ventricular tachycardia
Widespread T wave inversion across precordial leads, LVH, Q waves and ST-segment changes	Hypertrophic cardiomyopathy – risk of atrial fibrillation, ventricular tachycardia
Long or short QT interval, Brugada pattern, early repolarisation pattern	Genetic arrhythmia syndromes – risk of sudden cardiac death
Inverted T waves or Epsilon waves across right precordial leads (V1–V3)*	ARVC – risk of sudden cardiac death

INVESTIGATION- ECG

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

Table 2. Ambulatory ECG monitoring: Choice of investigation

Investigation	Investigation of choice: symptom frequency	Advantages	Disadvantages
12-lead ECG	-	Readily available Inexpensive	Rarely performed during arrhythmia
24–48 hour Holter monitor	Daily to every second day	Usually available Does not require activation: asymptomatic arrhythmia can be detected	Low yield other than for daily arrhythmias
Loop/event recorder (range of 1–4 weeks) **Loop/event recorder for one week**	Weekly–monthly	Increased yield and cost effectiveness (versus Holter)	Most units only record ECG if patient triggered; not useful for asymptomatic arrhythmia or syncope Generally only one-week recorders available Patient discomfort for longer-term monitoring
Implantable loop recorder	Months to year/s	High yield Long-term monitoring approximately three years Automatic bradycardia/ tachycardia storage plus patient-triggered episodes	Cost Not available in all centres Currently only approved for diagnosis of syncope or cryptogenic stroke
Handheld ECG	Months to year	High yield Permanently available to patient	Cost to patient Time for activation of device before arrhythmia termination

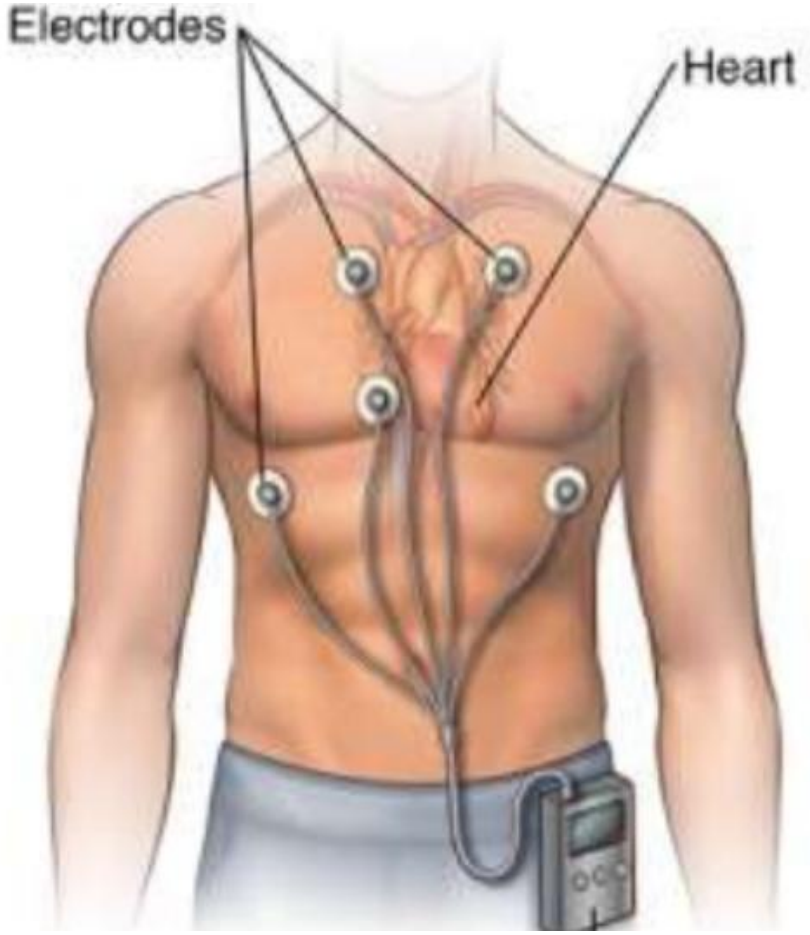
Limi Children's Hospital
cardiocare MULTISPECIALTY HOSPITAL A Member of The Limi Hospitals
The Limi Hospitals Since 1982 Limi Children's Hospital

Holter result

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

HOLTER MONITORING

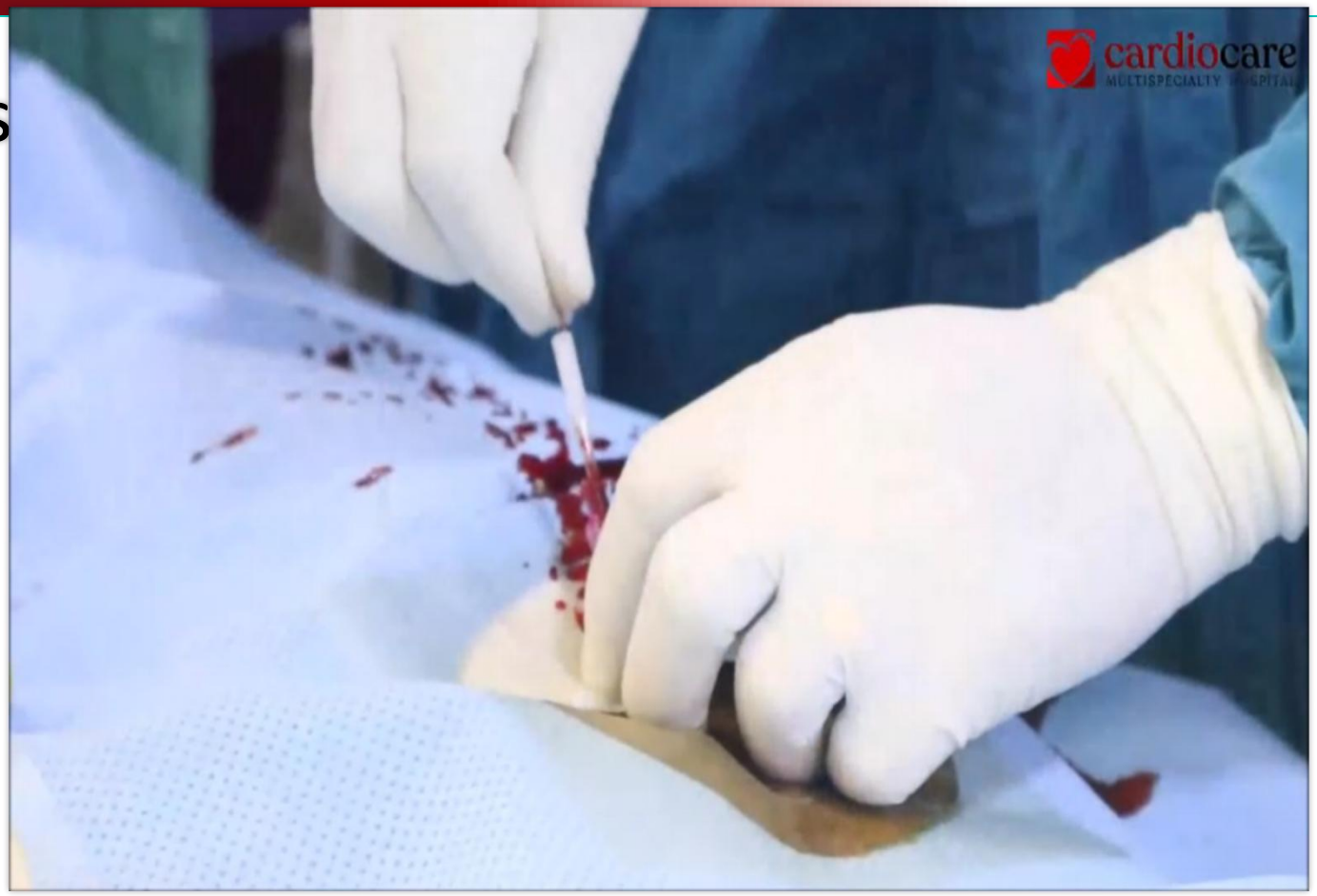
- Helpful, if palpitation is **paroxysmal** and occurs on a regular basis
- Electrodes with a monitoring device are attached to the patient for a **1 to 14 days**
- Patient is asked to continue and record his activities in a diary
- Rhythm strips are then analyzed



Our Experience- Coronary

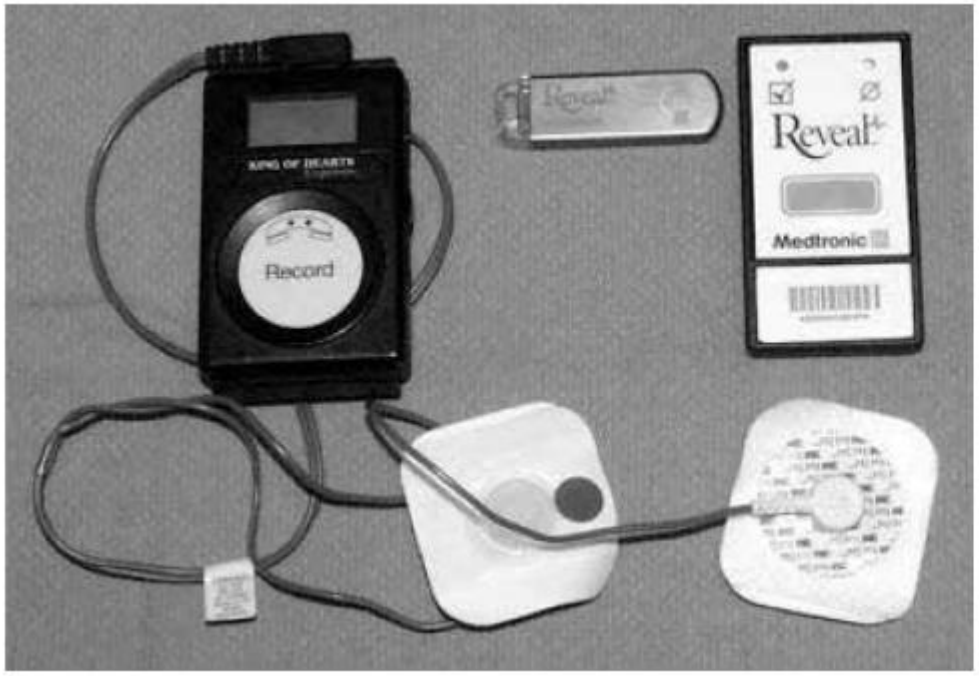
cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

- The predominant procedures were:
  - 233 (51.3%) diagnostic coronary angiographies
  - 90 (19.8%) percutaneous interventions



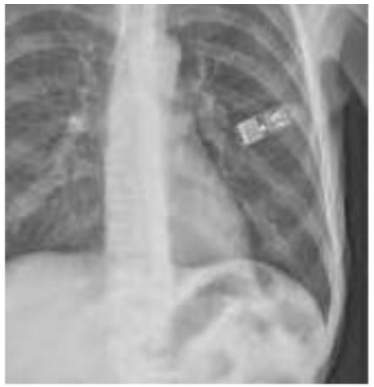
External and implantable loop recorder

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism



Implantable loop recorder

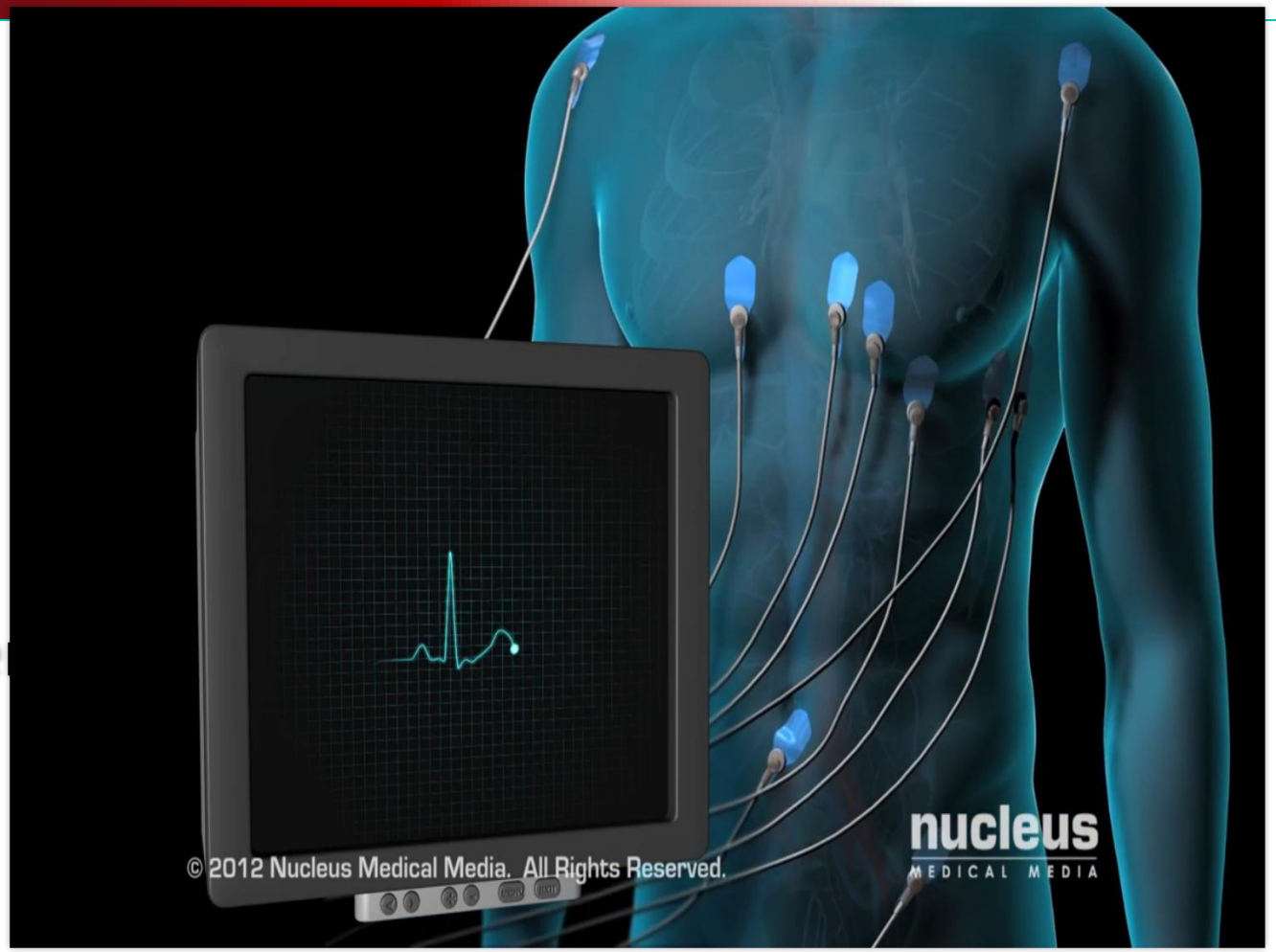
- ILR is a small device that is implanted under the chest skin.
- Helpful if palpitations are paroxysmal but not very regular to be captured by Holter.
- It records and stores heart activity as ECG and has battery life over several years.
- Patients are instructed to activate the recorder whenever palpitations are felt and visit the physician.



Our Experience- Cardiac Devices

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

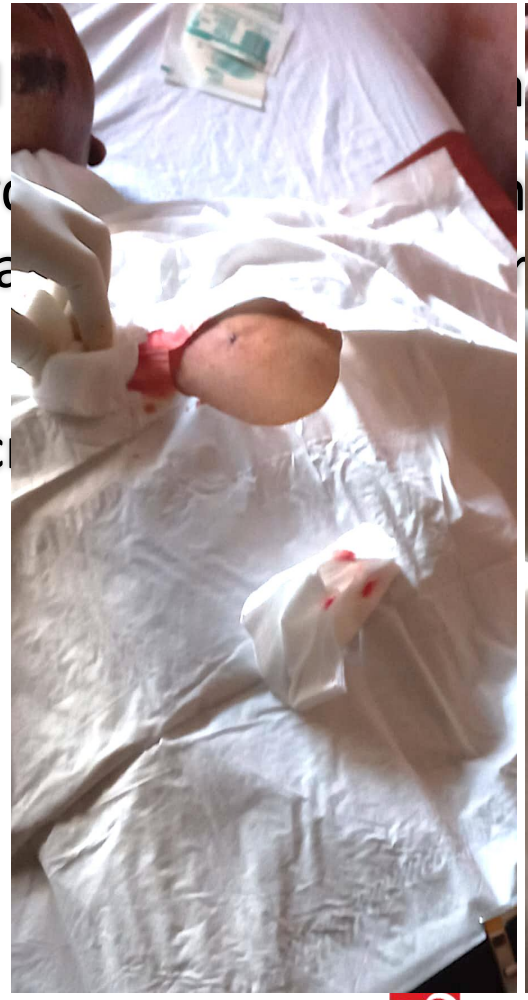
- 43 (9.5%) permanent cardiac devices consisting of:
  - 20 (4.4%) Pacemakers,
  - 14 (3.1%) Cardiac resynchronization devices, and
  - 9 (2.0%) implantable cardioverte defibrillators.

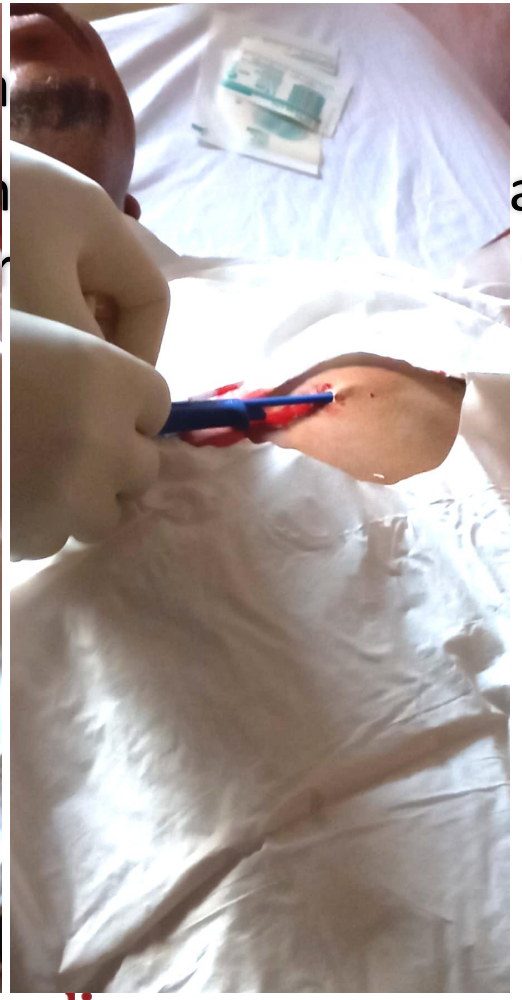


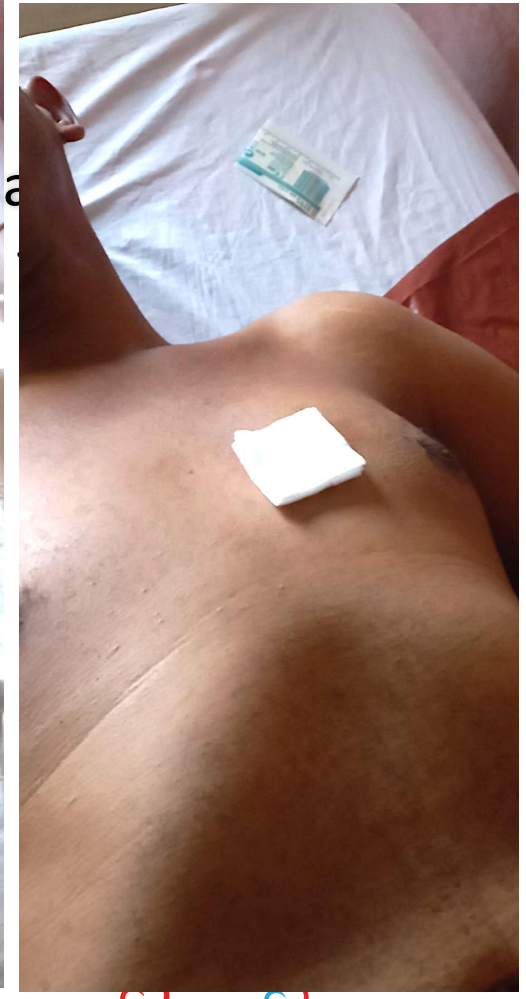
Loop Recorder Insertion

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

- The loop recorder was inserted
- The Medtronic LINQ loop recor
  the left fourth medial intercosta
  under local anesthesia.
- The wound was closed with Vic







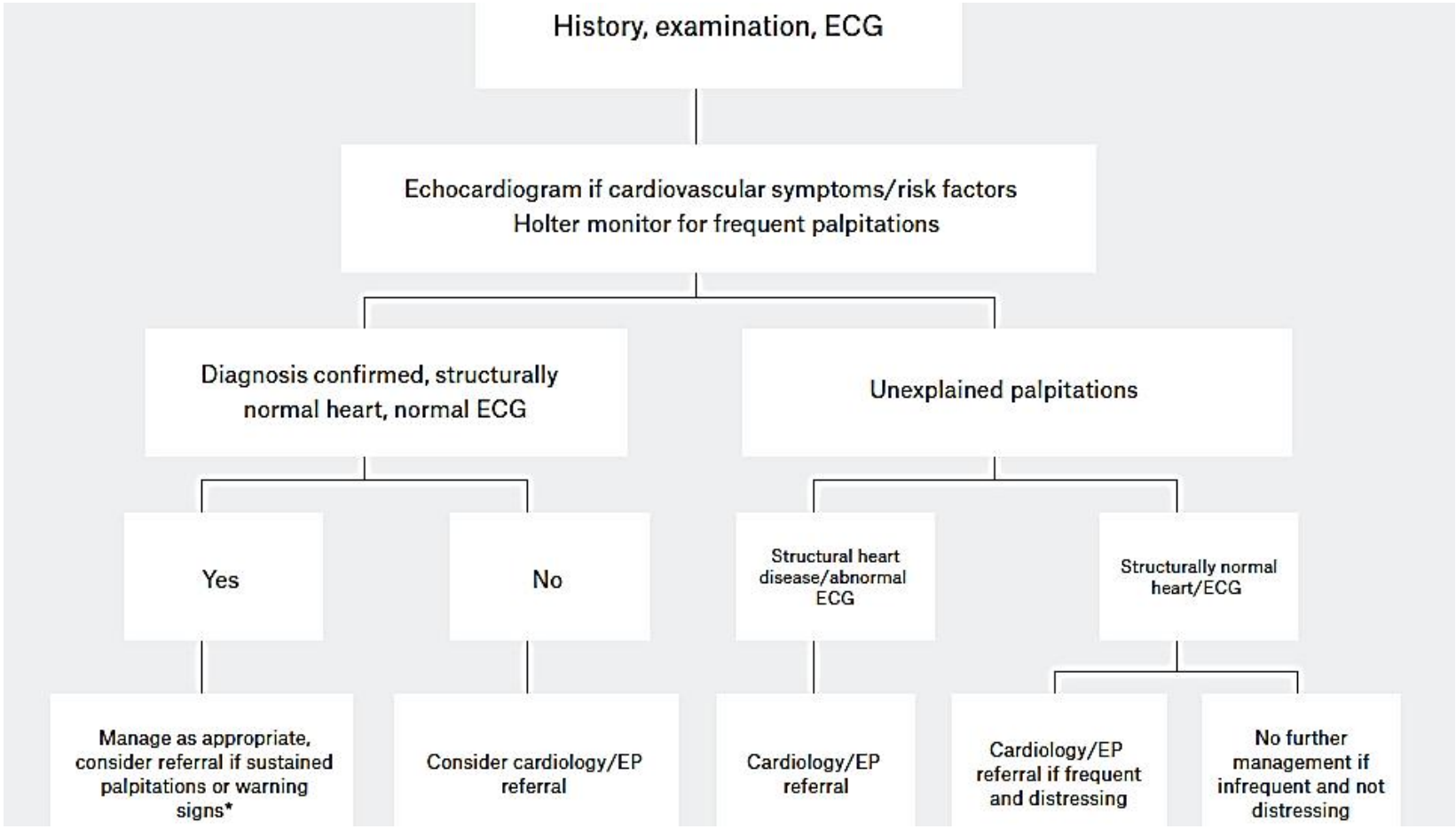
Loop Recorder Case

- The patient was discharged home same day with no complications noted
  - was advised to follow-up with his cardiologist in 1 week.
  - To report to the hospital if he noticed any symptoms for interrogation of recorder

- Follow up findings of the patient.
  - Mobitz 2, Ventricular ectopics, Complete heart block
  - Had Dual Chamber Pacemaker inserted

SUMMARY

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

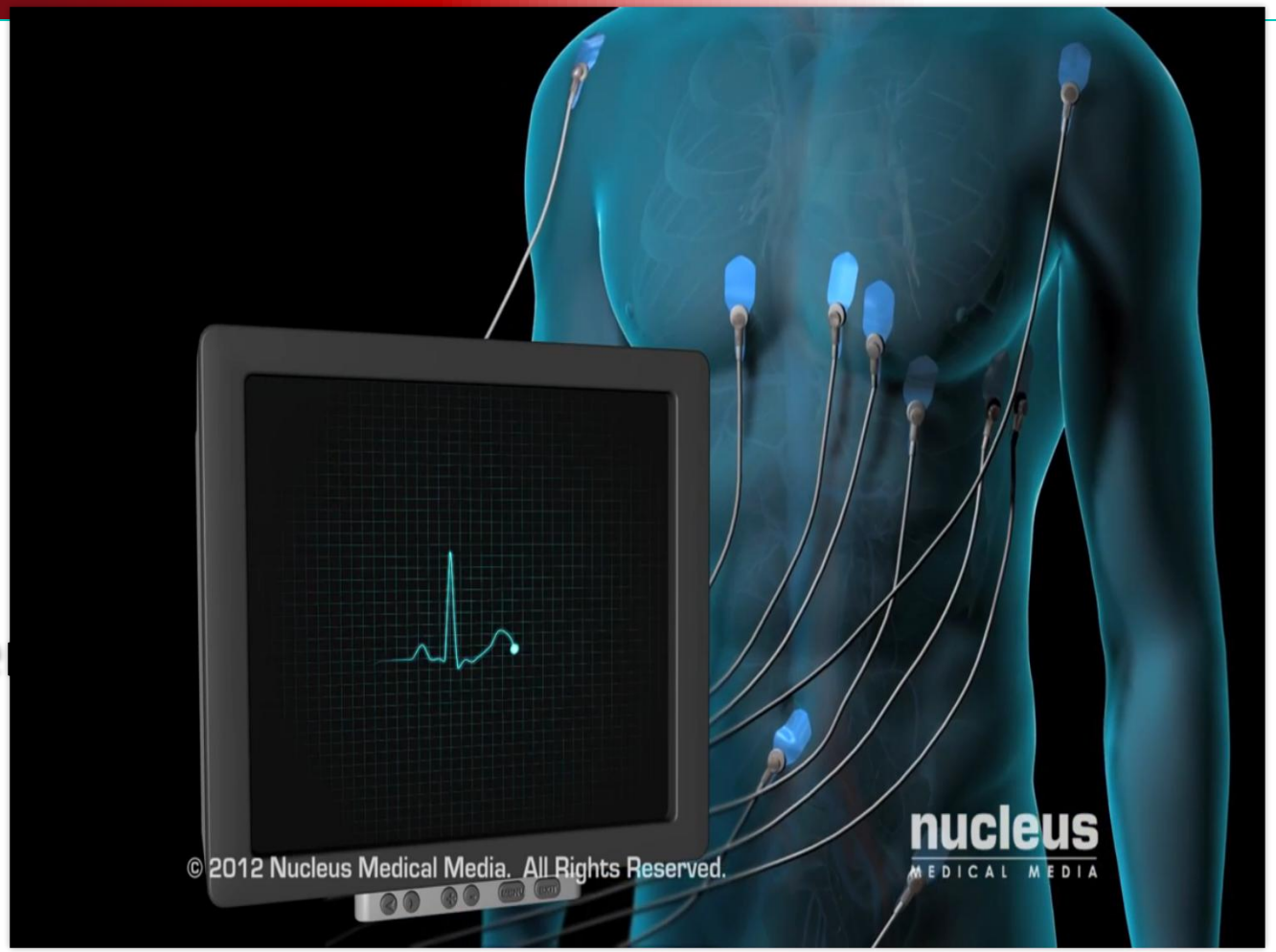


Limi Children's Hospital
cardiocare MULTISPECIALTY HOSPITAL A Member of The Limi Hospitals
The Limi Hospitals Since 1982 Limi Children's Hospital

Our Experience- Cardiac Devices

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

- 43 (9.5%) permanent cardiac devices consisting of:
  - 20 (4.4%) Pacemakers,
  - 14 (3.1%) Cardiac resynchronization devices, and
  - 9 (2.0%) implantable cardioverte defibrillators.



CARDIOCARE PALPITATION ALGORITHM

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

PRESENTING WITH PALPITATIONS?

1. Take History, Perform Physical Examination and Get a 12-lead ECG

2. Full Blood Count, Chemistry + Ca. Mg., TSH, & Screen for drugs where appropriate

3. Echocardiography and/or Holter ECG (if structural disease is suspected or abnormal ECG)

4a. Extracardiac Cause Diagnosed

4b. Structural Disease suspected or confirmed.
(Refer to Cardiocare Hospital or other Cardiologist)

5a. Holter Monitoring
If Daily Palpitations

5b. Event Monitoring for 2 weeks
If Palpitations are less than Daily

7a. Treat anxiety, thyroid issues, drug use, etc

6a. Palpitations during Normal Sinus Rhythm

6b. Premature Ventricular Contractions

Lown's Grade 1-2

Lown's Grade 3-5

6c. Non-Ventricular Arrhythmia

6d. Ventricular Arrhythmia

7b. Reassure EXCEPT structural disease is present that compels treatment

7c. Treat with Appropriate Medications
(Refer to Cardiocare Hospital/Cardiologist)

8. Consider Device therapy (Pacemaker, ICDs or CRTs) if criteria is reached and sudden death risk is

5, Giza Close (Near FCDA Sec) Area 11, Garki, Abuja-Nigeria. 0817 444 0888, 0817 444 5544, 0908 331 7777

Referral. Who?

- Patients with frequent or persistent arrhythmia
- Significant associated symptoms: Presyncope/syncope, light-headedness, breathlessness, chest pain.
- Family history of recurrent syncope or of sudden death
- Structural Heart Disease on Echocardiography
- Significant ECG or Echo abnormalities:
  - Short PR interval or delta wave, T wave abnormalities, Q waves, long QT interval, short QT interval, Brugada pattern, repolarization changes etc

MANAGEMENT

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

- Re-assurance- after excluding fatal causes
- Lifestyle modification
- Correction of co-morbid diseases
- Anxiolytics
- Beta-blockers and Anti-arrhythmic drugs
- Electrical cardioversion
- Psychiatric causes of palpitations may benefit from cognitive or pharmacotherapies

Indications for permanent pacing

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

- In bradycardia caused by reversible etiologies, permanent pacing is not warranted.
- The **indication for pacing is based on the severity of bradycardia** rather than its etiology.
- Symptomatic sinus bradycardia as a result of medical therapy is an indication for permanent pacing if there are no alternative treatment options.
- Typically from:
  1. Sinus Node Dysfunction
  2. AV Block

REFERENCES

- Kroenke K, Arrington ME, Mangelsdroff AD. The prevalence of symptoms in medical outpatients and the adequacy of therapy. Arch Intern Med 1990;150: 1685–9.
- Knudson MP. The natural history of palpitations in a family practice. J Fam Pract 1987;24:357–60.
- Zimetbaum P, Josephson ME. Evaluation of patients with palpitations. New Engl J Med 1998;338:1369–73.

cardiocare MULTISPECIALTY HOSPITAL

The Limi Hospital Since 1982

Limi Children's Hospital

How can you Partner and Refer?

5 Giza Close,
Area 11 Garki, Abuja-Nigeria.

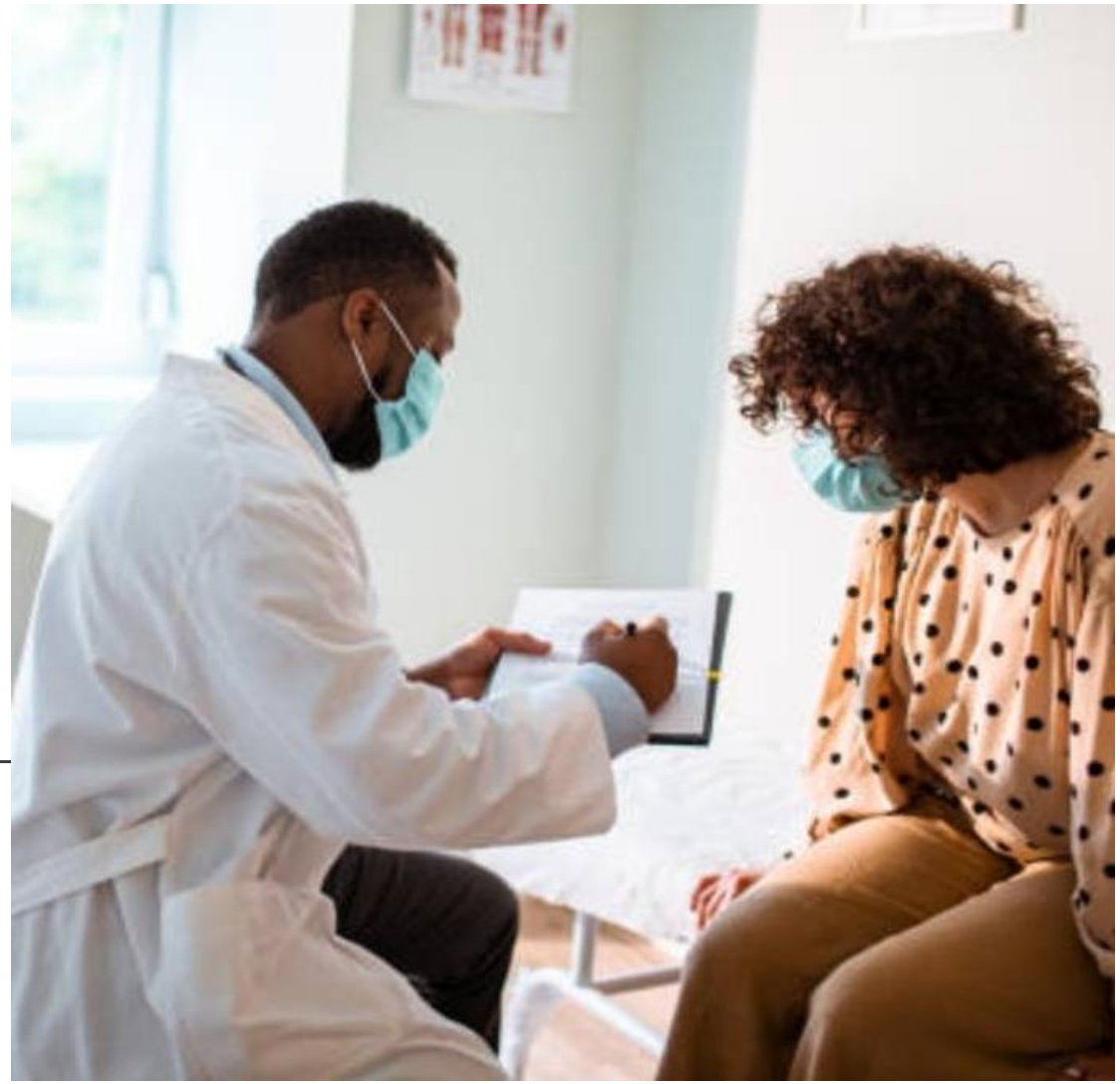
0817 444 0888,

0817 444 5544,

0908 331 7777

080 90 160 190

frontdesk@cardiocare.ng



WHY PARTNER WITH US FOR YOUR PATIENTS?

1. **Over 2000 successful interventional cardiology cases**
2. **Participatory Patient Management with referring Doctors**
3. **Detailed correspondences to referring doctors**
4. **Inclusive case discussions** (where necessary)
5. **Back referral** (where indicated)
6. **MOUs, Partnerships, and PPPs available**
7. **Priority in Annual Symposia & Monthly Training Webinars**

cardiocare
MULTISPECIALTY HOSPITAL
Member of The Limi Hospitals

How we often choose Pacemakers?

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

- Dual Chamber (Atrium & Vent)
  - Second degree or Third-degree AV block
  - Potential AV block now or in future
- Consider CRT-P if QRS is also prolonged and heart failure criteria for CRT
- Single Chamber Ventricular Pacemaker
  - Chronic AF when no AV may not be needed

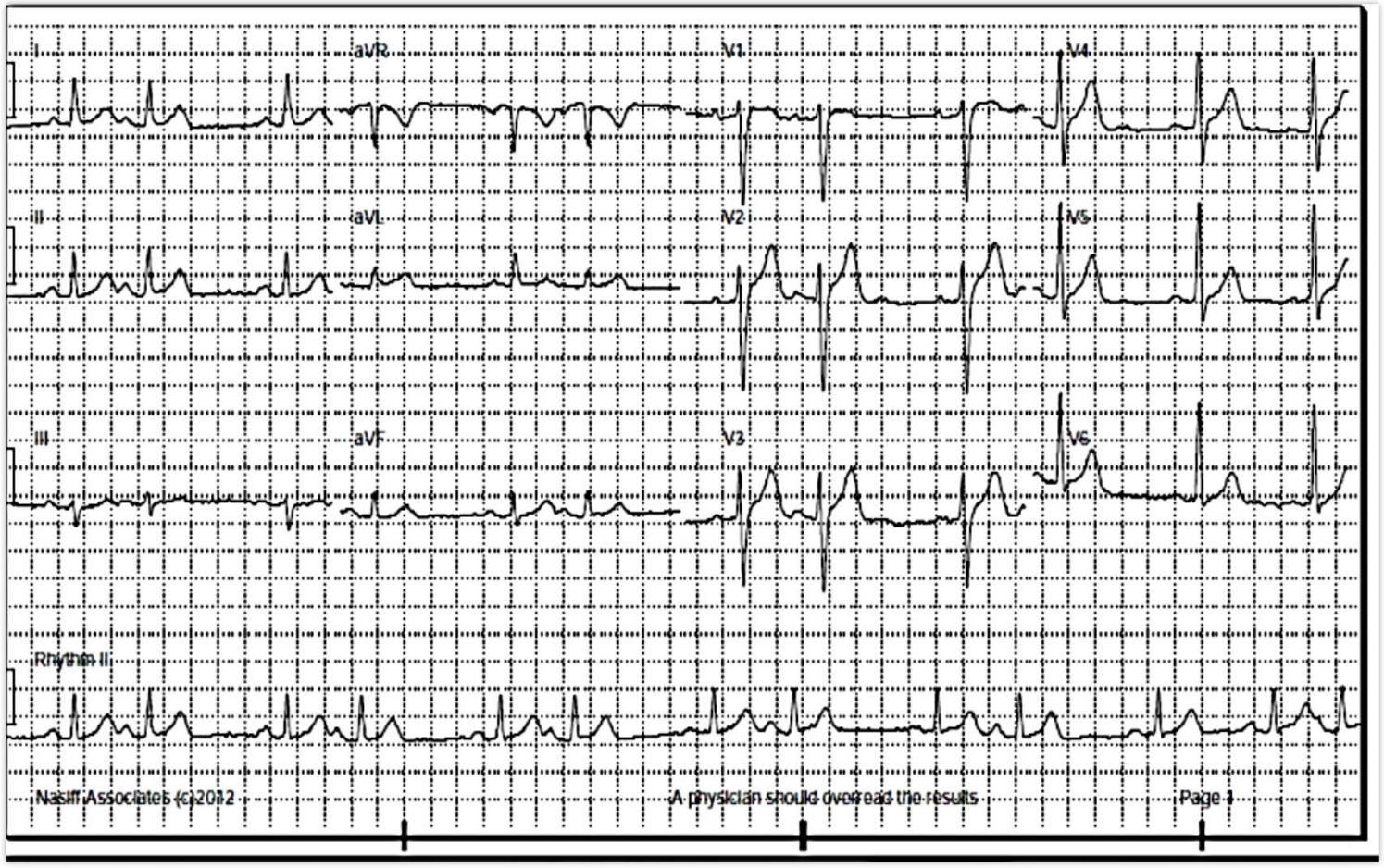
THANK YOU (19)

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

1. What is the most common cause of Palpitations?2
2. Which Arrythmias respond to Valsalva Maneuvers?2
3. List the 4 Principles of Evaluating Palpitations?4
4. All guests with palpitations should have Holter ECG? True or False2
5. List symptoms that may indicate more serious aetiology of palpitations4
6. What are the three major pathophysiologic mechanisms of arrythmias?3

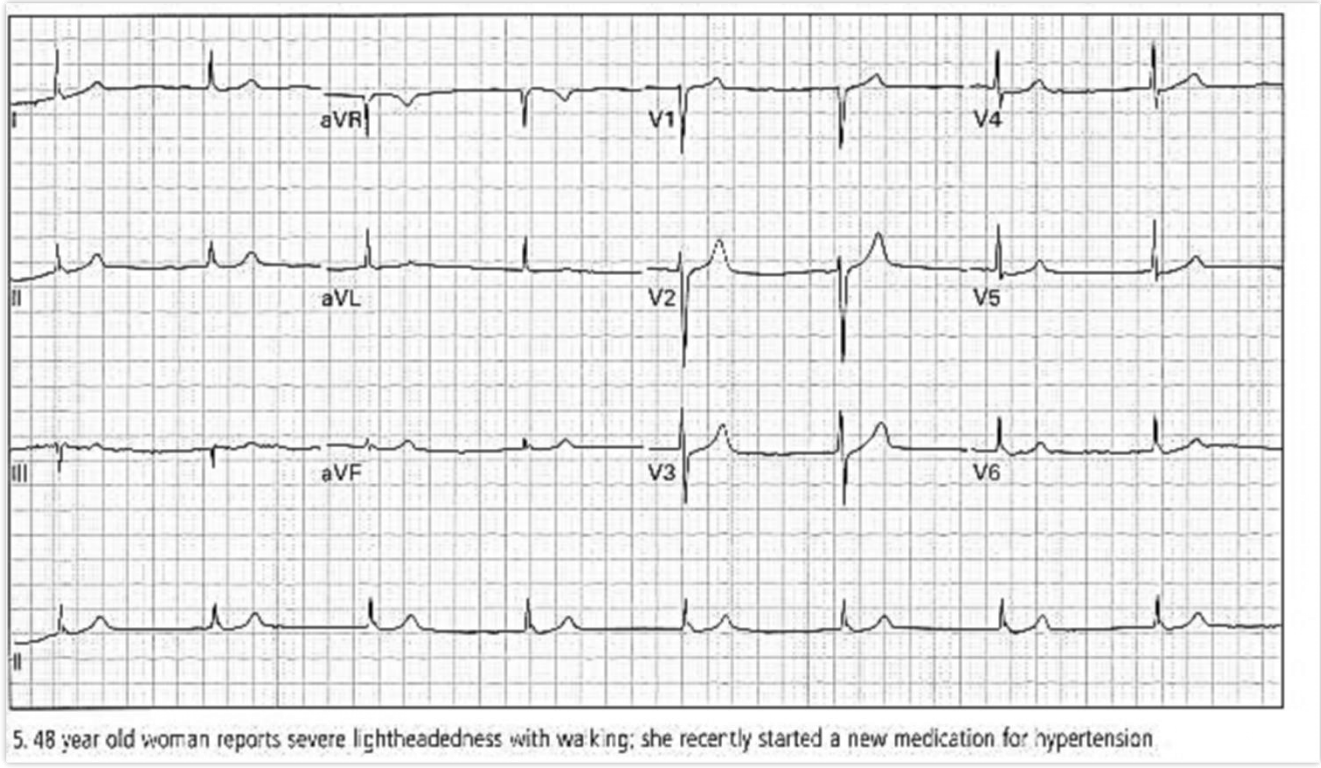
7. What ECG abnormality is causing this guest's palpitations?

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism



8. What ECG abnormality is causing this guest's palpitations?

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism



5. 48 year old woman reports severe lightheadedness with walking; she recently started a new medication for hypertension

Limi Children's Hospital

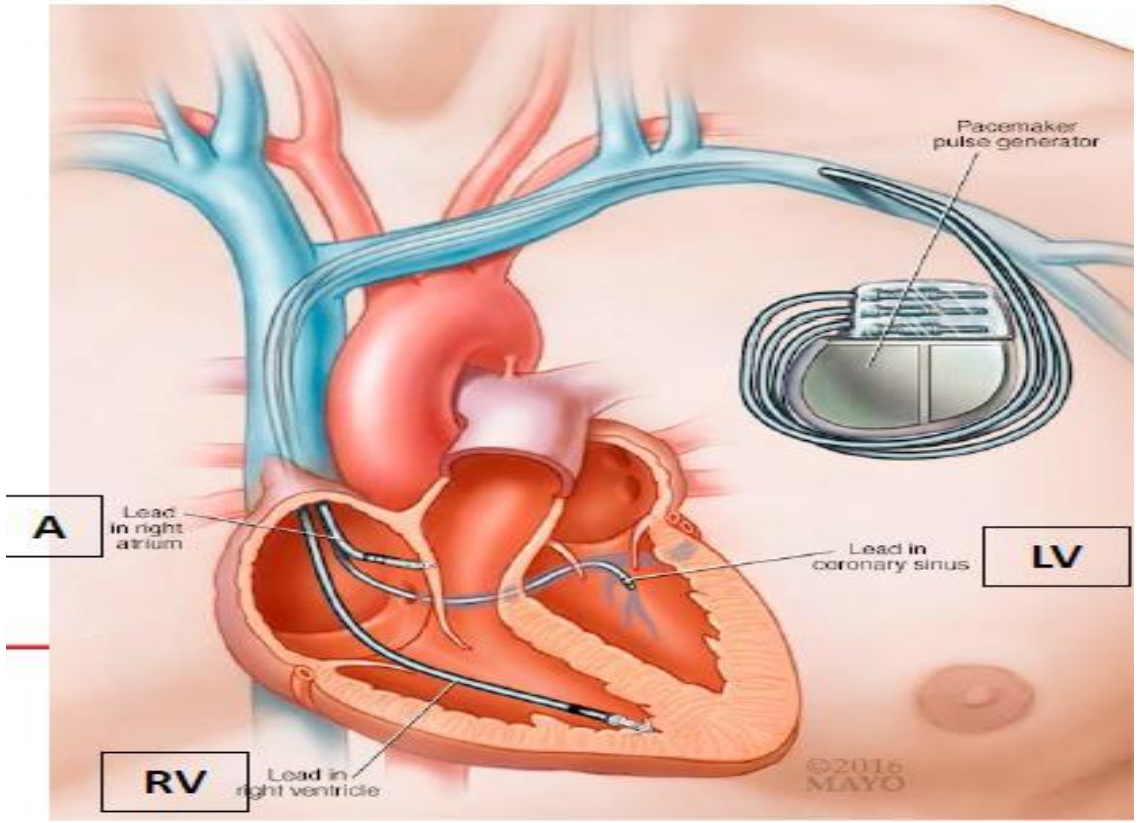
cardiocare MULTISPECIALTY HOSPITAL
A Member of The Limi Hospitals

The Limi Hospitals Since 1982
Limi Children's Hospital

Common Indications for Cardiac Resynchronization Therapy (CRT)

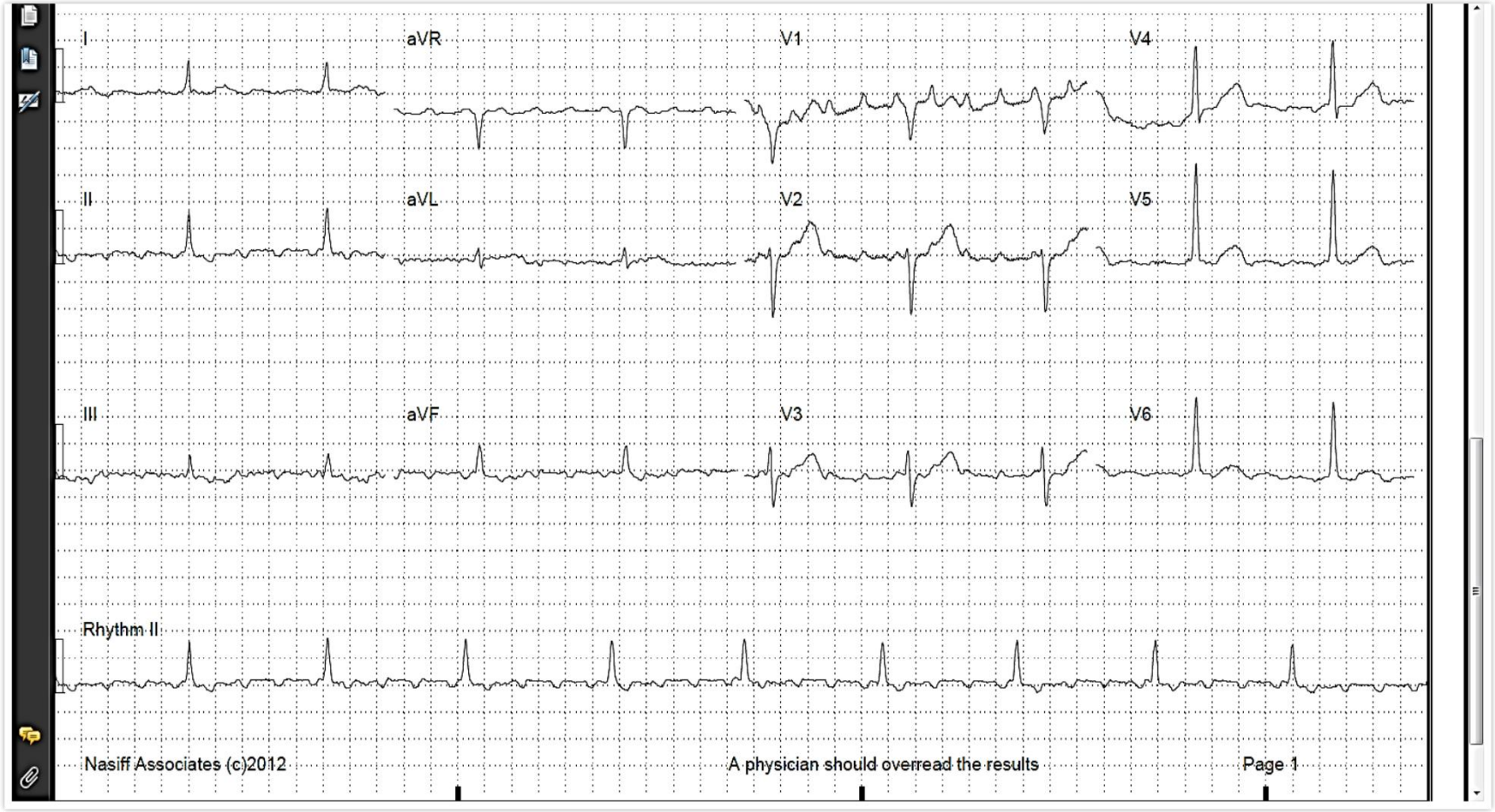
cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism

- After Optimal Medical Therapy for at least 3/12, symptomatic HF (NYHA ≥2) and <EF <35%
  - LBBB and a QRS duration ≥150 ms (1A), and a class I indication (LoE B)
  - LBBB and a QRS width of 130–149 ms (1B)
  - QRS complex ≥150 ms and non-LBBB (class 2a)
  - QRS complex 130-149ms and non-LBBB (class 2b)



9. What ECG abnormality is causing this guest's palpitations?

cardiocare MULTISPECIALTY HOSPITAL
Reversing Medical Tourism



Limi Children's Hospital

cardiocare MULTISPECIALTY HOSPITAL
A Member of The Limi Hospitals

The Limi Hospitals Since 1982
Limi Children's Hospital