

ECOCARDIOGRAFIA 2015
XVII Congresso Nazionale SIEC
Hotel Royal Continental
Napoli, 16-18 Aprile 2015



Le peculiarità della medicina cardiovascolare in Africa

Andrea Barbieri

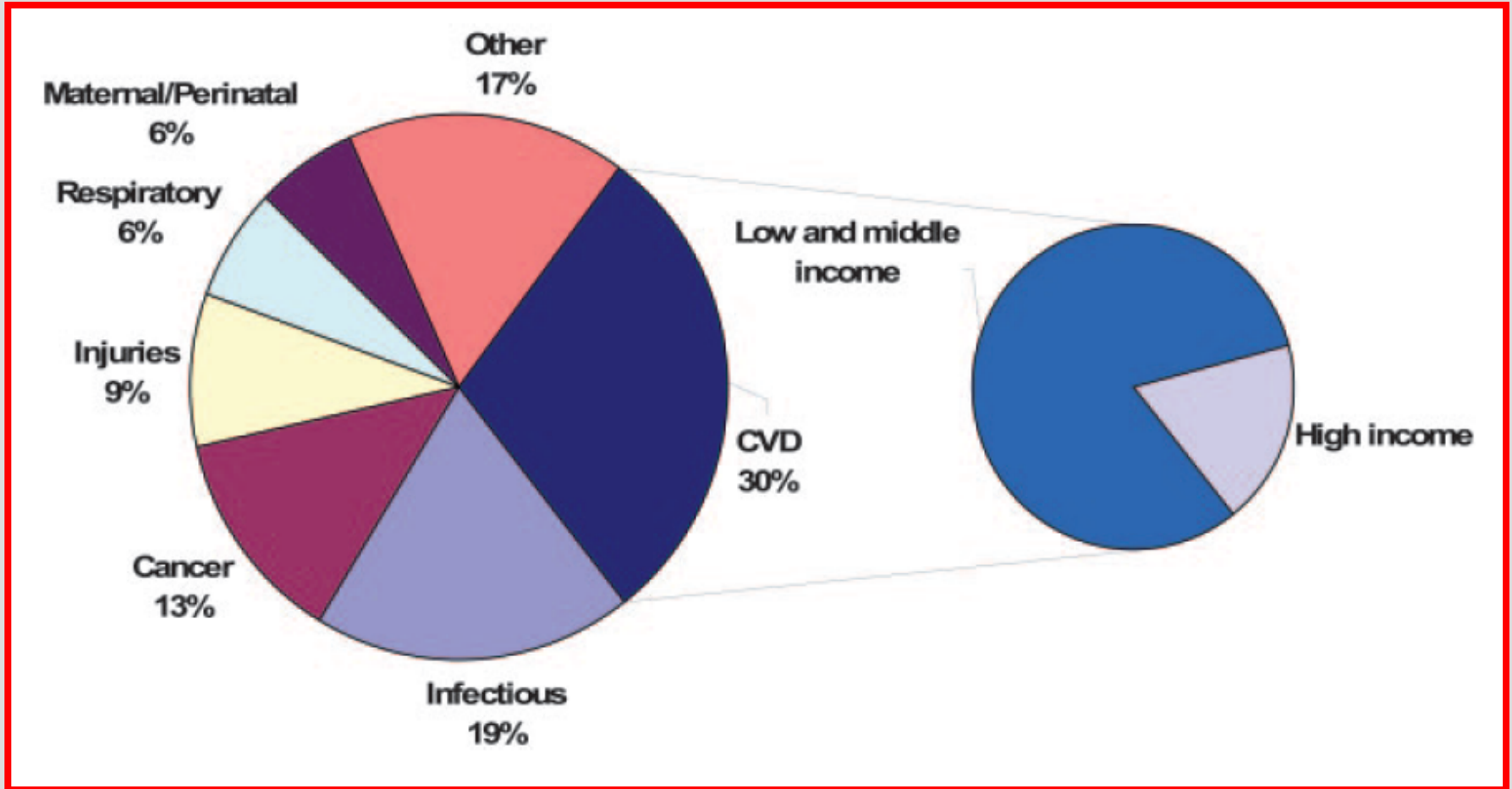
U.O. Cardiologia, Policlinico di Modena



THE **SALAM CENTRE**
FOR **CARDIAC SURGERY**



Cardiovascular disease in the developing world



from around the world

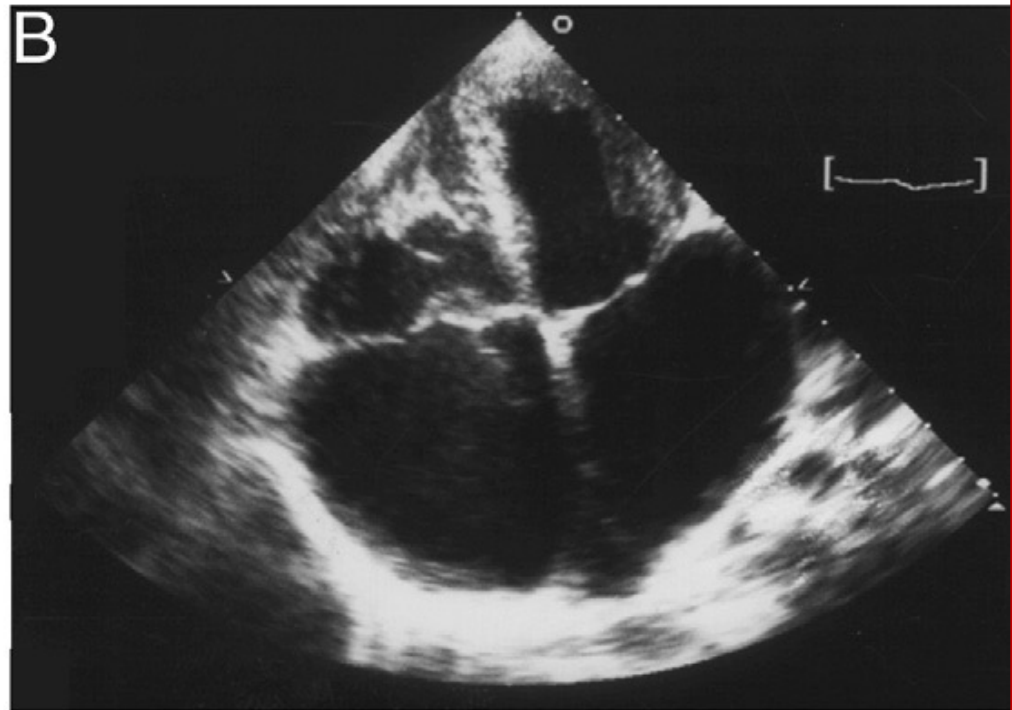
- **focus on Africa**

Neglected Cardiovascular Diseases in Africa

Challenges and Opportunities

*Ana Olga H. Mocumbi, MD, PHD, Maria Beatriz Ferreira MD, PHD
Instituto do Coração, Maputo, Mozambique*

Endomyocardial fibrosis

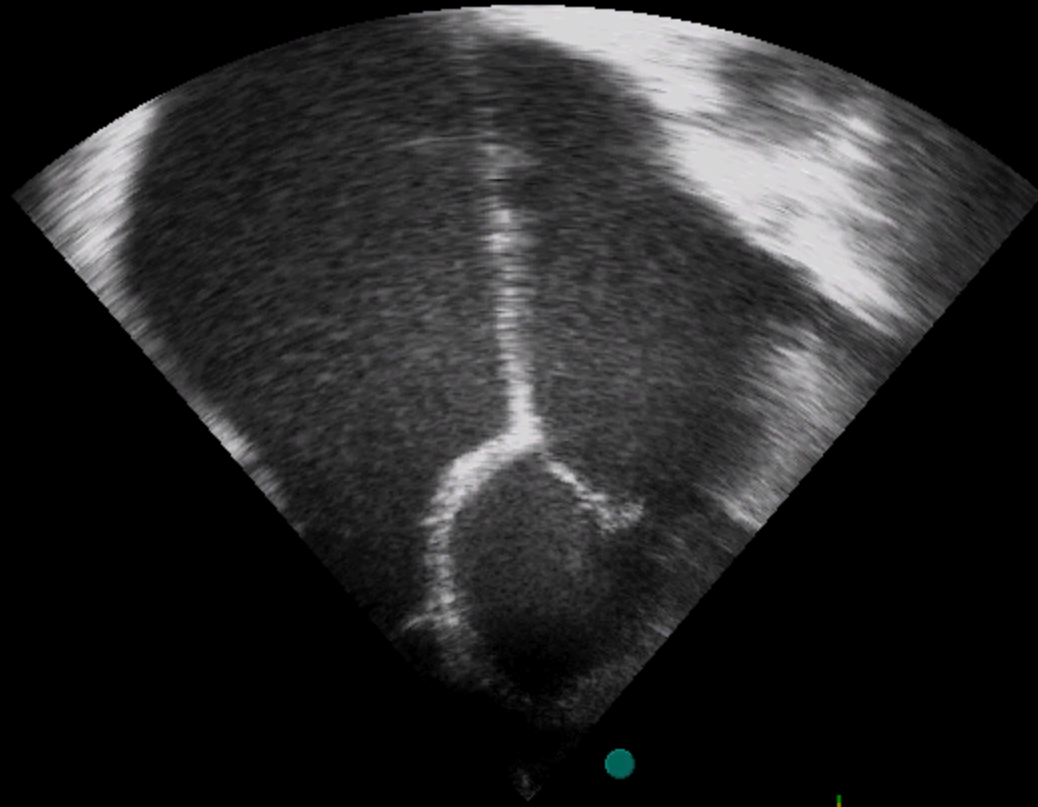


Salam Centre for Cardiac Surgery

ID:34222

*Cardiac
3S

4:08:19 pm
09-Oct-11



2D 16 cm
35 f/s
f: 1.7 MHz H
DR: 65 dB
R: 4.0 G: 68

P:0dB
TIs:0.9
MI:1.2

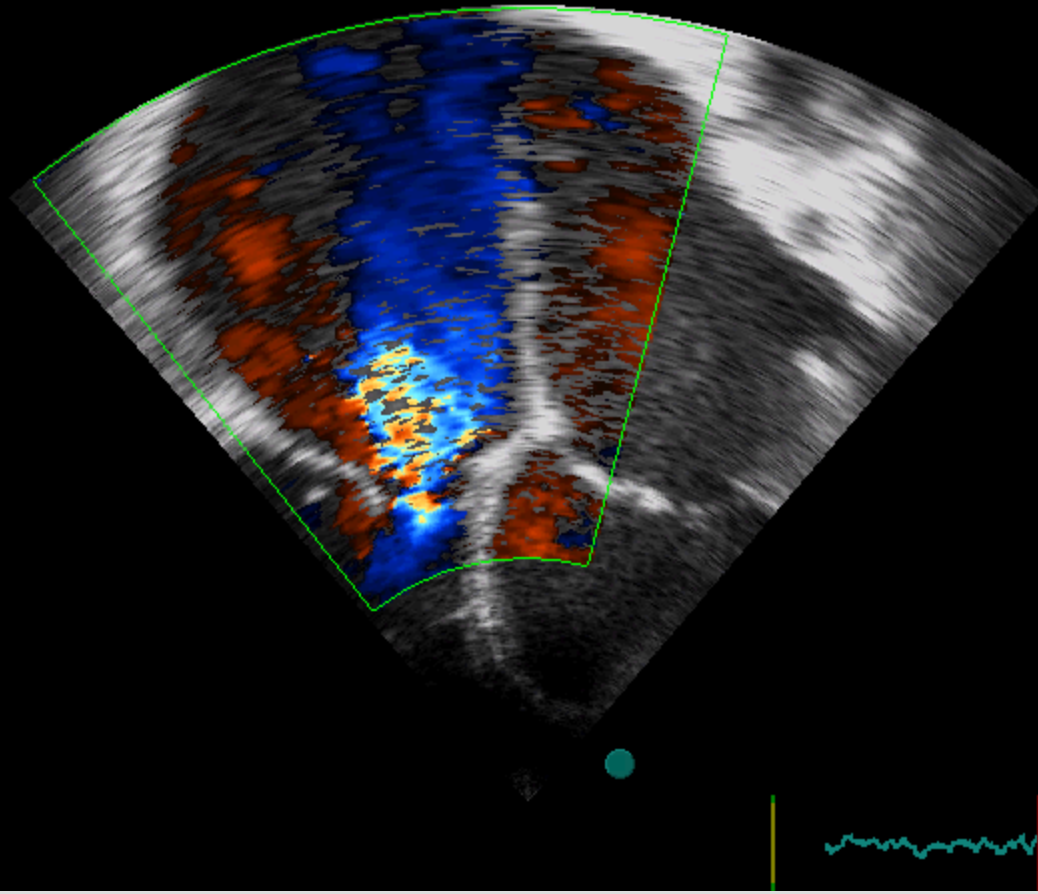


Salam Centre for Cardiac Surgery

ID:34222

*Cardiac
3S

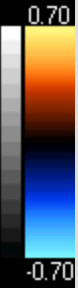
4:08:30 pm
09-Oct-11

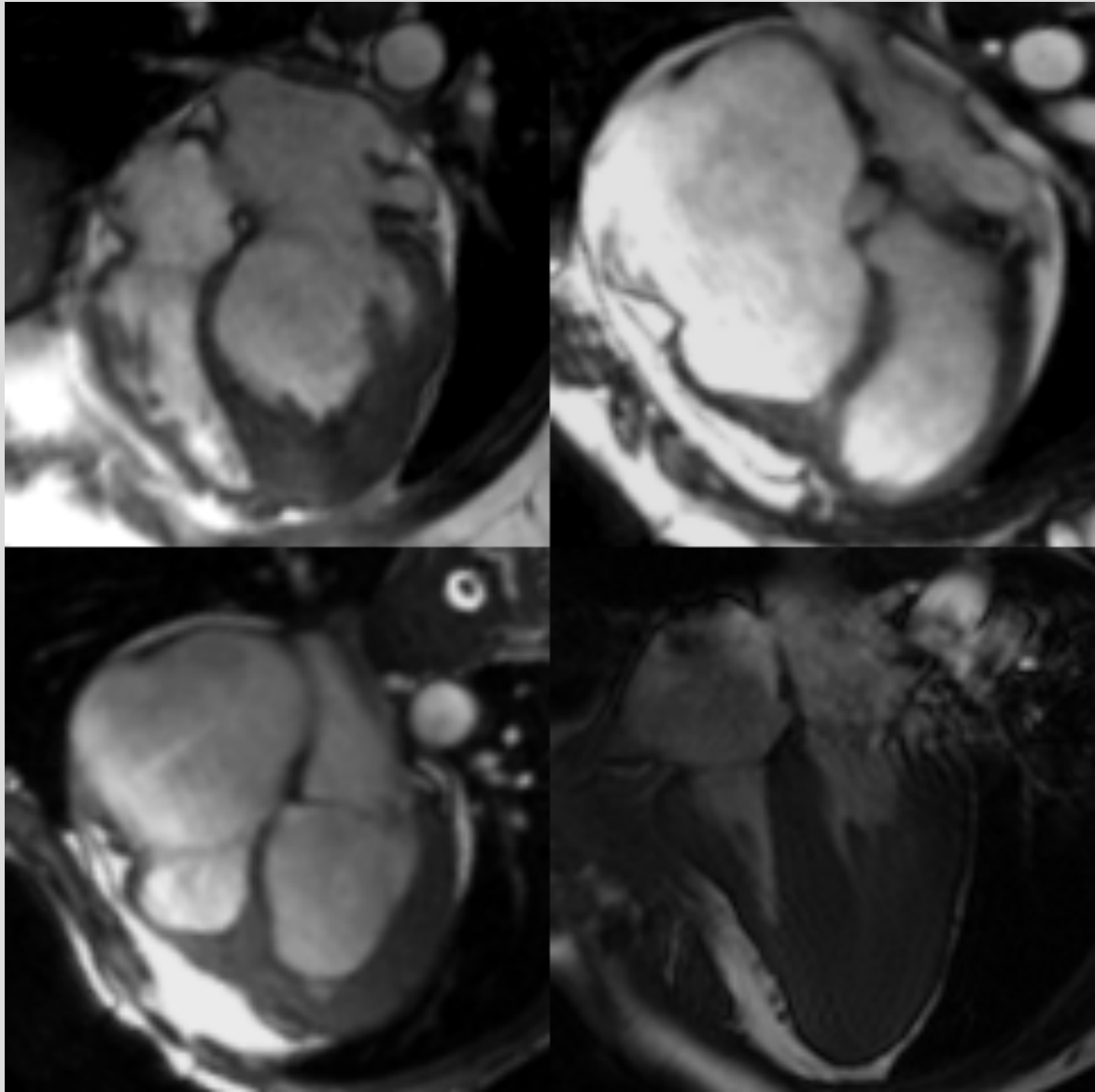


2D 16 cm
10 f/s
f: 1.7 MHz H
DR: 65 dB
R: 4.0 G: 68

CFM G: 58
f: 2.2 MHz
PRF:4000Hz
LVR:2.9cm/s

P:0dB
TIs:1.4
MI:1.1





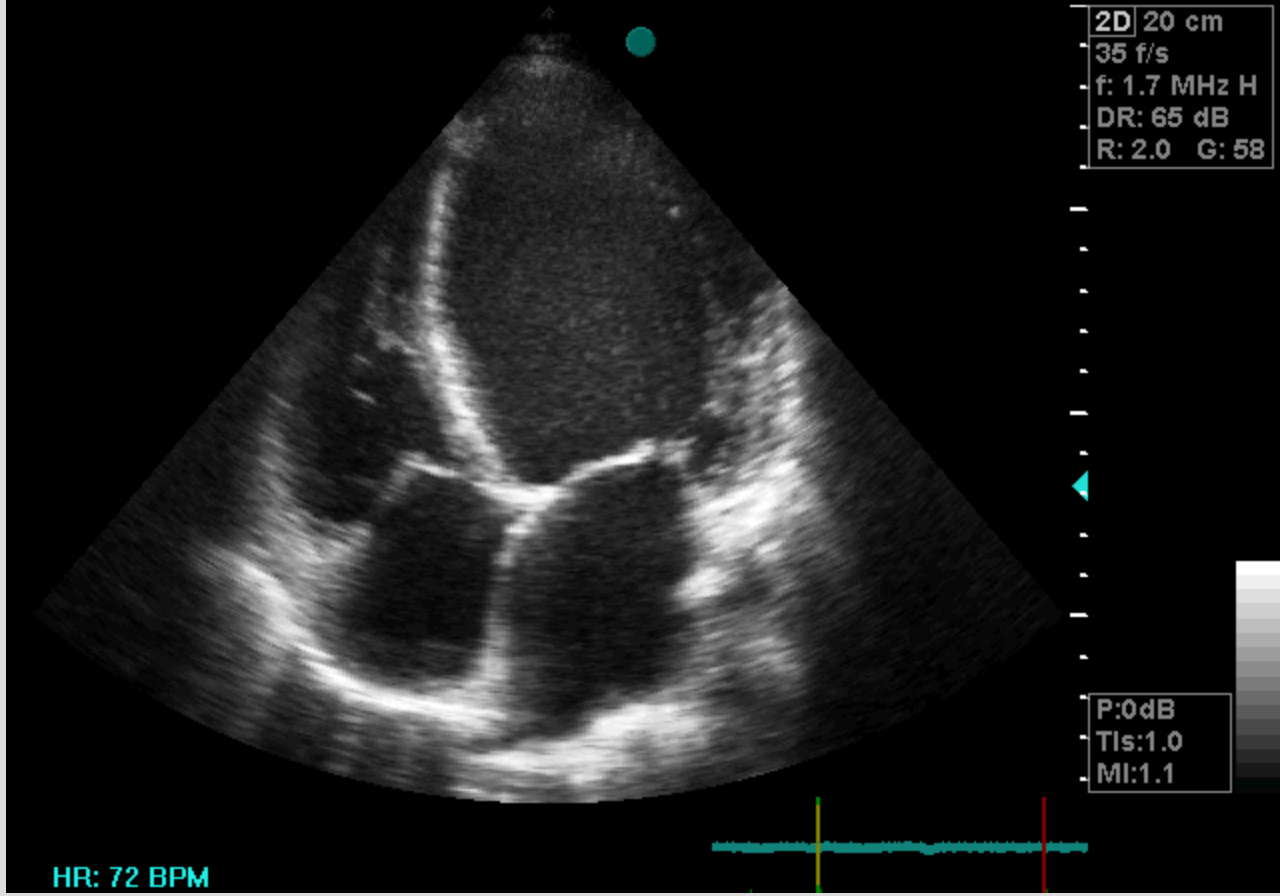
Peripartum cardiomyopathy

Salam Centre for Cardiac Surgery

ID:32358

CardiacV
3S

11:52:55 am
19-Oct-11

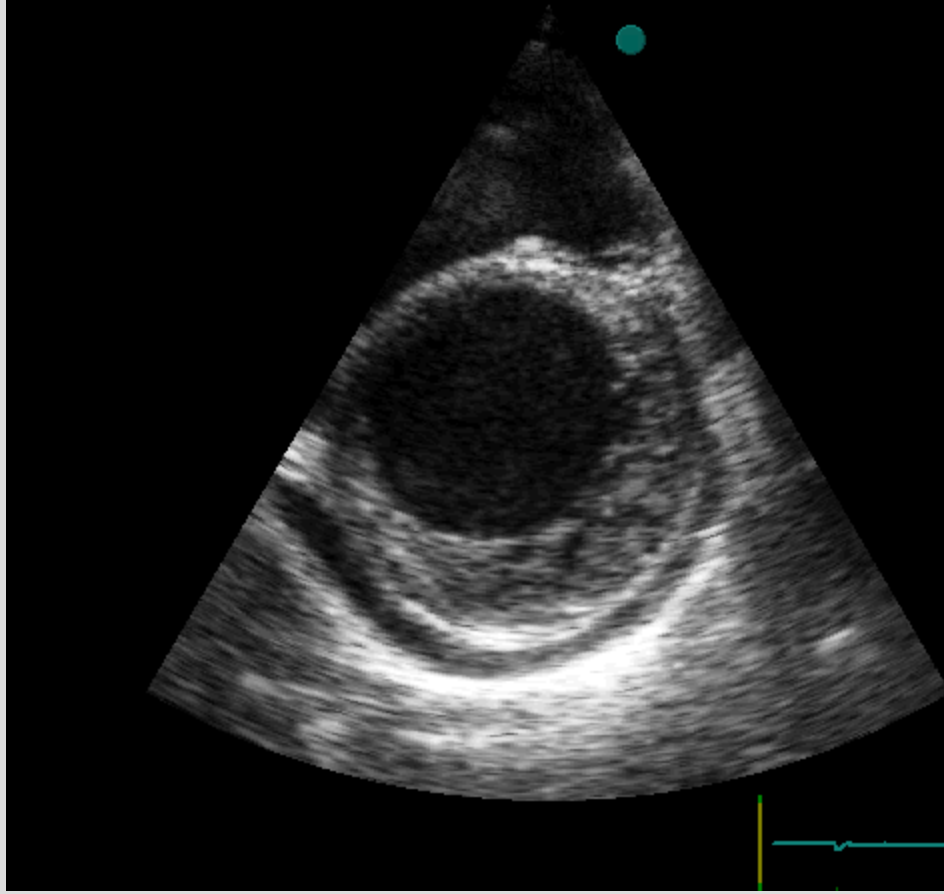


Salam Centre for Cardiac Surgery

ID:34794

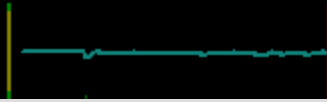
*Default
3S

10:55:20 am
18-Sep-11



2D 16 cm
47 f/s
f: 1.7 MHz H
DR: 65 dB
R: 2.0 G: 51

P:0dB
TIs:0.9
MI:1.2

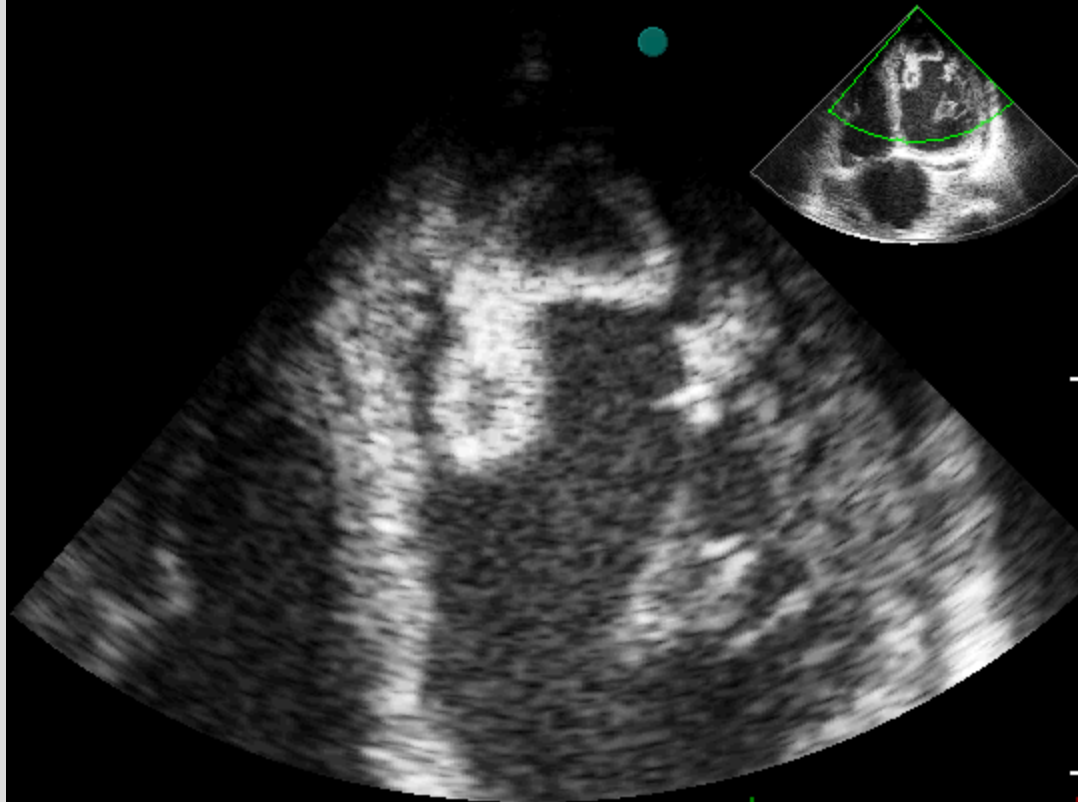


Salam Centre for Cardiac Surgery

ID:34794

*Default
3S

10:58:23 am
18-Sep-11



2D 18 cm
31 f/s
f: 1.7 MHz H
DR: 65 dB
R: 2.0 G: 51

P:0dB
TIs:1.0
MI:1.1



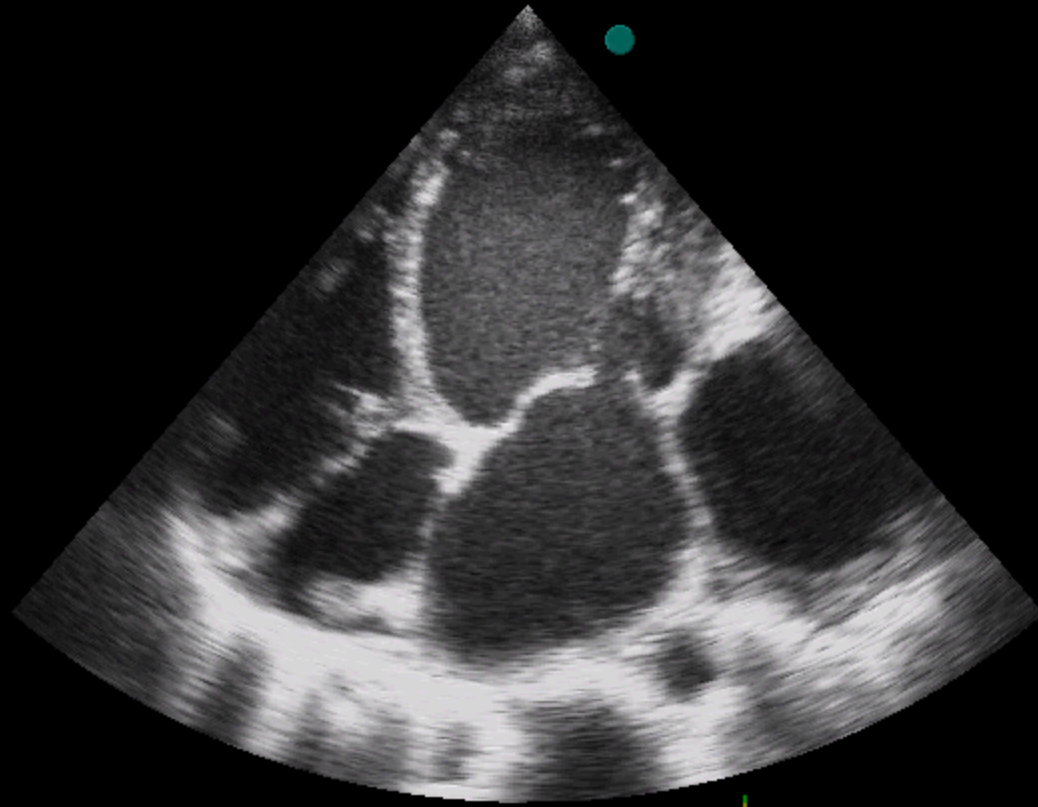
Subvalvular LV aneurysms

Salam Centre for Cardiac Surgery

ID:23922

*Cardiac
3S

12:25:48
23-Nov-10

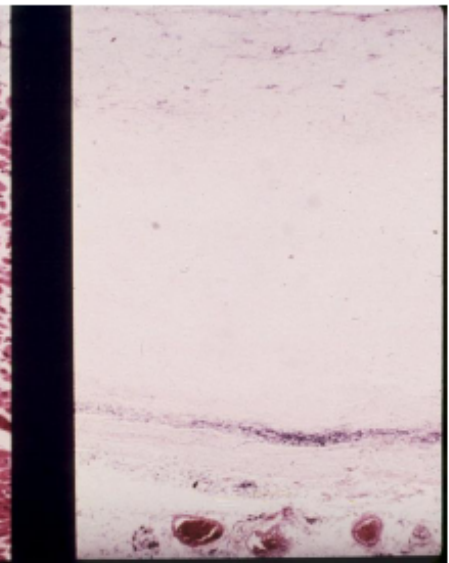
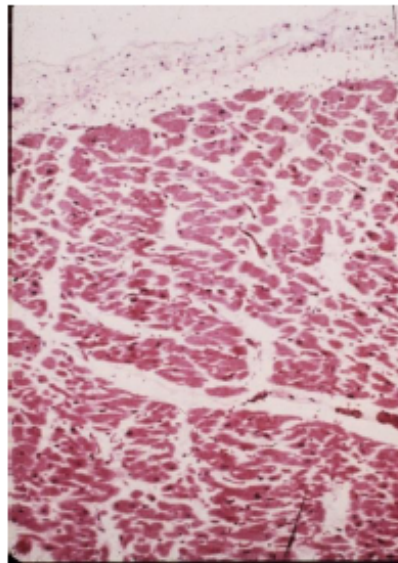
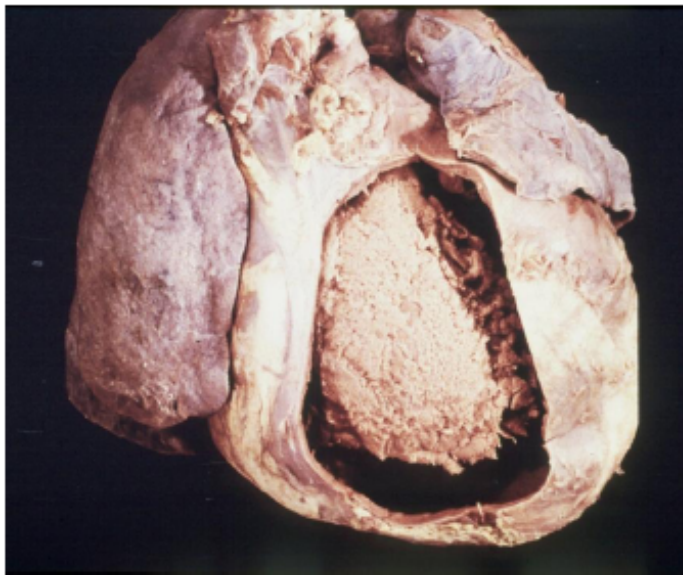


2D 17 cm
35 f/s
f: 1.7 MHz H
DR: 65 dB
R: 4.0 G: 76

P:0dB
TIs:1.0
MI:1.1



Tuberculous pericarditis



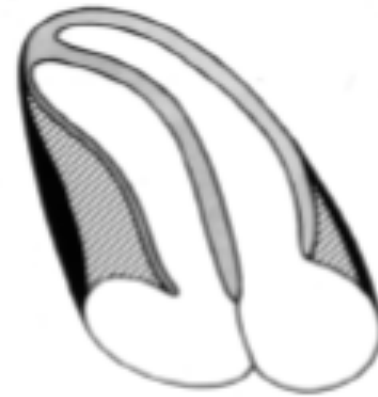
Courtesy of Professor Patrick Commerford, University of Cape Town



Annular form



Left-sided form



Right sided form



Global form



**Global form with
MYOCARDIAL ATROPHY**



**Global form with
MYOCARDIAL FIBROSIS**

Very high mortality in pericardiectomy

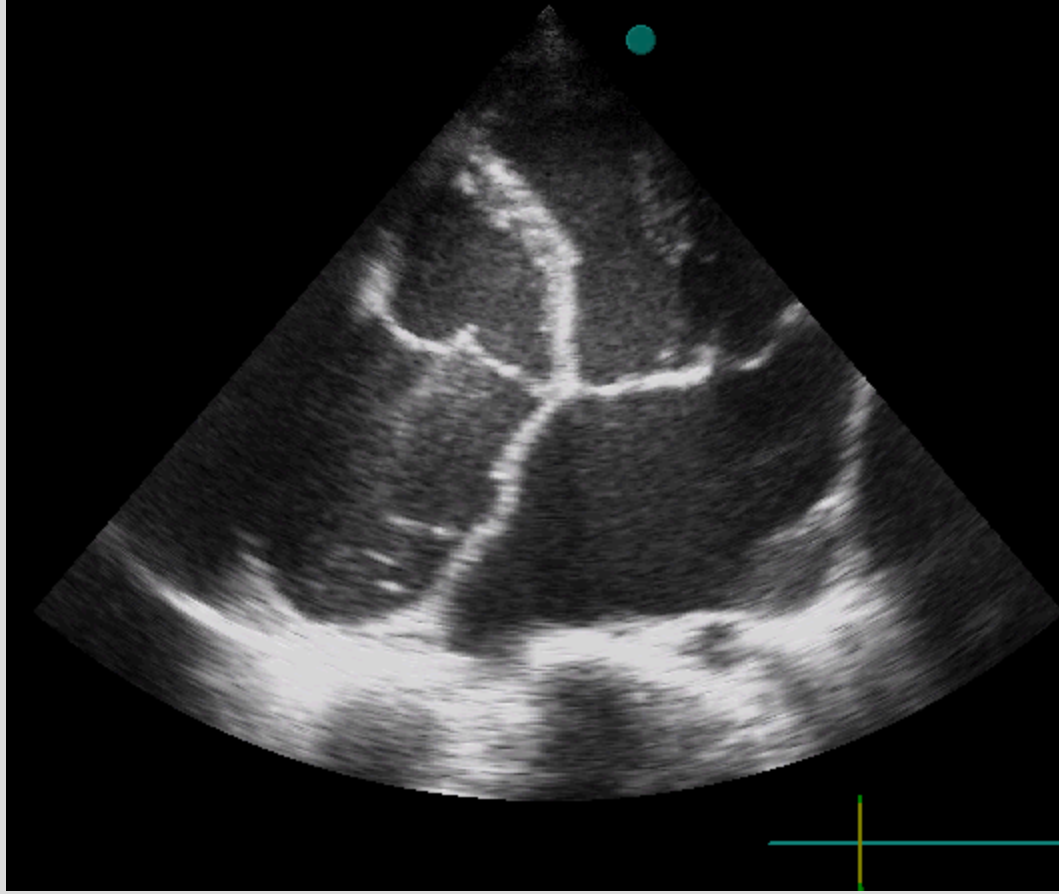
Rienmüller et al. J Thorac Imaging 1993

Salam Centre for Cardiac Surgery

ID:22988

*Cardiac
3S

13:51:12
11-Oct-10



2D 18 cm
35 f/s
f: 1.7 MHz H
DR: 65 dB
R: 4.0 G: 63

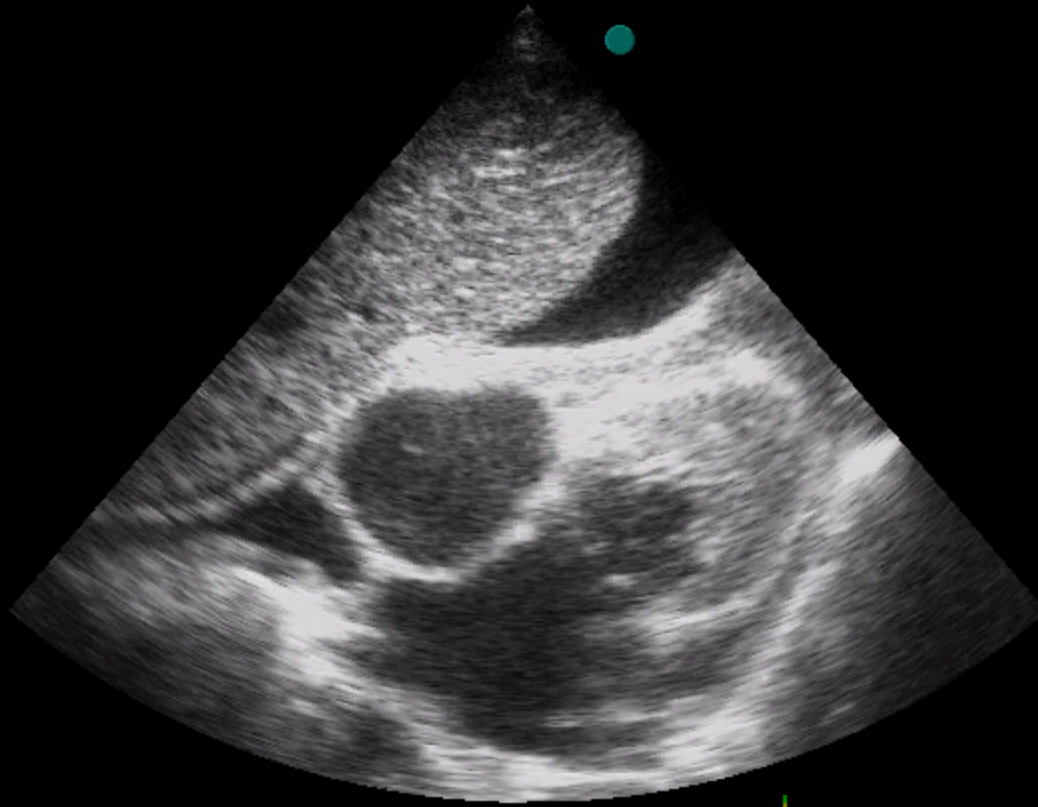
P:0dB
TIs:1.0
MI:1.1

Salam Centre for Cardiac Surgery

ID:25233

*Cardiac
3S

1:16:39 pm
02-Sep-10



2D 17 cm
35 f/s
f: 1.7 MHz H
DR: 65 dB
R: 4.0 G: 70

P:0dB
TIs:1.0
MI:1.1

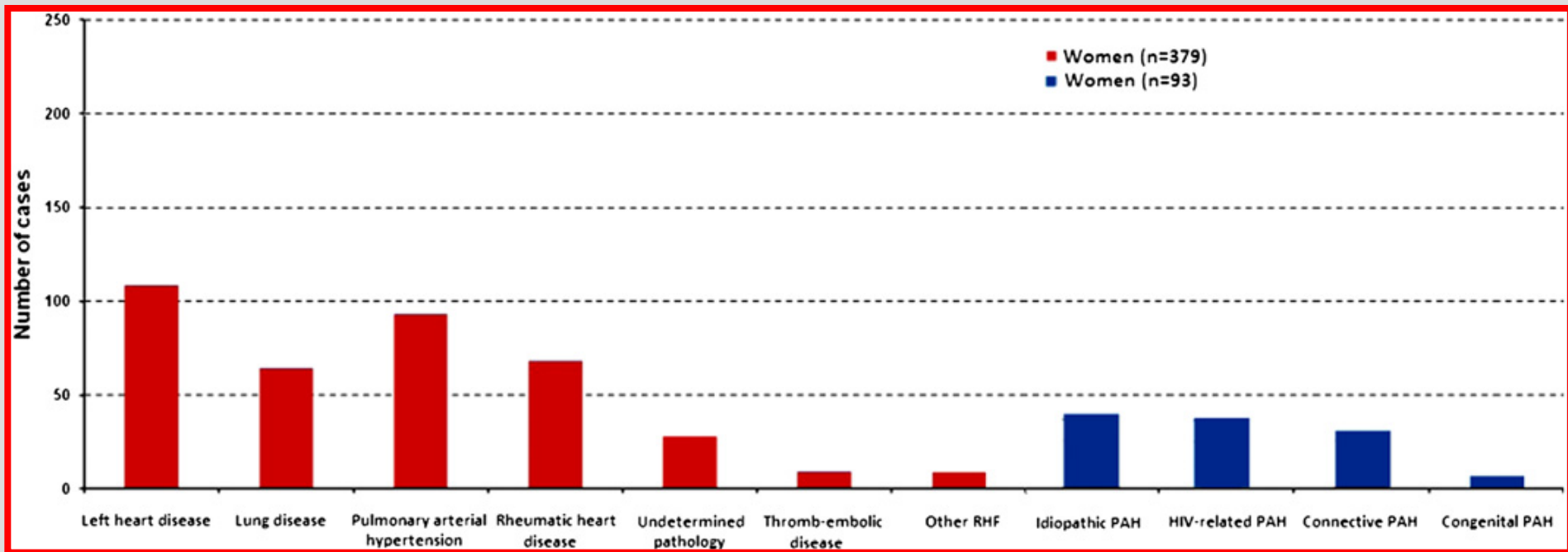


Pulmonary hypertension and right heart failure



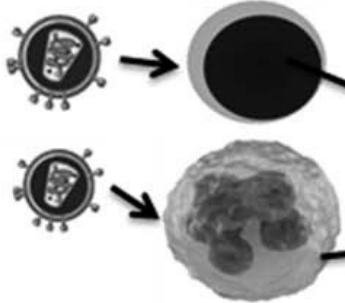
Women's cardiovascular health in Africa

Ana Olga Mocumbi,^{1,2} Karen Sliwa^{3,4}



HIV infection

HIV virus Immune cells



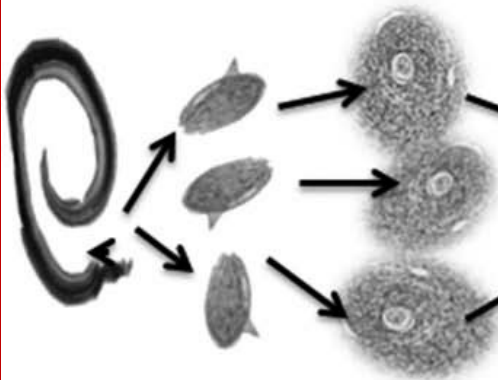
Viral Proteins

Potentialion??

Injury to Endothelial system

Pulmonary vasculopathy

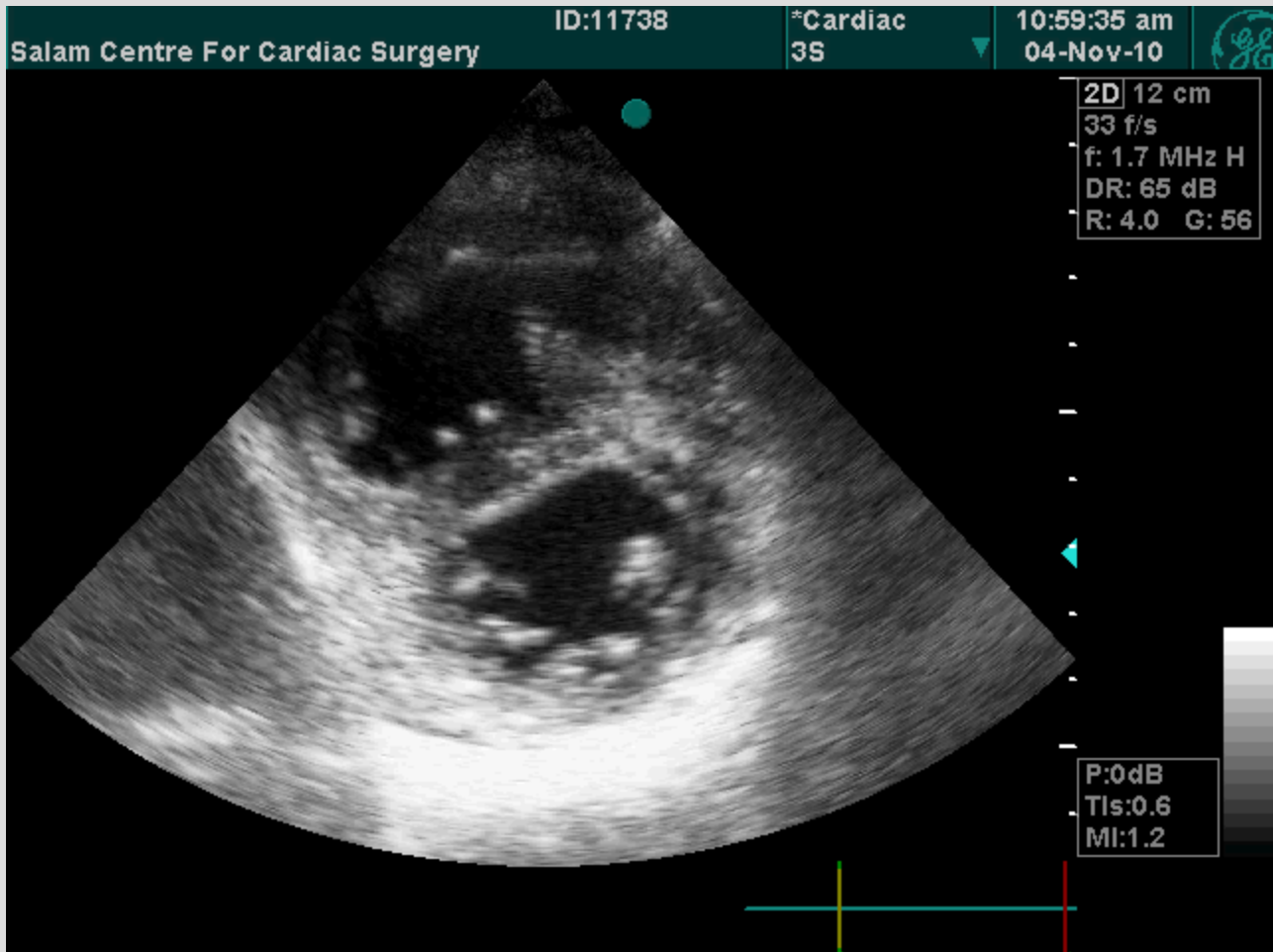
Pulmonary Hypertension



Inflammatory mediators

worm Eggs Granulomas

Schistosomiasis

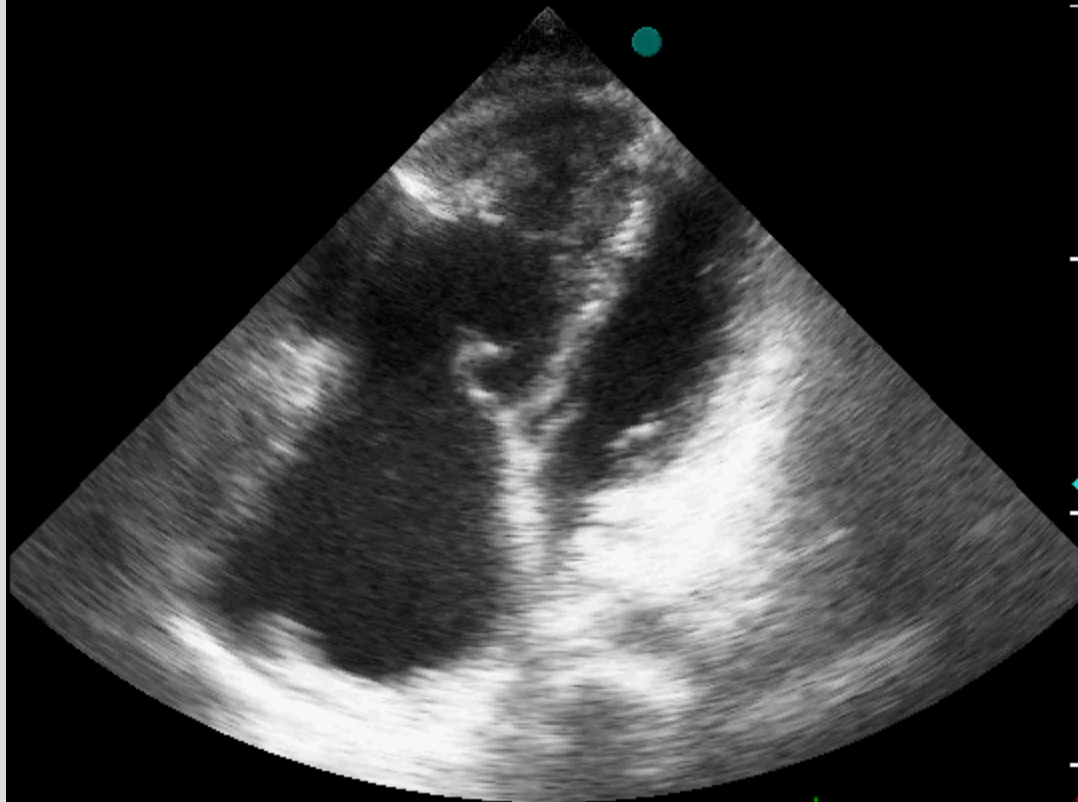


Salam Centre For Cardiac Surgery

ID:11738

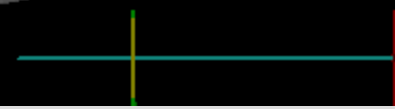
*Cardiac
3S

11:13:21 am
04-Nov-10



2D 16 cm
32 f/s
f: 1.7 MHz H
DR: 65 dB
R: 4.0 G: 63

P:0dB
TIs:0.9
MI:1.2



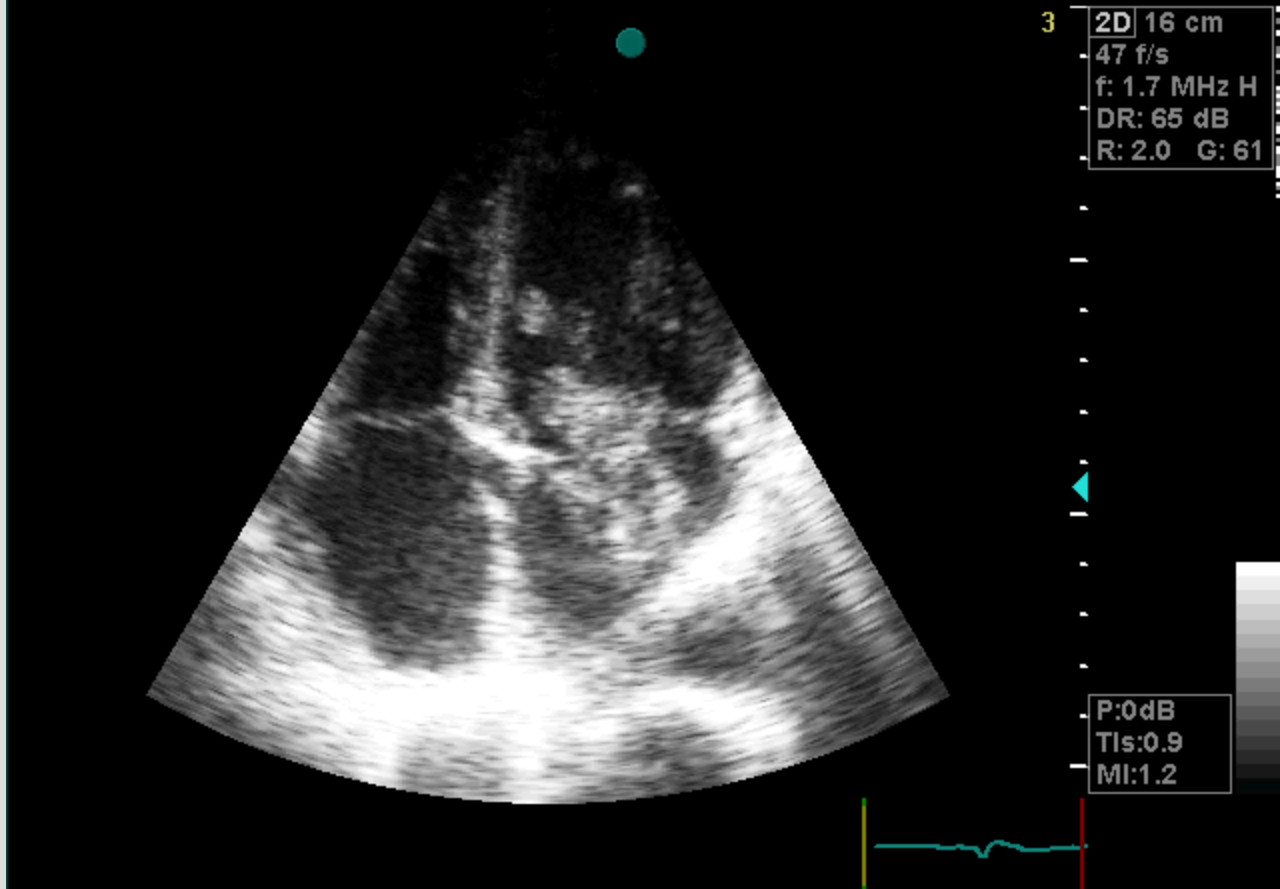
Cardiovascular manifestations of Burkitt lymphoma

Salam Centre for Cardiac Surgery

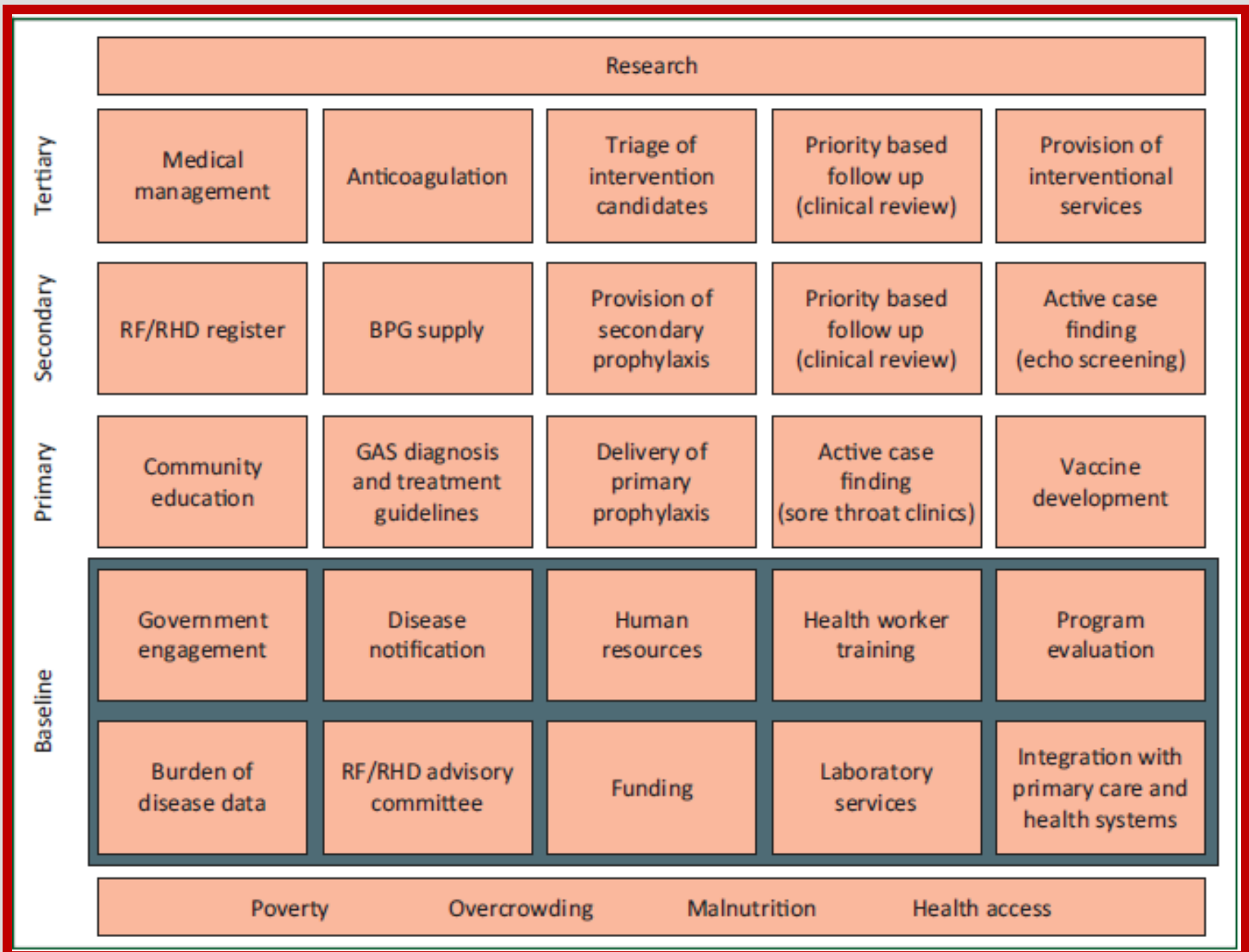
ID:34169 FU

*Default
3S

11:50:48 am
16-Aug-11

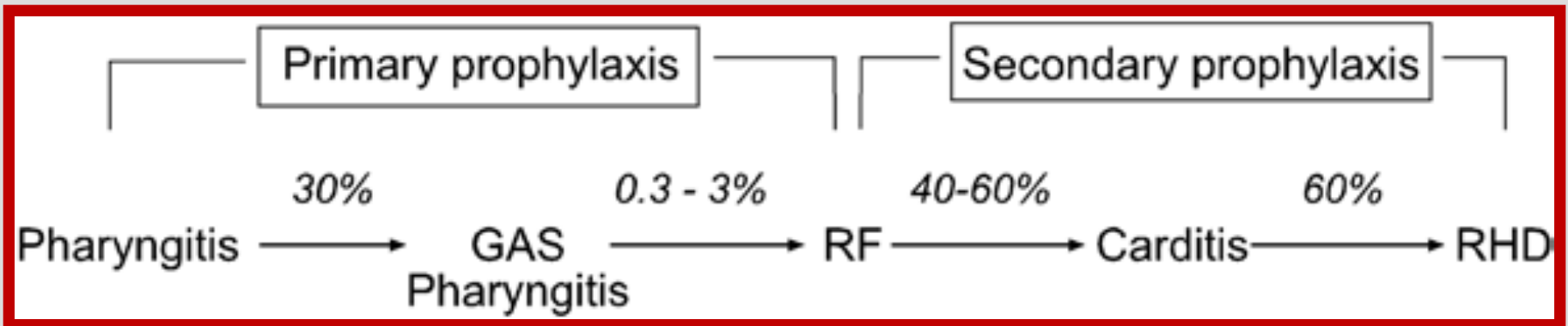


Rheumatic heart disease

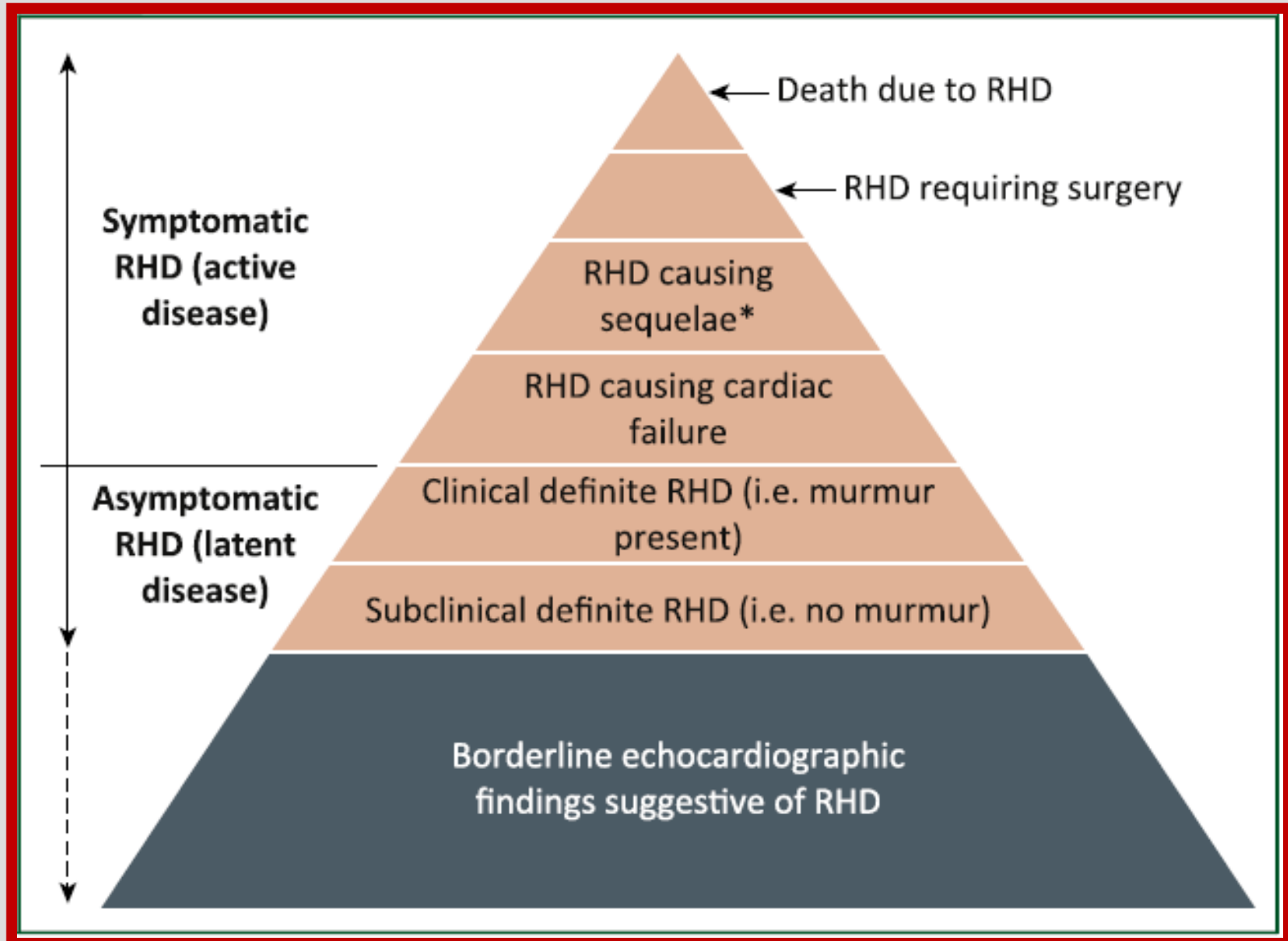




Progression from pharyngitis to chronic RHD



Toward a new model of RHD



Rheumatic heart disease

- It is a disease that, according to the *Global Burden of Disease 2010 study*, affects >34 million people, causing >345 000 deaths and 10 million disability-adjusted life years (DALYs) lost per year, almost all in low and middle income countries

Lancet 2012;380:2197–2223

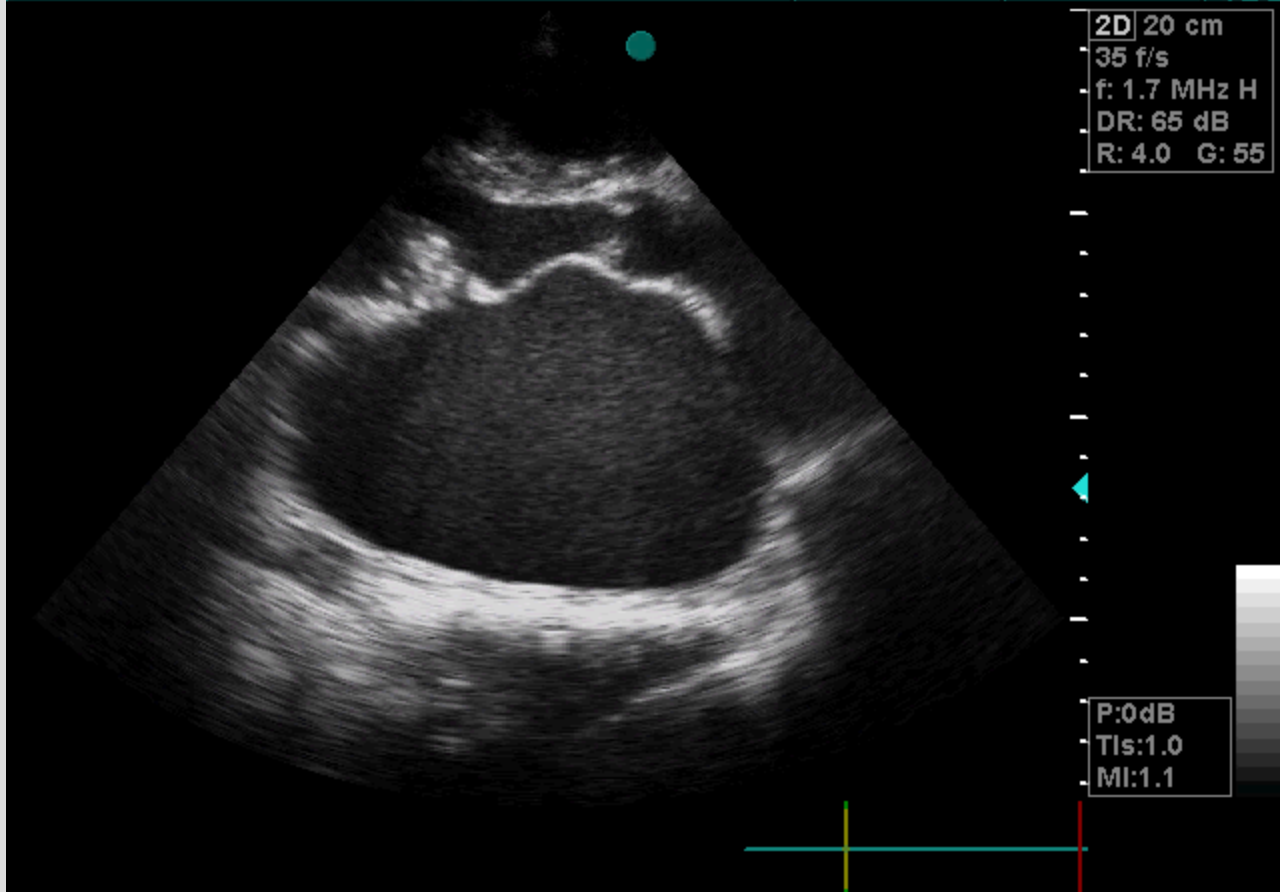
Lancet 2012;380:2095–2128

Salam Centre for Cardiac Surgery

ID:26912

*Cardiac
3S

11:40:40
07-Oct-10

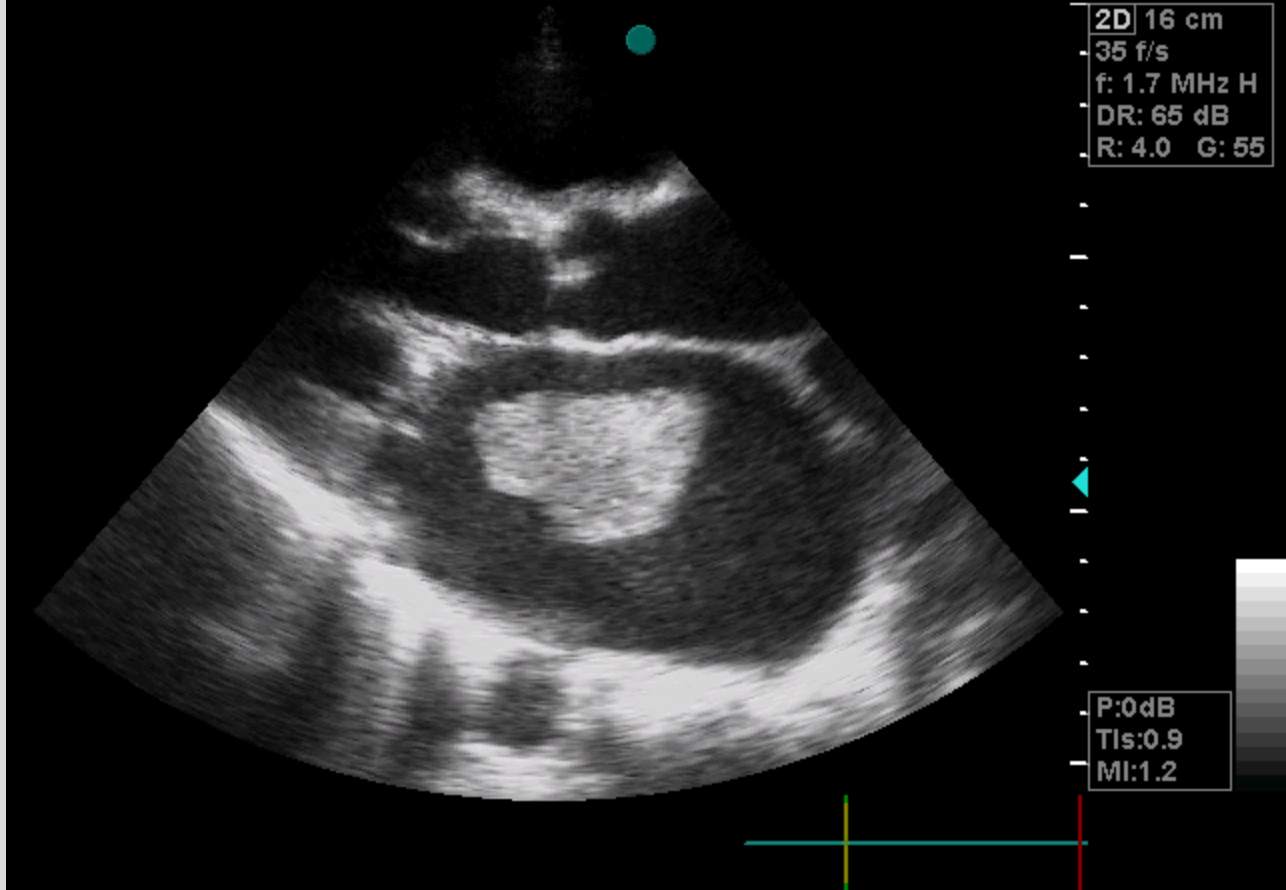


Salam Centre for Cardiac Surgery

ID:28085

*Cardiac
3S

11:09:21
01-Dec-10

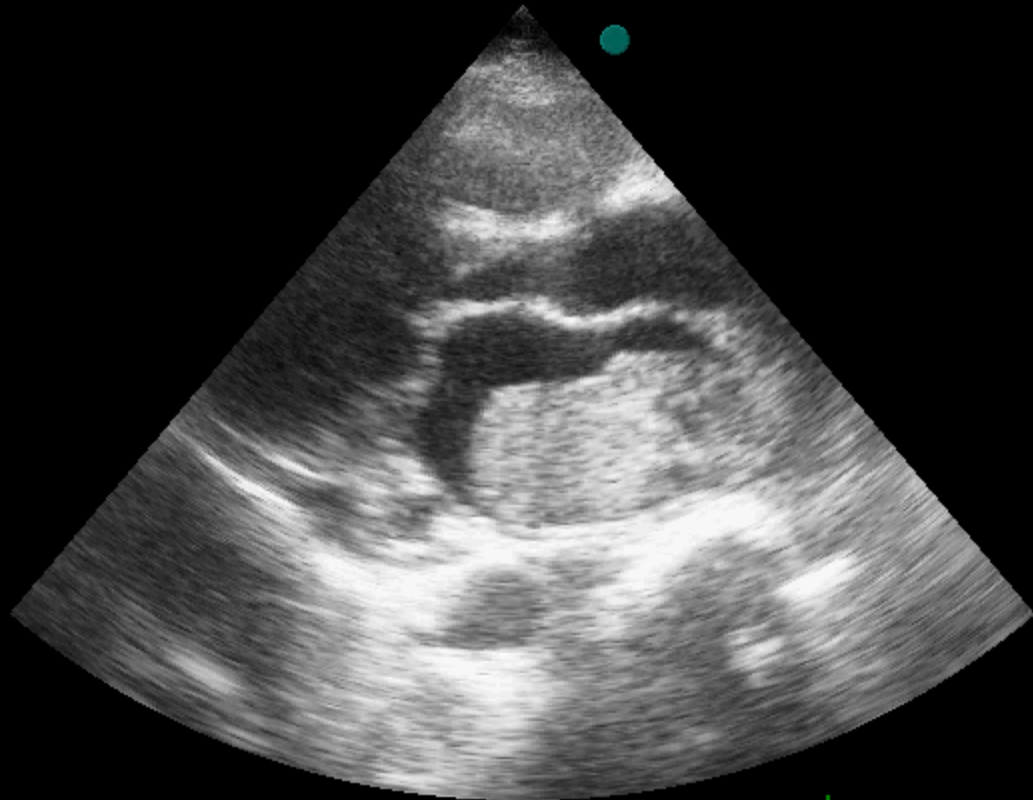


Salam Centre For Cardiac Surgery

ID:25042

Cardiac
3S

8:54:43 am
02-Oct-10



2D 16 cm
35 f/s
f: 1.7 MHz H
DR: 65 dB
R: 2.0 G: 56

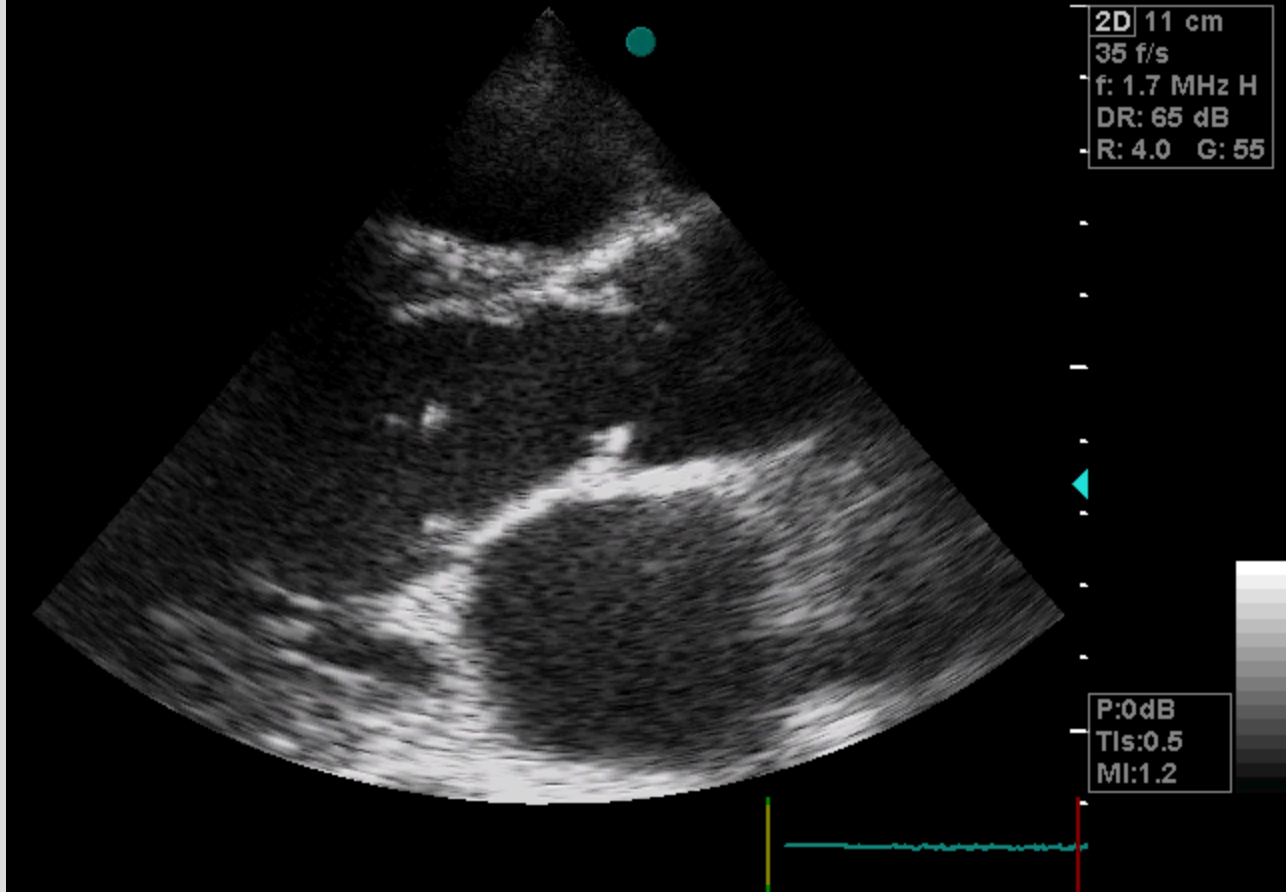
P:0dB
TIs:0.9
MI:1.2

Salam Centre for Cardiac Surgery

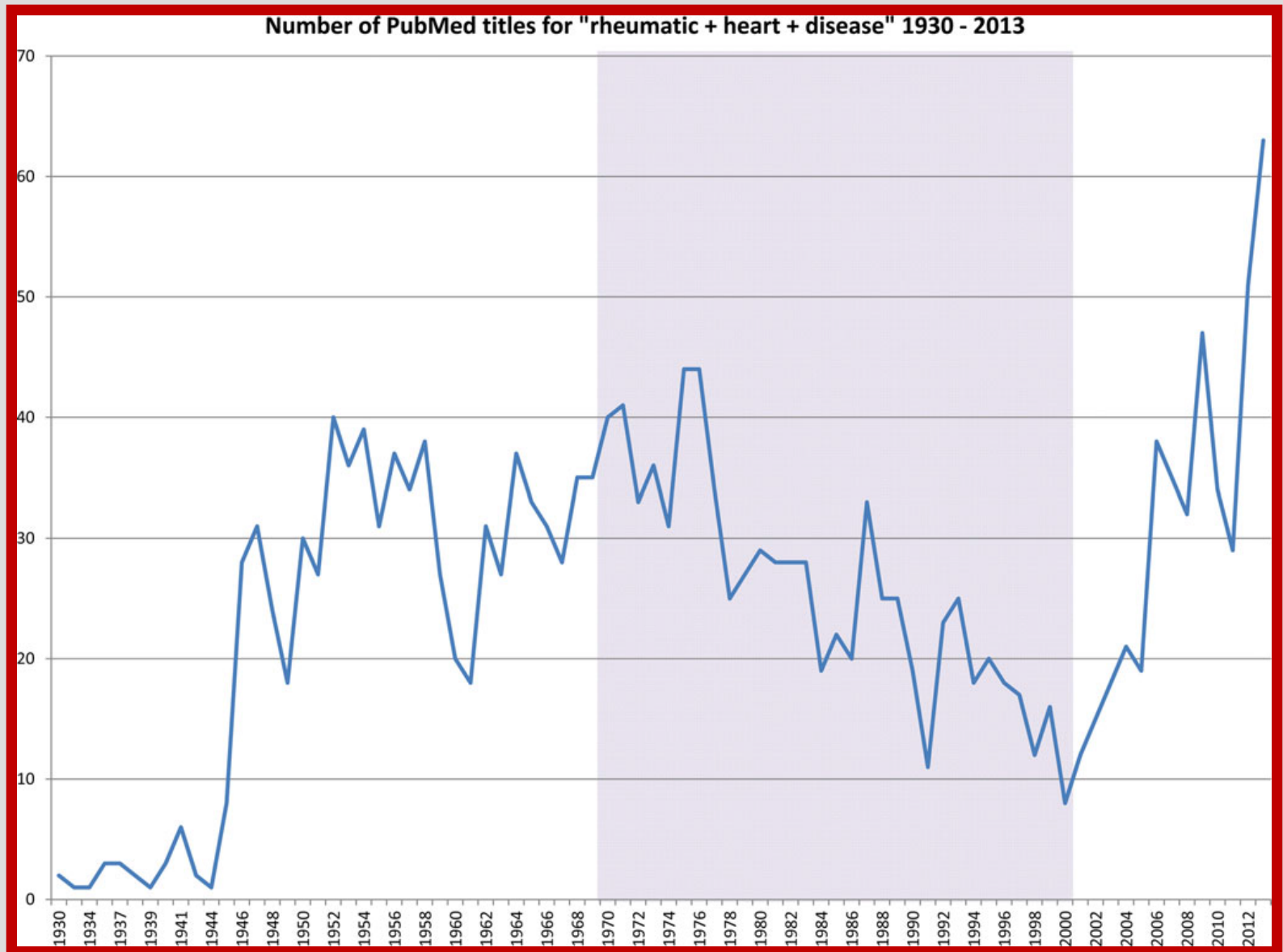
ID:27257

*Cardiac
3S

9:40:38
23-Nov-10



The "southern shift"



European Heart Journal Advance Access published November 25, 2014



EUROPEAN
SOCIETY OF
CARDIOLOGY®

European Heart Journal

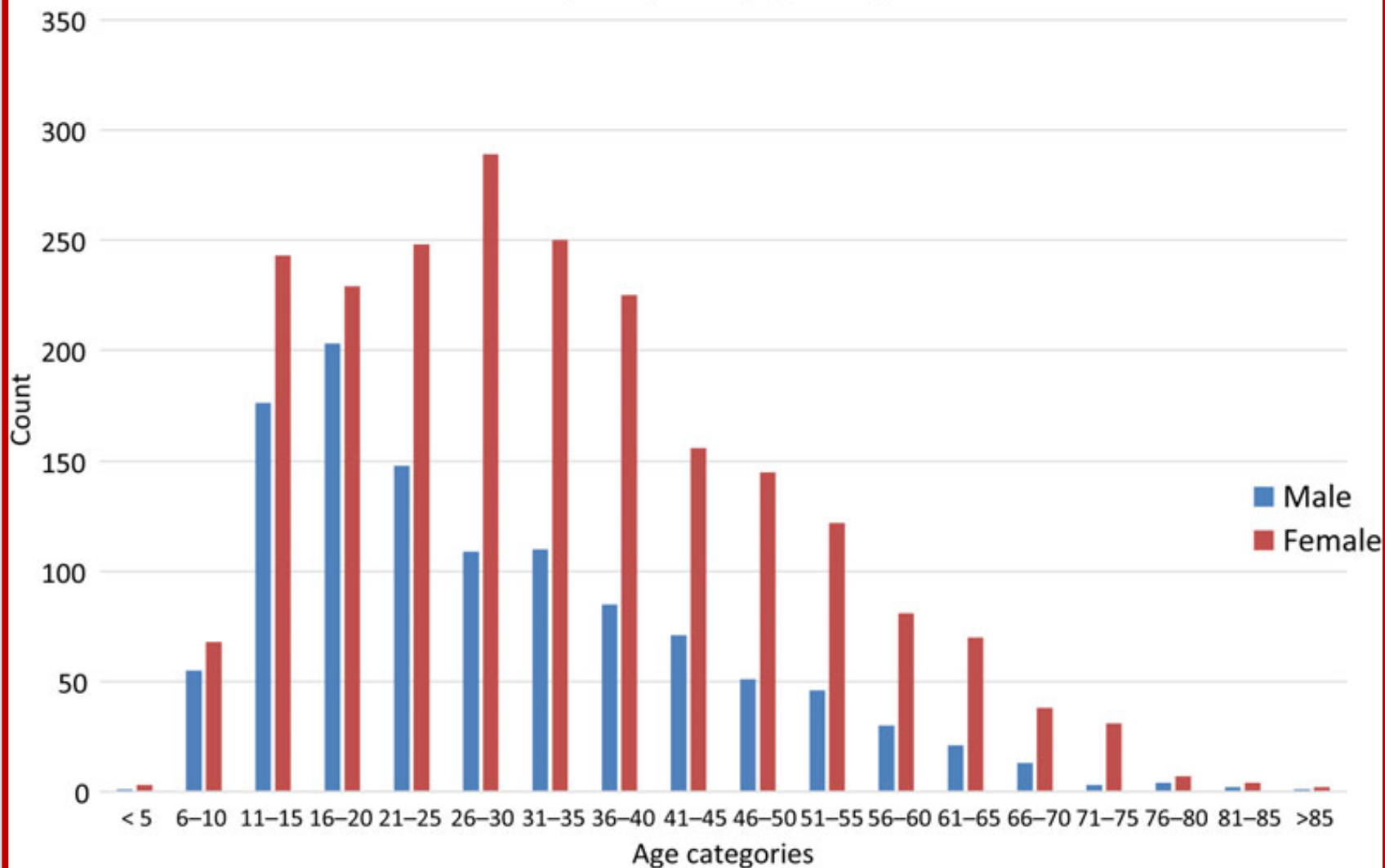
doi:10.1093/eurheartj/ehu449

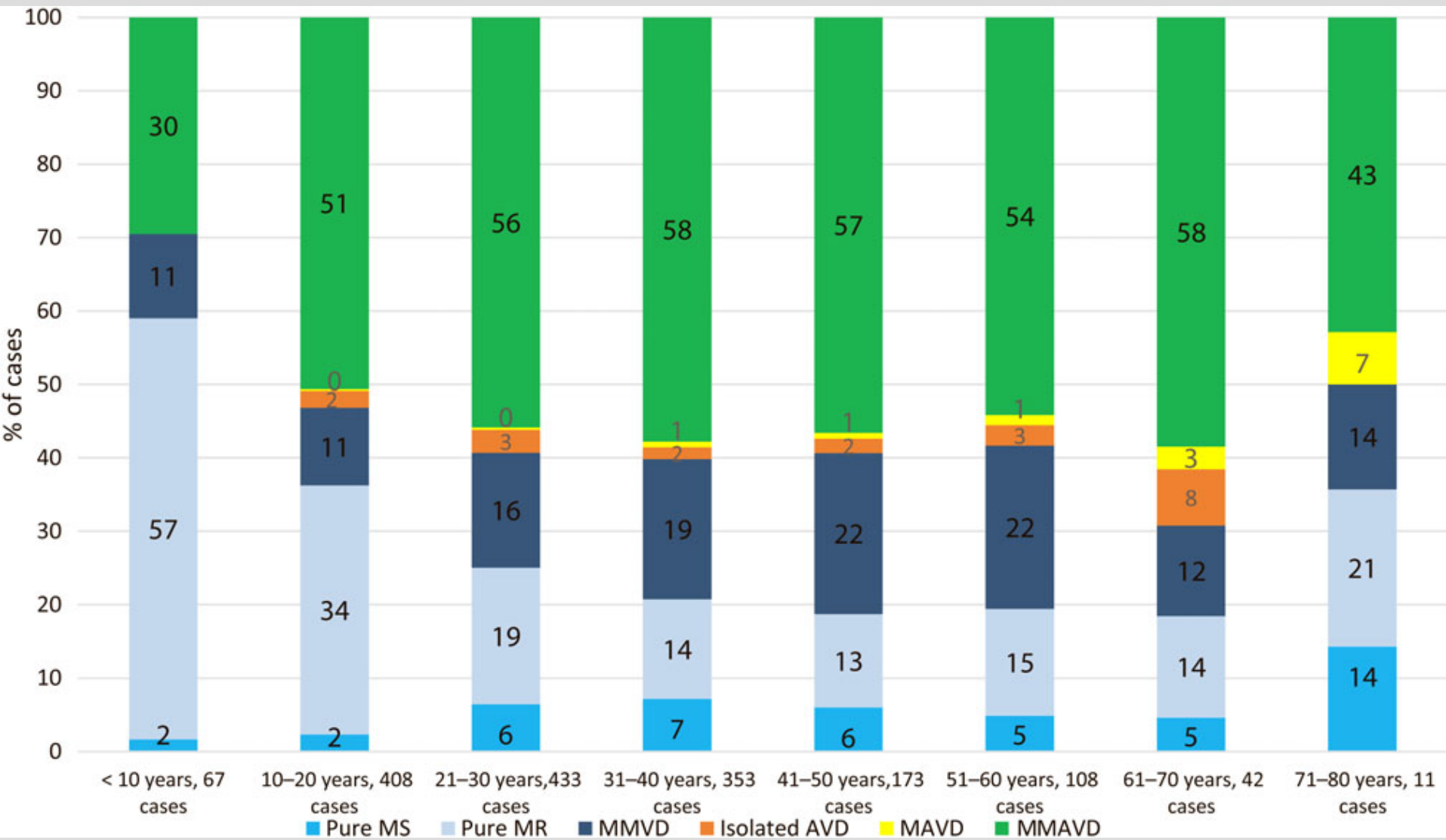
CLINICAL RESEARCH

Valvular heart disease

Characteristics, complications, and gaps in evidence-based interventions in rheumatic heart disease: the Global Rheumatic Heart Disease Registry (the REMEDY study)

Distribution of participants by age and gender



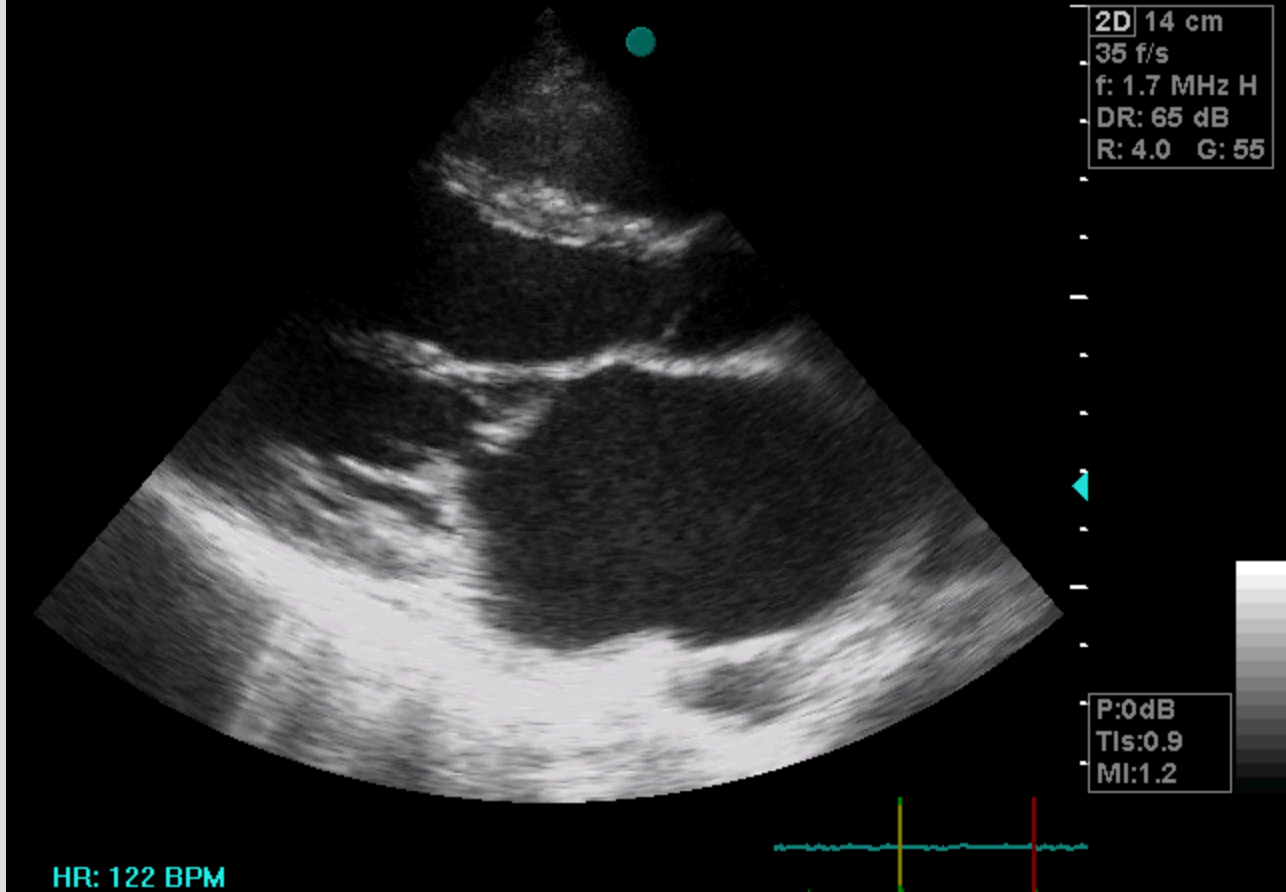


Salam Centre for Cardiac Surgery

ID:26261

*Cardiac
3S

9:18:59
09-Nov-10

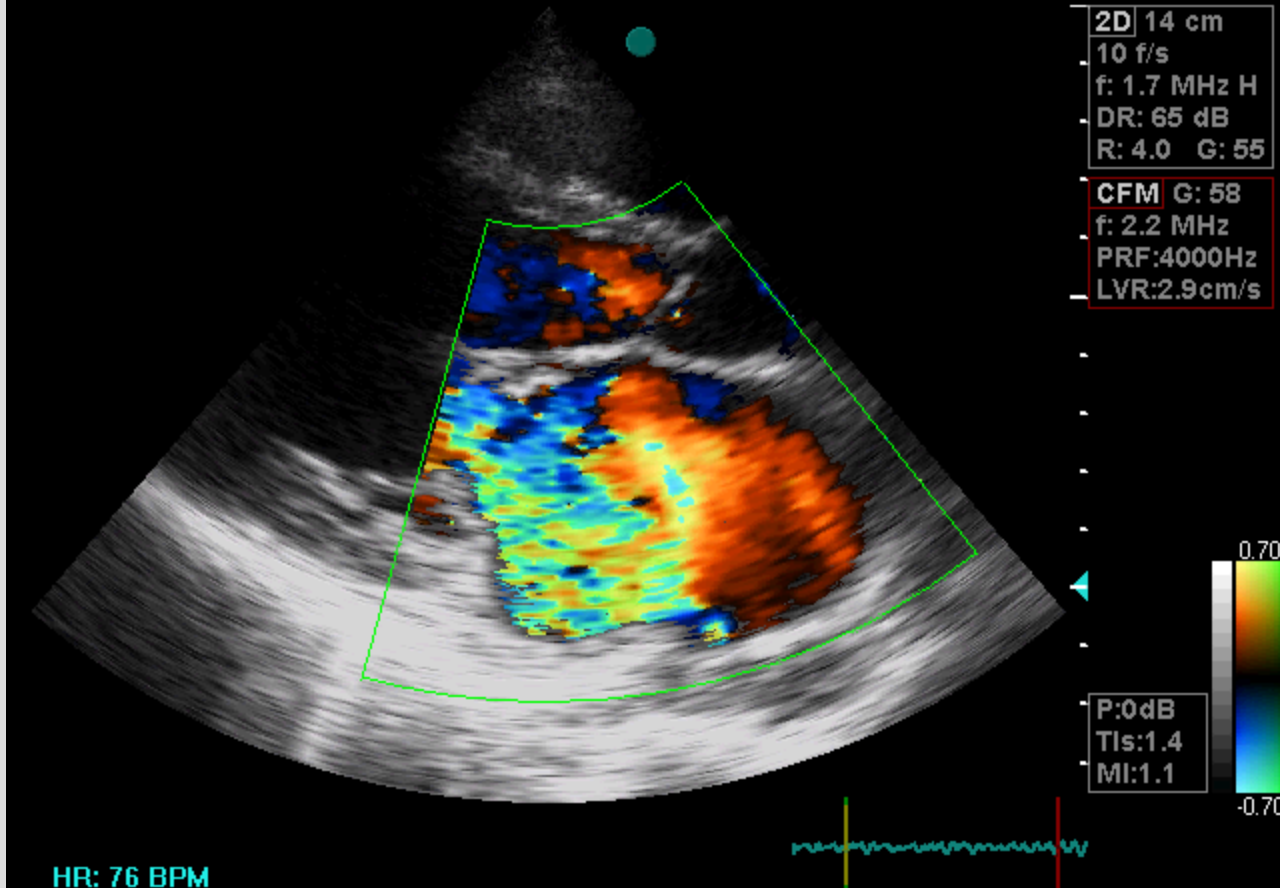


Salam Centre for Cardiac Surgery

ID:26261

*Cardiac
3S

9:19:36
09-Nov-10

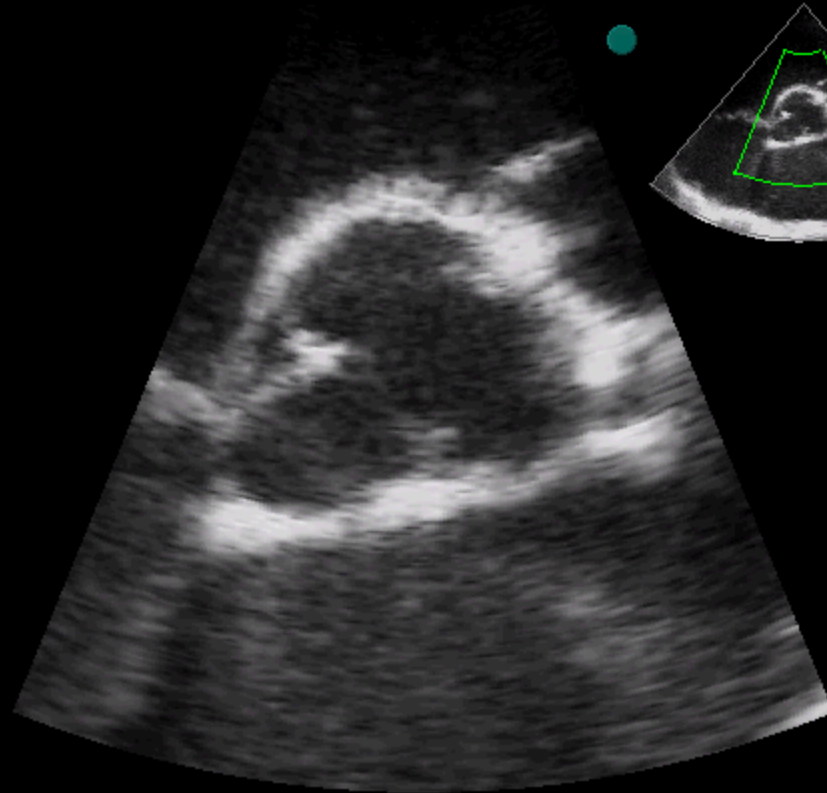


Salam Centre for Cardiac Surgery

ID:28208

*Cardiac
3S

8:56:37
29-Nov-10



2D 14 cm
35 f/s
f: 1.7 MHz H
DR: 65 dB
R: 4.0 G: 55

P:0dB
TIs:0.9
MI:1.2

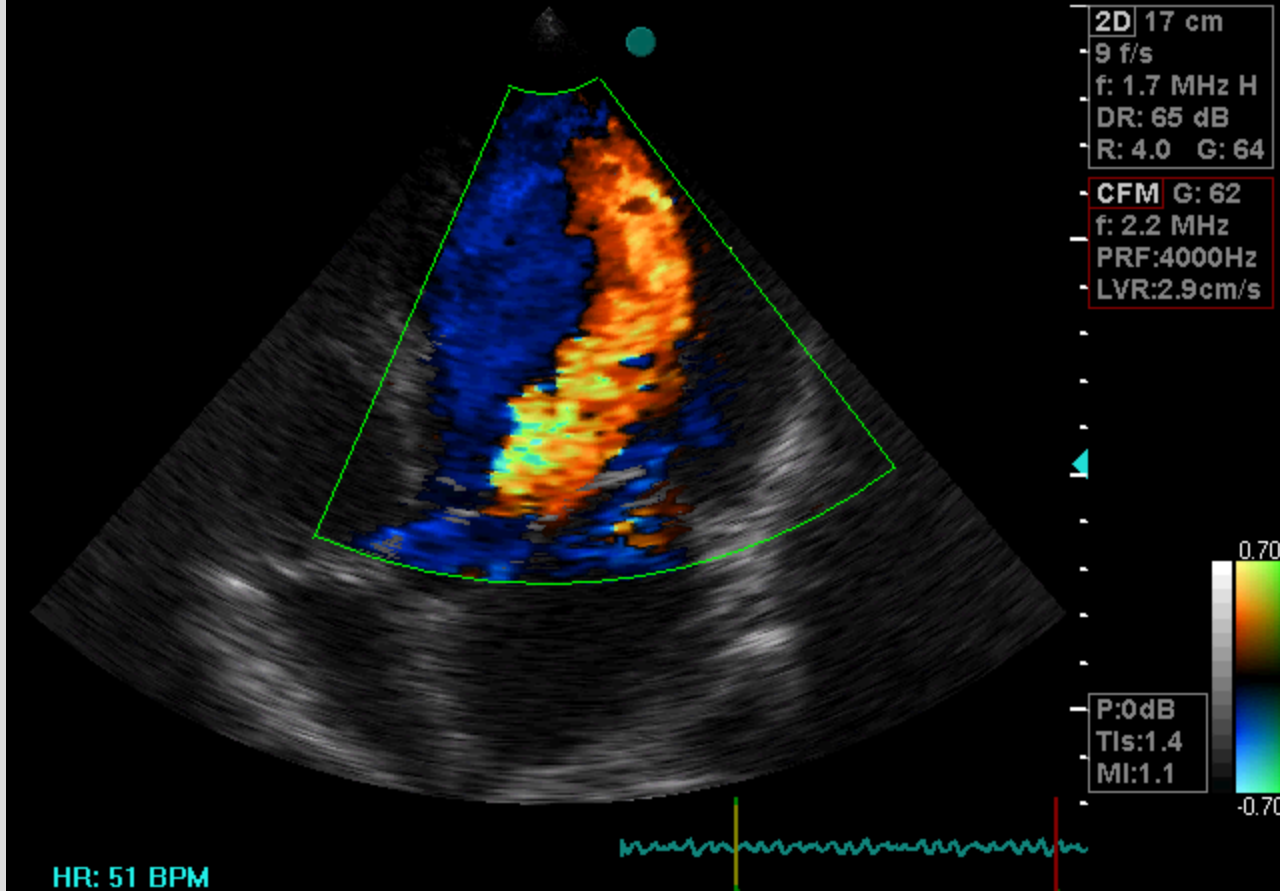


Salam Centre for Cardiac Surgery

ID:28208

*Cardiac
3S

8:59:55
29-Nov-10

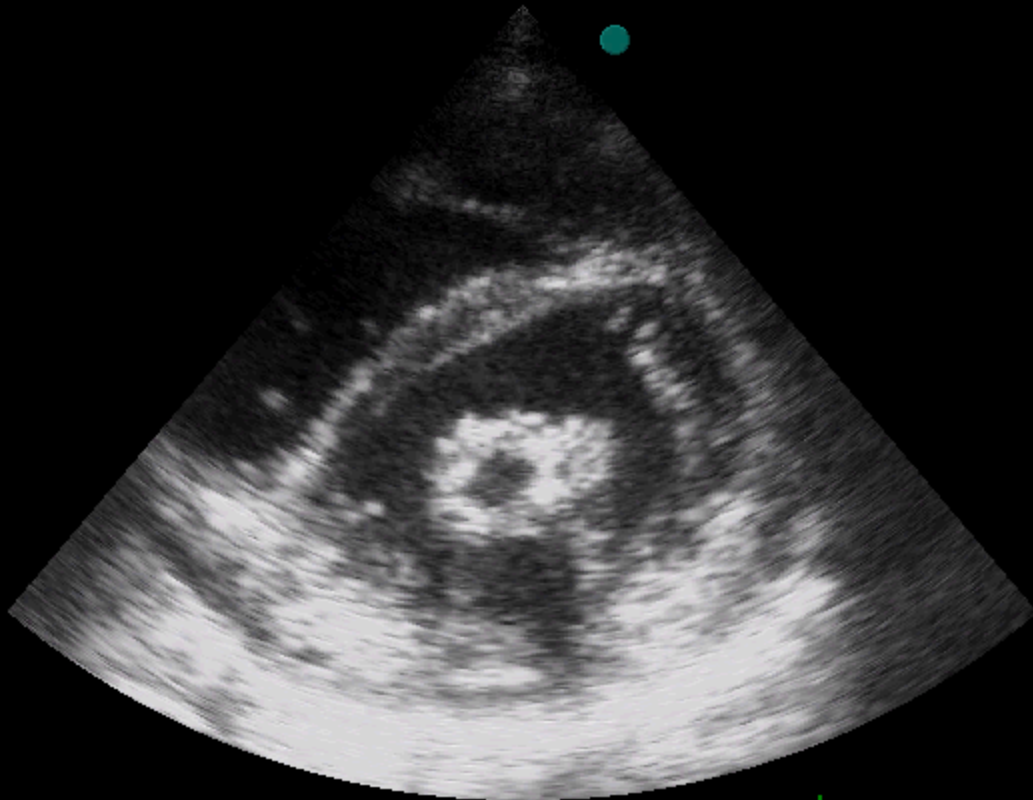


Salam Centre for Cardiac Surgery

ID:27507

*Cardiac
3S

9:50:02
14-Nov-10

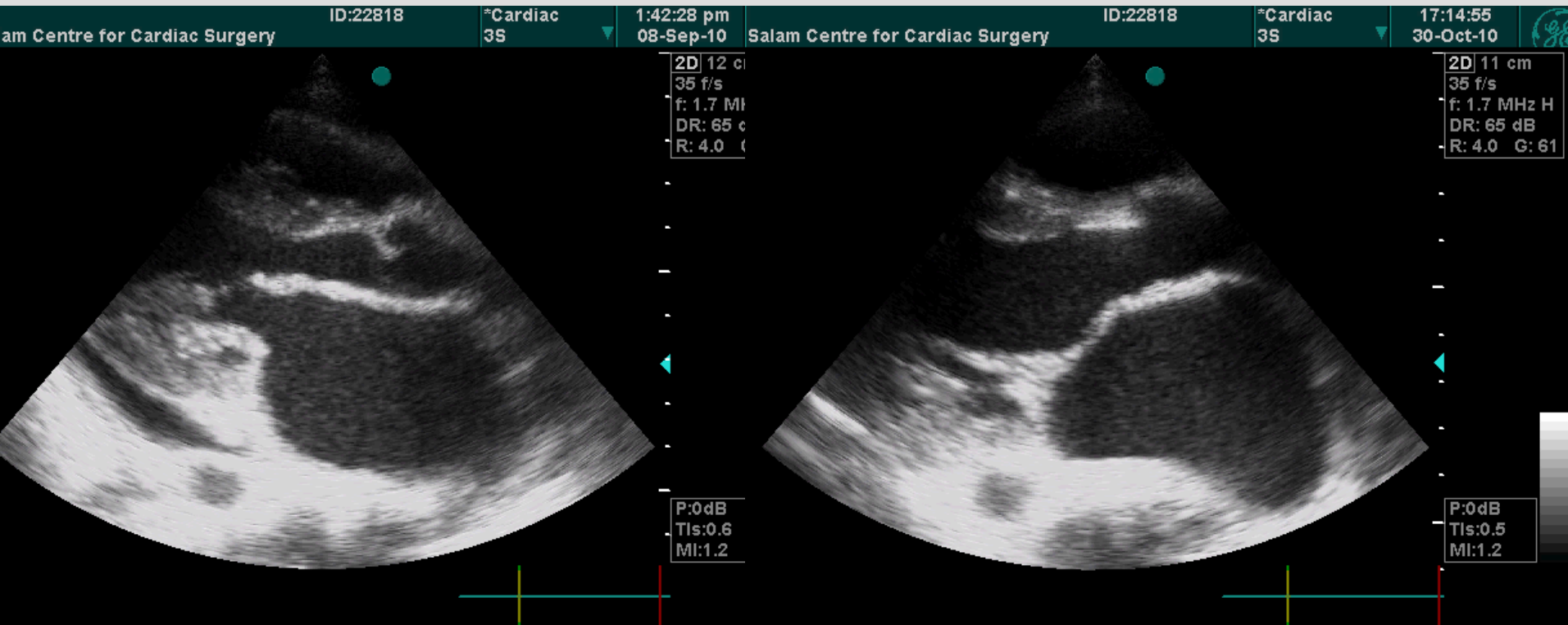


2D 12 cm
35 f/s
f: 1.7 MHz H
DR: 65 dB
R: 4.0 G: 66

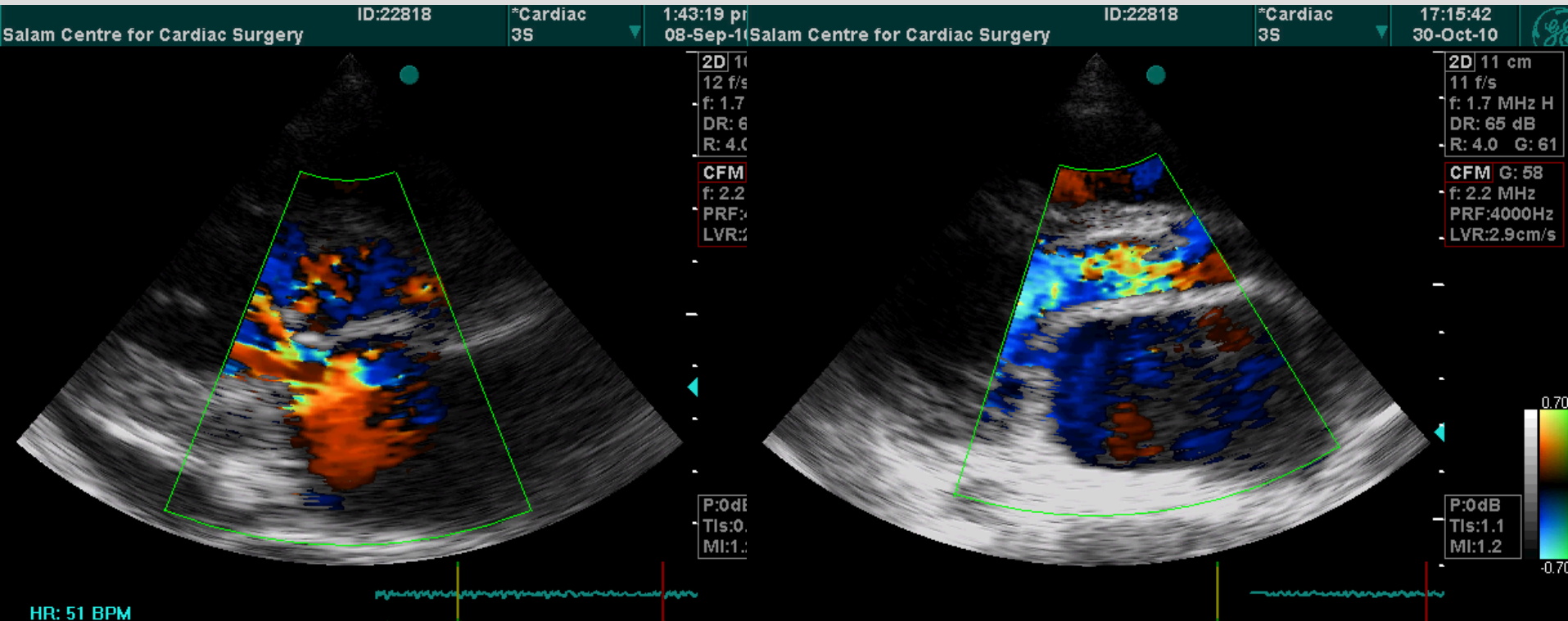
P:0dB
TIs:0.6
MI:1.2



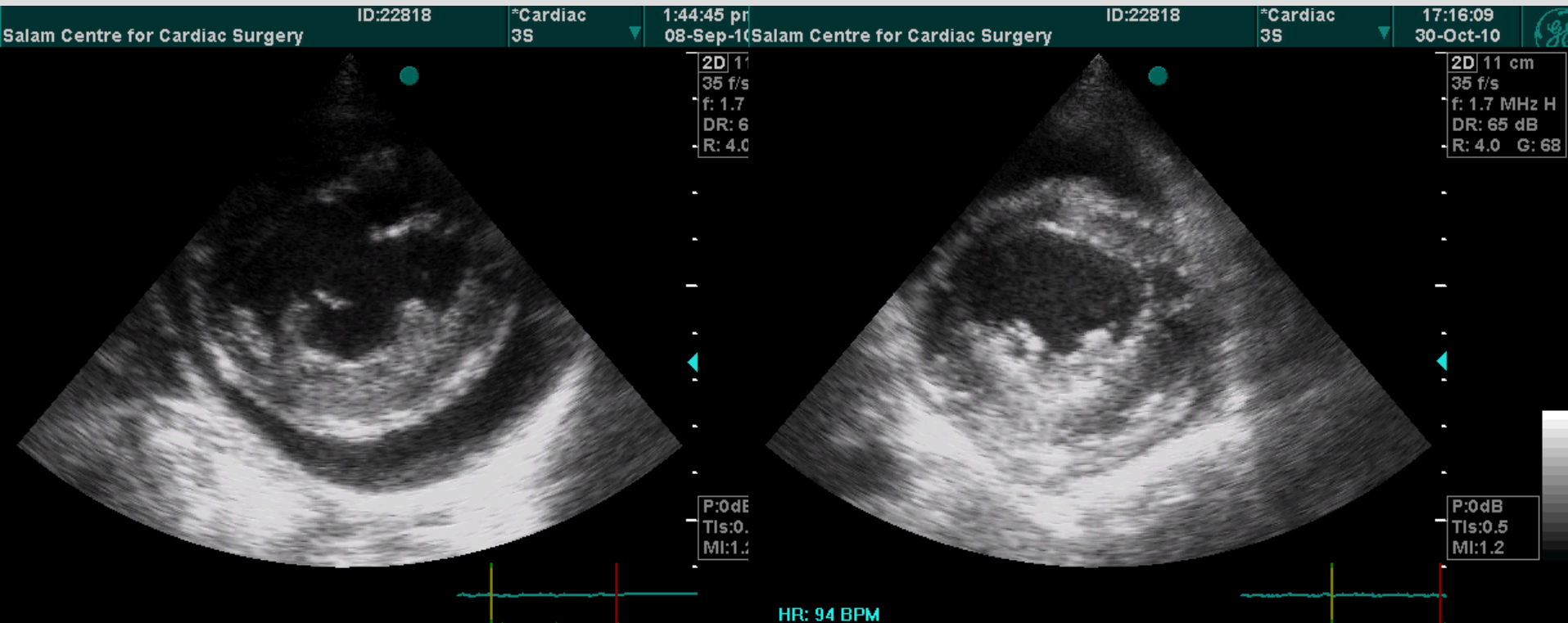
Acute and subacute RF



Acute and subacute RF



Acute and subacute RF

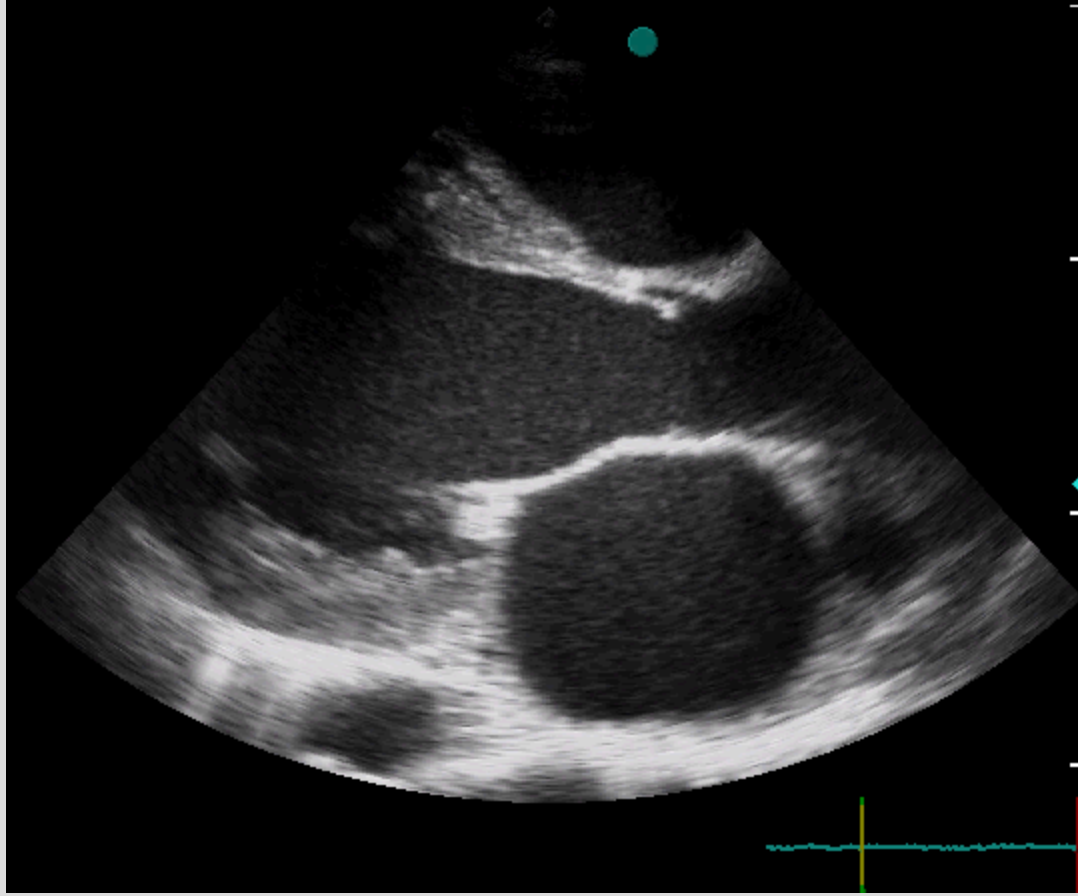


Salam Centre for Cardiac Surgery

ID:26240

*Cardiac
3S

15:39:31
22-Sep-10



2D 16 cm
34 f/s
f: 1.7 MHz H
DR: 65 dB
R: 4.0 G: 55

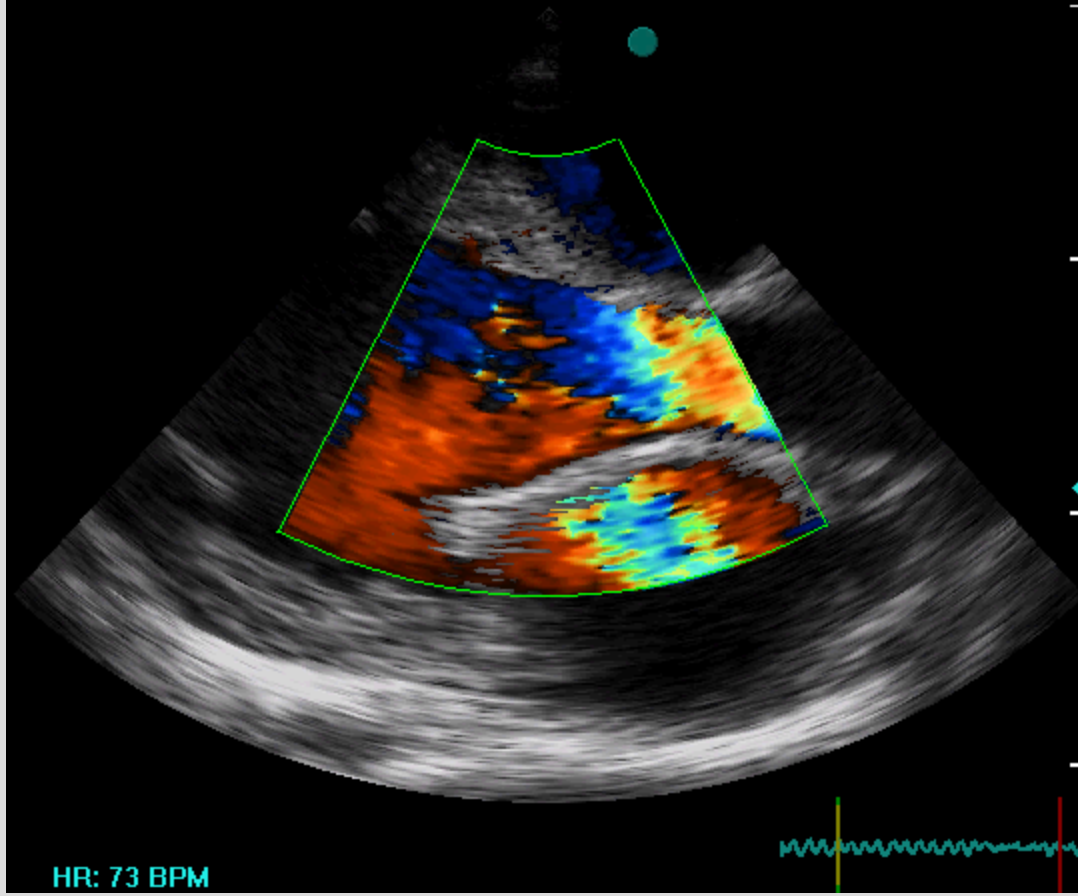
P:0dB
TIs:0.9
MI:1.2

Salam Centre for Cardiac Surgery

ID:26240

*Cardiac
3S

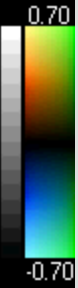
15:40:40
22-Sep-10



2D 16 cm
10 f/s
f: 1.7 MHz H
DR: 65 dB
R: 4.0 G: 55

CFM G: 58
f: 2.2 MHz
PRF:4000Hz
LVR:2.9cm/s

P:0dB
TIs:1.4
MI:1.2



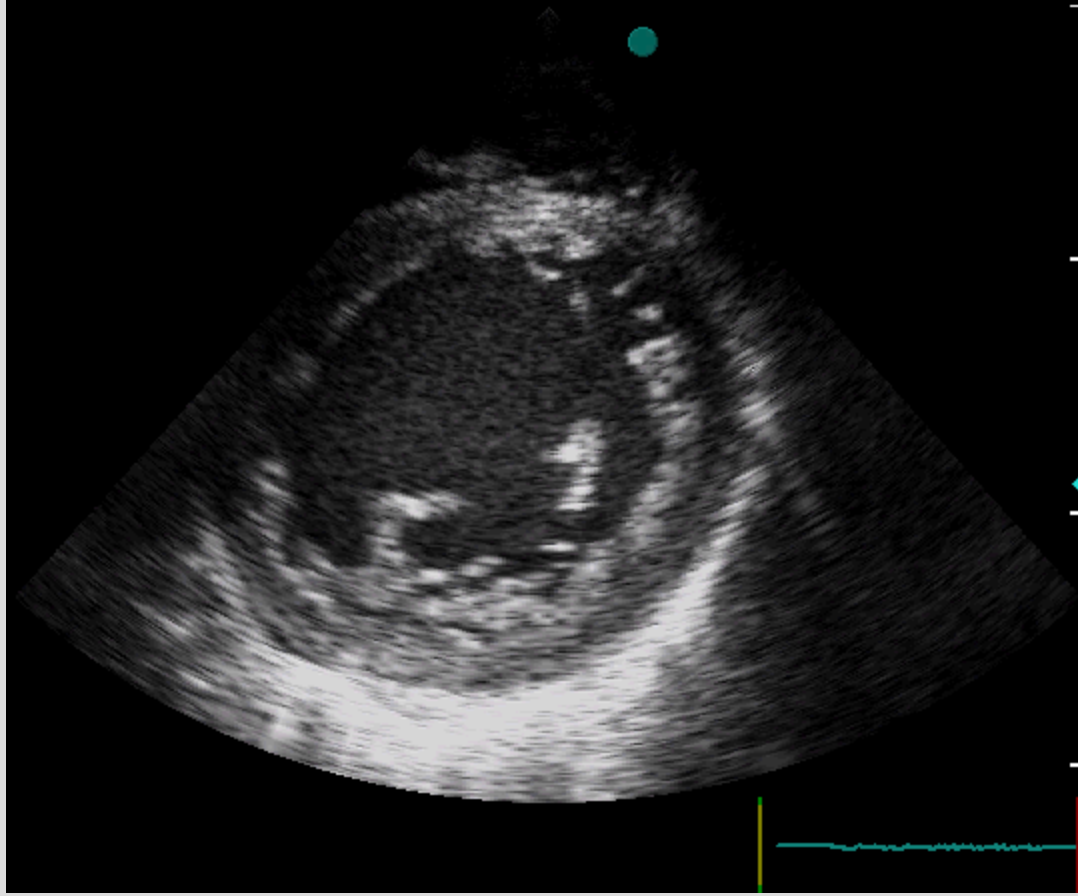
HR: 73 BPM

Salam Centre for Cardiac Surgery

ID:26240

*Cardiac
3S

15:42:27
22-Sep-10



2D 16 cm
34 f/s
f: 1.7 MHz H
DR: 65 dB
R: 4.0 G: 55

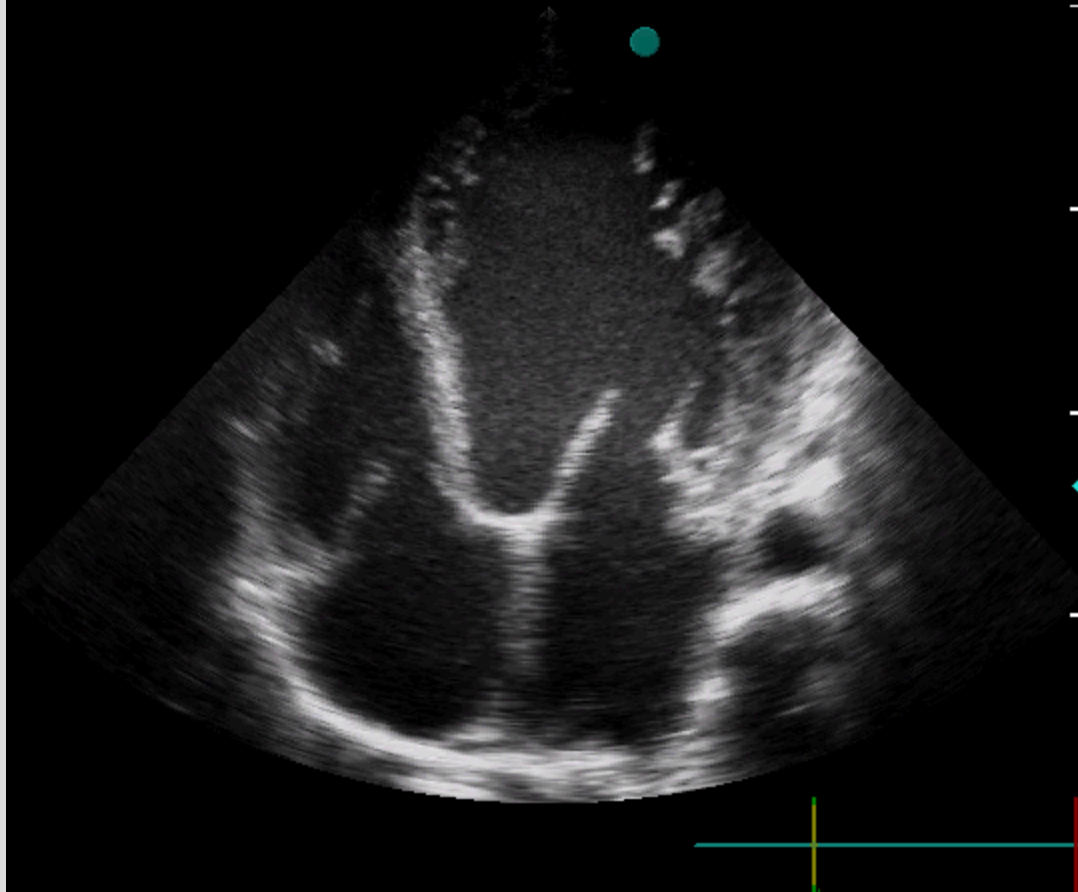
P:0dB
TIs:0.9
MI:1.2

Salam Centre for Cardiac Surgery

ID:26240

*Cardiac
3S

15:46:26
22-Sep-10



2D 20 cm
33 f/s
f: 1.7 MHz H
DR: 65 dB
R: 4.0 G: 58

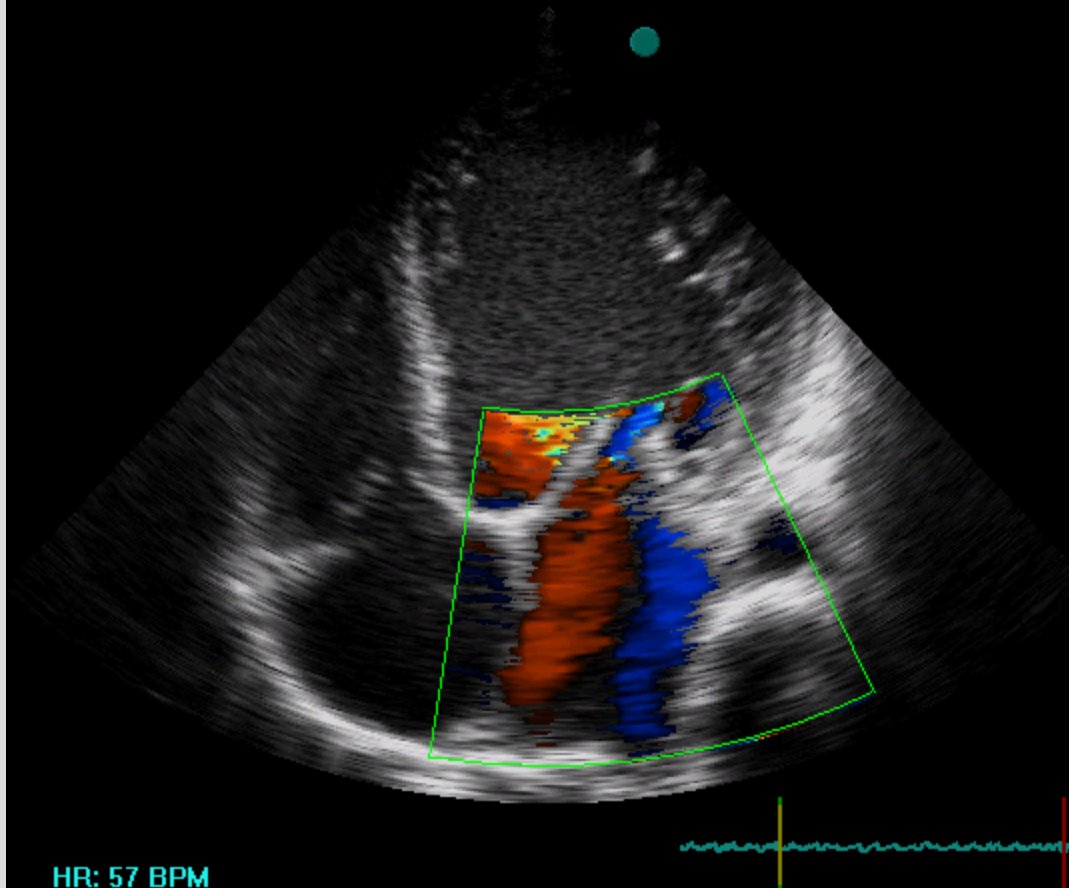
P:0dB
TIs:1.0
MI:1.1

Salam Centre for Cardiac Surgery

ID:26240

*Cardiac
3S

15:46:49
22-Sep-10



2D 20 cm
13 f/s
f: 1.7 MHz H
DR: 65 dB
R: 4.0 G: 58

CFM G: 58
f: 2.2 MHz
PRF:3700Hz
LVR:2.9cm/s

0.64
P:0dB
TIs:1.3
MI:1.0
-0.64

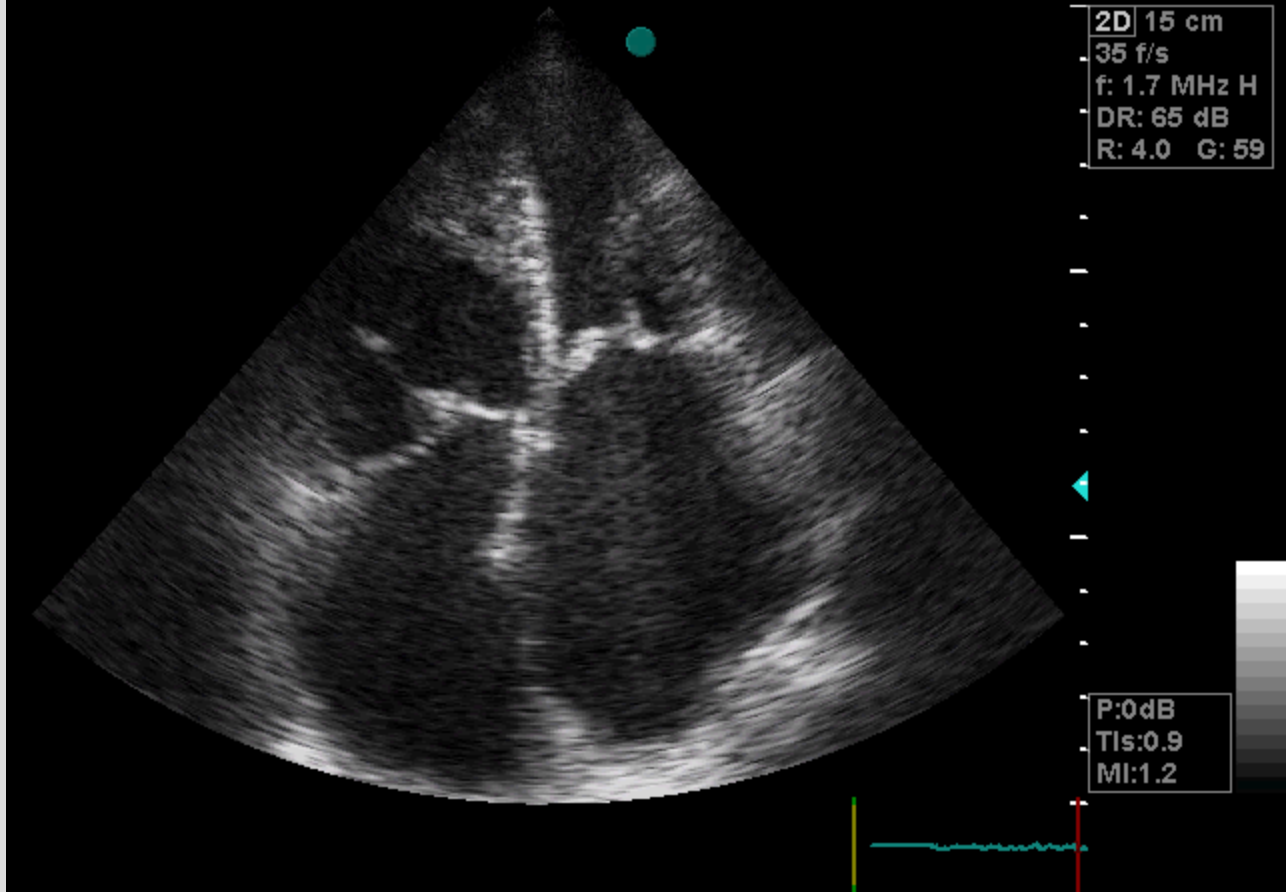
HR: 57 BPM

Salam Centre for Cardiac Surgery

ID:25328

*Cardiac
3S

10:12:04
02-Oct-10

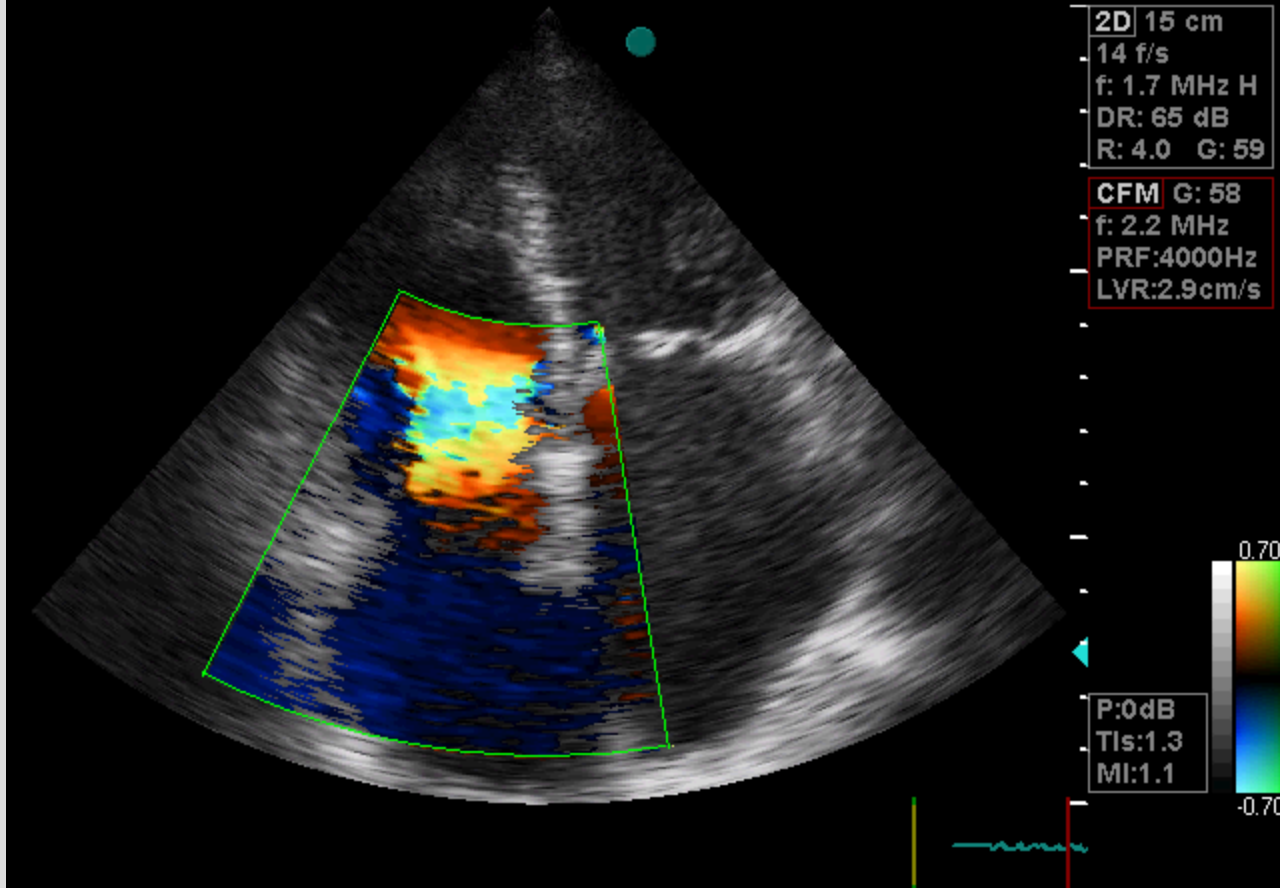


Salam Centre for Cardiac Surgery

ID:25328

*Cardiac
3S

10:12:28
02-Oct-10





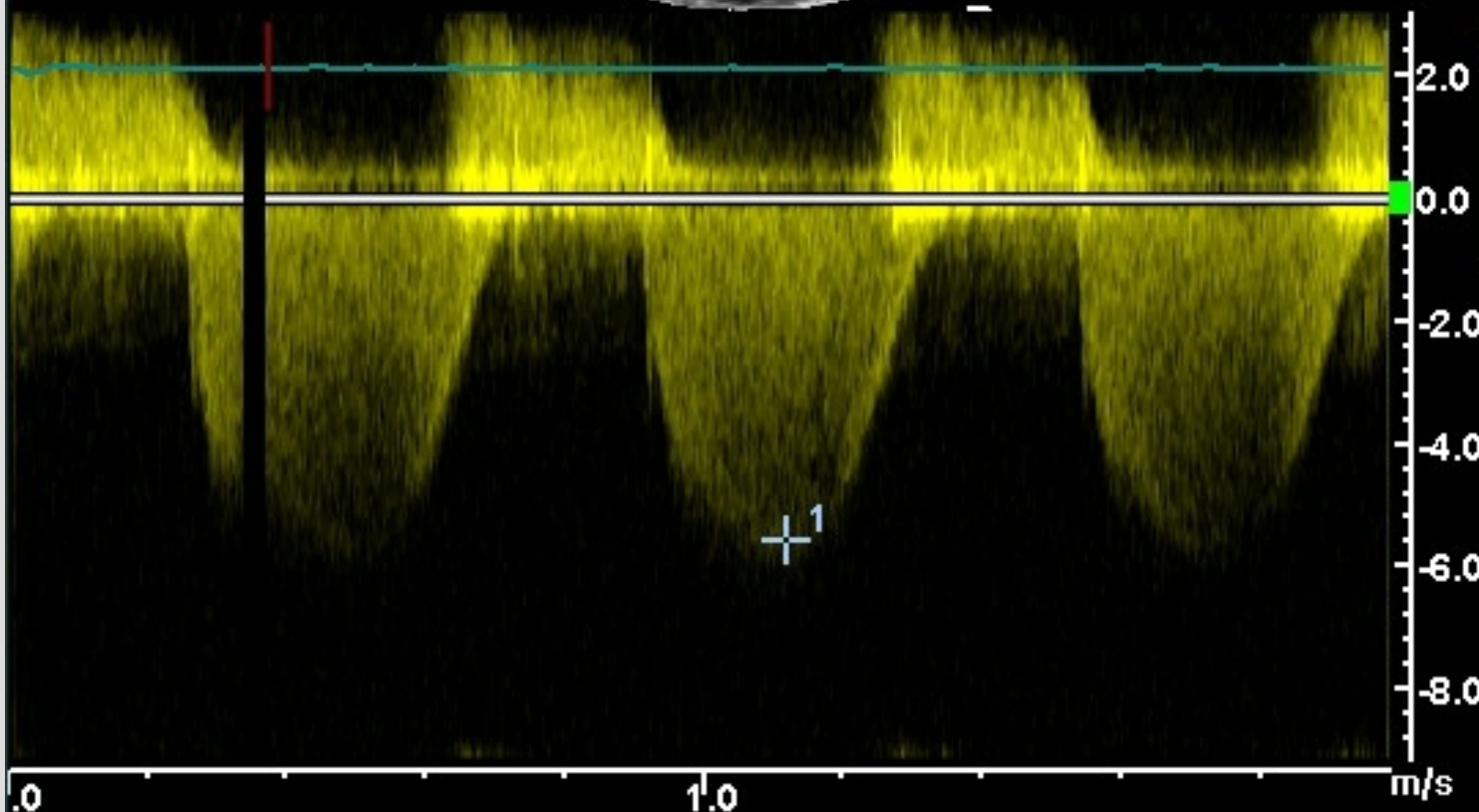
1 V = 5.58 m/s
PG= 124.6 mmHg



2D 15 cm
14 f/s
f: 1.7 MHz H
DR: 65 dB
R: 4.0 G: 59

CFM G: 58
f: 2.2 MHz
PRF:4000Hz
LVR:2.9cm/s

CW G: 59.5
f: 1.82 MHz
VEL:12.2m/s
LVR:27 cm/s
Ø:0°



P:0dB
TIs:0.8
MI:0.1

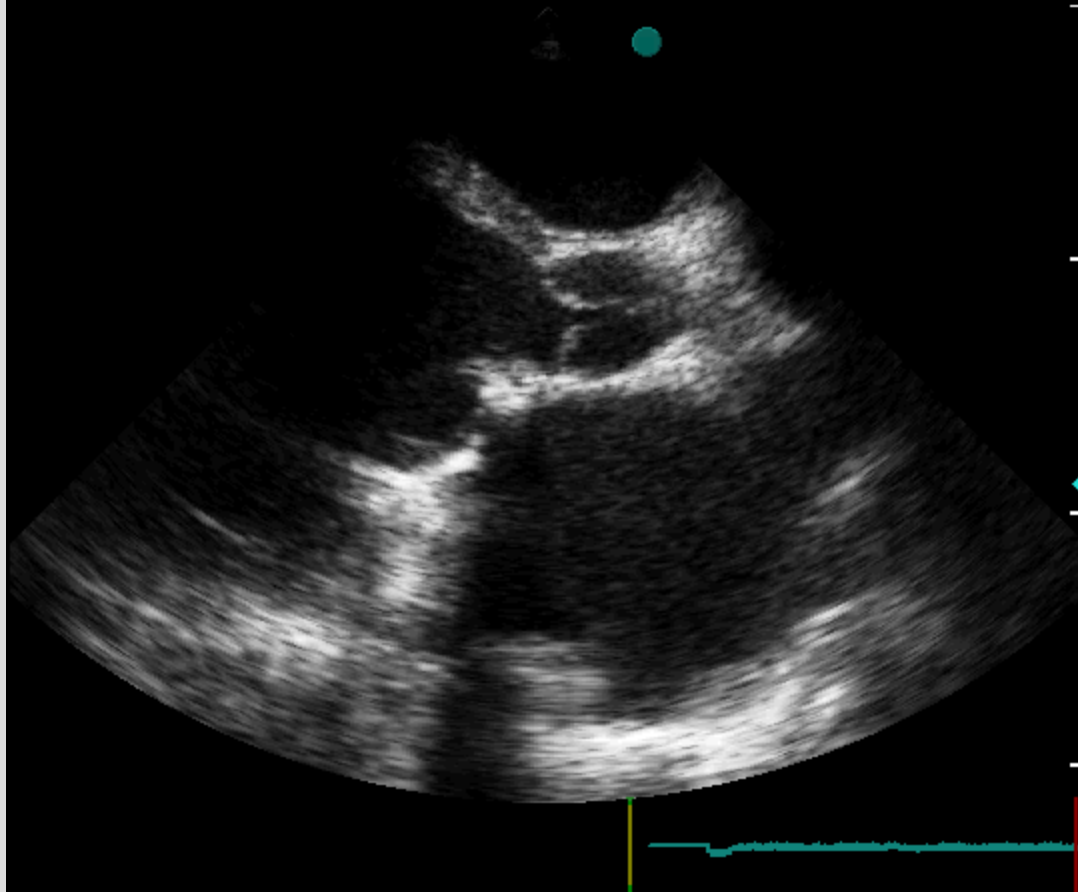


Salam Centre for Cardiac Surgery

ID:22596

CardiacV
3S

3:43:58 pm
25-Oct-11



2D 16 cm
31 f/s
f: 1.7 MHz H
DR: 65 dB
R: 2.0 G: 54

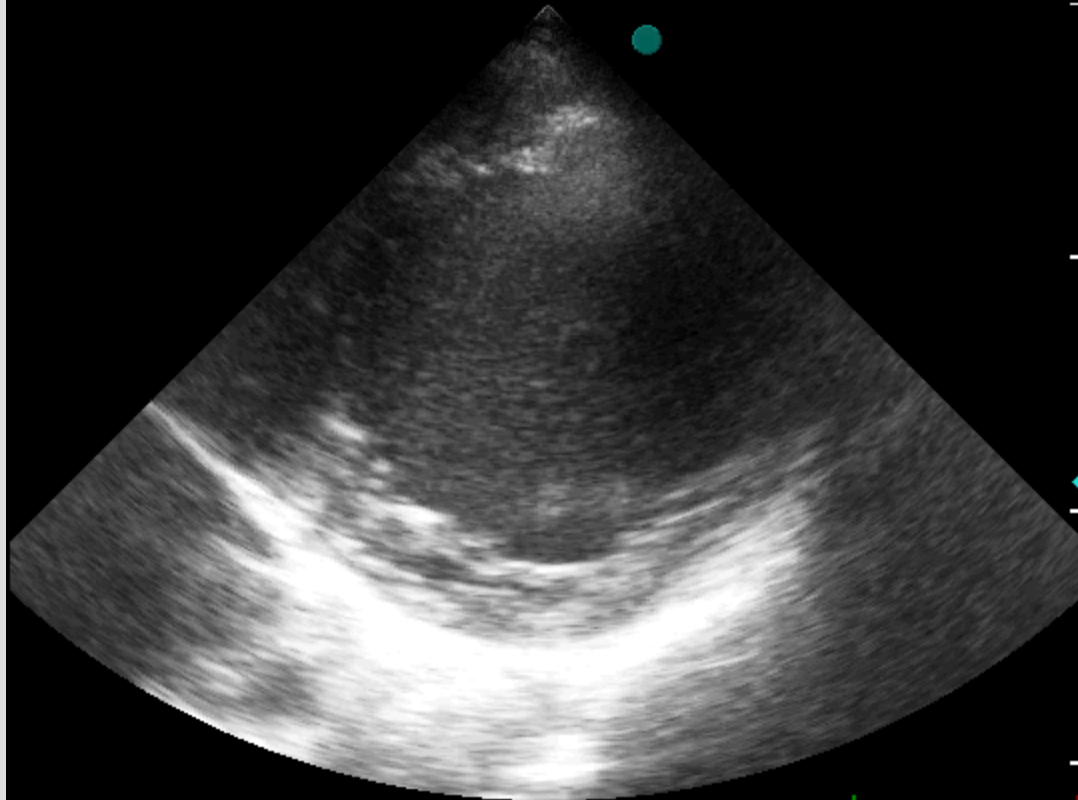
P:0dB
TIs:0.9
MI:1.2

Salam Centre for Cardiac Surgery

ID:22596

CardiacV
3S

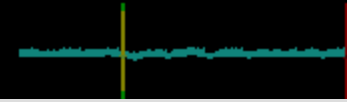
3:44:58 pm
25-Oct-11



2D 16 cm
31 f/s
f: 1.7 MHz H
DR: 65 dB
R: 2.0 G: 70

P:0dB
TIs:0.9
MI:1.2

HR: 72 BPM

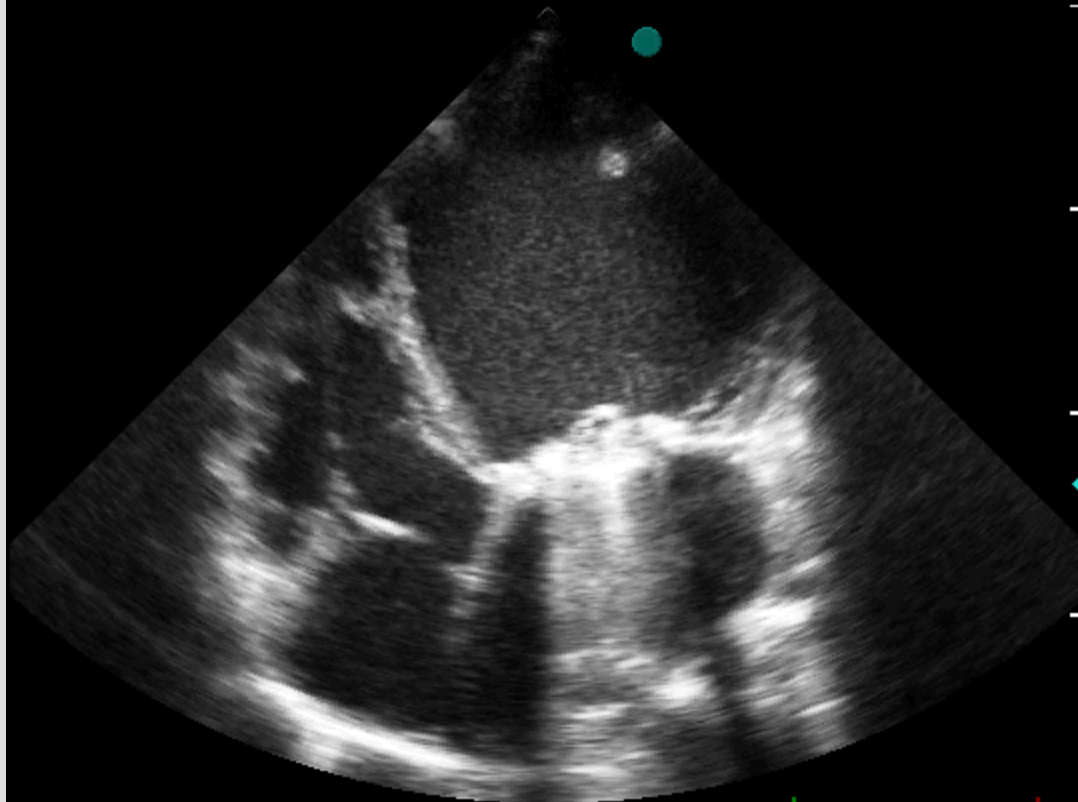


Salam Centre for Cardiac Surgery

ID:22596

CardiacV
3S

3:47:11 pm
25-Oct-11

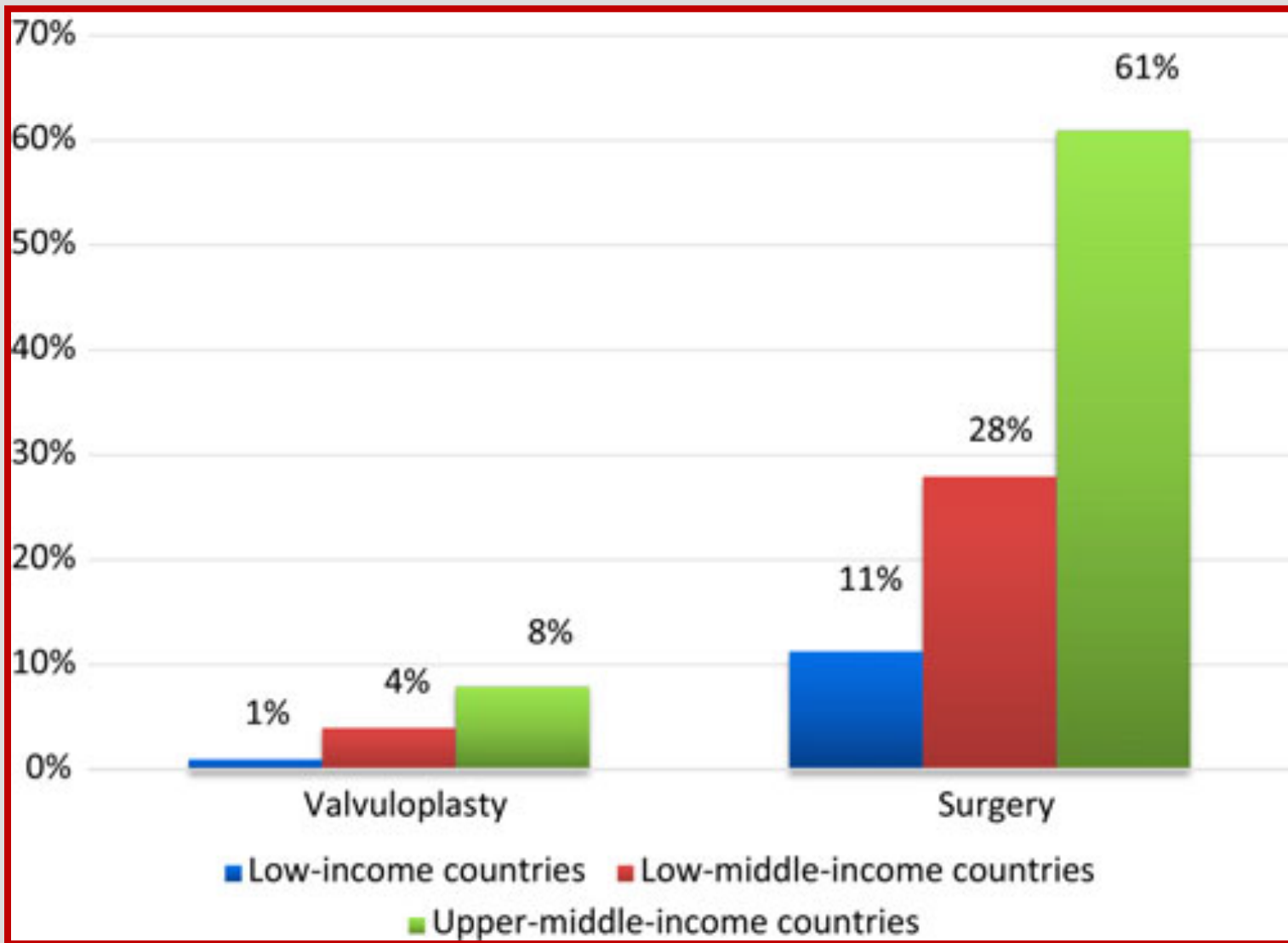


2D 20 cm
31 f/s
f: 1.7 MHz H
DR: 65 dB
R: 2.0 G: 64

P:0dB
TIs:1.0
MI:1.1

HR: 67 BPM





Emergency

Italian NGO founded in 1994

Provides high quality and free of charge health care to the victims of landmines, war and poverty

Emergency promotes a culture of solidarity, peace and respect for human rights



EMERGENCY

Philosophy and principles

Equality

Quality

Social Responsibility



The Salam Centre for Cardiac Surgery

Khartoum, Sudan



2 OutPatients Departments



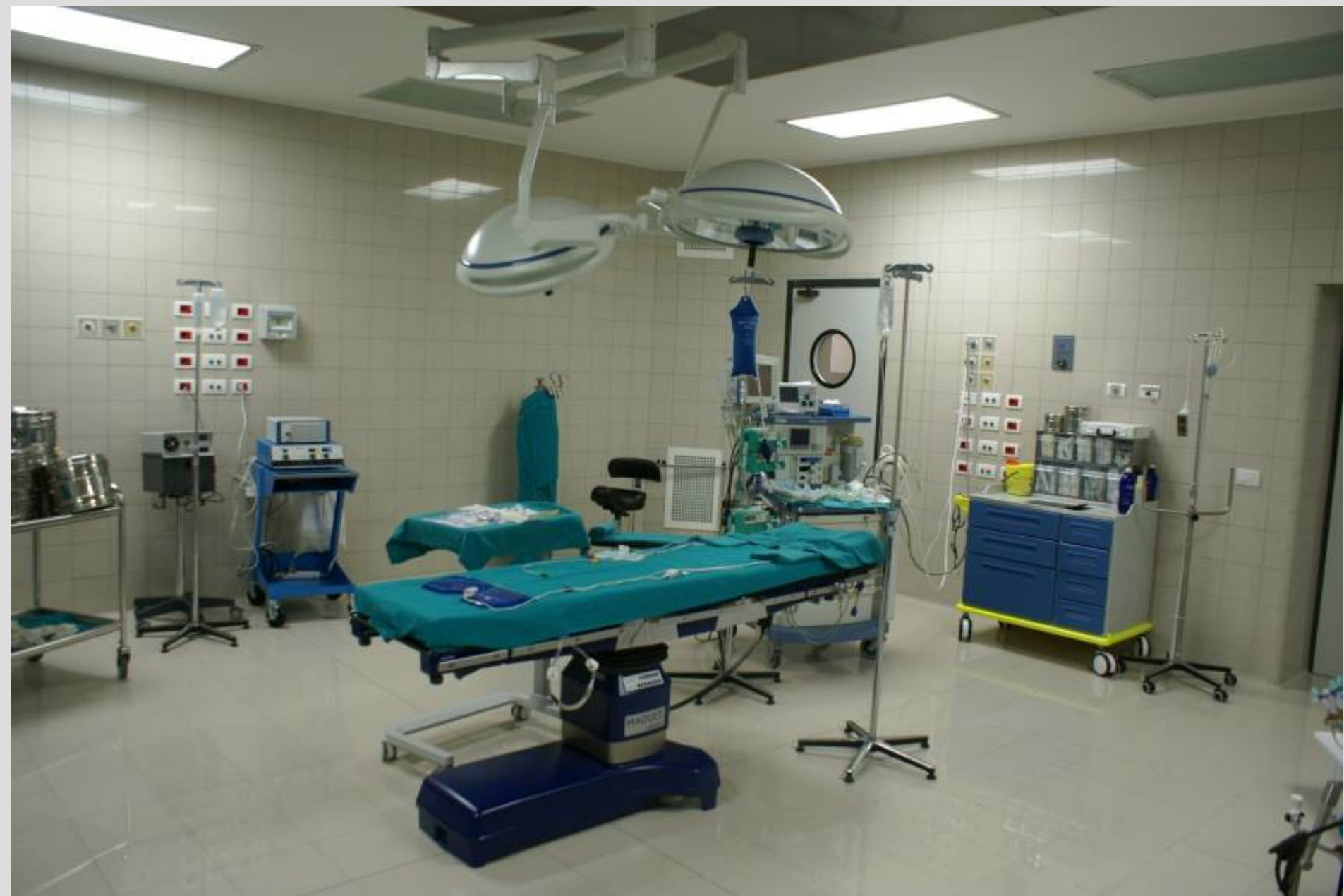
36-beds

Ward





3 Operating Theatres



15-beds

Intensive Care Unit



12-beds

Sub Intensive Care Unit





Main focus is ensure continuous training

to local medical staff

Sudan, bordering countries and beyond





THE SALAM CENTRE FOR CARDIAC SURGERY

مركز السلام لجراحة القلب

The Salam Centre is run and managed by the Italian based humanitarian organisation EMERGENCY. Since April 2007, the Centre provides high standard, free of charge paediatric and adult cardiac surgery.

Clinical Activities

Most patients come by themselves to the *Salam* Centre, without been referred by physicians or medical facilities. After an initial triage, patients with known or potential cardiac problems receive further cardiac investigations.

From April 2007 to February 2014:

| | |
|----------------------------------|--------|
| Patients triaged | 50,976 |
| Cardiological examinations | 43,555 |
| Number of hospital admissions * | 7,920 |
| Number of patients admitted | 6,289 |
| Number of surgical operations ** | 5,395 |
| Number of patients operated | 5,103 |
| Cath Lab procedures | 1,235 |



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Surgery

From April 2007 to February 2014, **5,103 patients** underwent surgical operations at the *Salam* Centre for Cardiac Surgery.

Patients' age ranged from 13 days to 65 years (mean age 25.9 ± 14.7).

PATIENTS' DISTRIBUTION BY TYPE OF DISEASE

| | |
|--|----------------|
| Valvular Heart Diseases | 3,871 (75.86%) |
| Congenital Heart Diseases | 1,015 (19.89%) |
| Ischemic Heart Diseases | 126 (2.47%) |
| Disease of the Aortic Valve and Ascending Aorta | 45 (0.88%) |
| Disease of Ascending Aorta, Aortic and Mitral Valve | 6 (0.12%) |
| Disease of the Aortic Valve and Ascending Aorta and CABG | 1 (0.02%) |
| Ascending Aorta | 3 (0.06%) |
| Other | 36 (0.70%) |

Operative Mortality

30-days mortality rate

154 deaths

3.02 %



Cause of Death

| | |
|-------------------------------------|----|
| <i>LCO Syndrome</i> | 65 |
| <i>Pulmonary Hypertension</i> | 11 |
| <i>Ischemic/Haemorrhagic stroke</i> | 6 |
| <i>MOF</i> | 36 |
| <i>Haemorrhagic shock</i> | 7 |
| <i>Technical failure</i> | 5 |
| <i>Ventricular Arrhythmia</i> | 5 |
| <i>Myocardial Infarction</i> | 2 |
| <i>Thromboembolism</i> | 1 |
| <i>ARDS</i> | 2 |

The challenges

- The physician practicing in Africa is commonly faced with certain issues in the management of CV disease that his counterpart elsewhere rarely encounters (*taylored management and skill mix of the health workforce*)

Cost / opportunity and efficacy ratio

- Extend the benefits to complex cases?
- Work on high percentage of simpler cases?

Conclusive remarks

Emergency ONG gave a *quantifiable voice* to the growing cohort of individuals, primarily clinicians, working in low and middle income countries, frustrated by the constant flow of young people with end-stage HF presenting in settings with no capacity to either offer high-end tertiary care or to administer the secondary preventive approaches to stem the tide of new cases.



GRAZIE

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