



**Welcome to Central  
ClinicoPathological Seminar**  
Department of Cardiology  
Dhaka Medical College & Hospital

# A 25 -year- old male with fever and shortness of breath

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MD phase-B Resident

Department of Cardiology

Dhaka Medical College and Hospital

# Particulars of the patient

- Name: Mr. 'x'
- Age: 25 years
- Gender: Male
- Occupation: CNG Driver
- Address :Feni Sadar ,Feni
- Religion: Islam
- Marital status: unmarried
- Date of Admission:16.10.2024 through emergency in medicine department  
then transferred to department of Cardiology on 23.10.2024
- Date of examination :23.10.2024

# Presenting Complaints

1. Fever for 9 months
2. Shortness of breath for 10 days

## History of present illness

According to the statement of the patient, he was reasonably well 9 months back. Then he developed fever which was low grade, continuous, highest recorded temperature was 101 °F . Fever subsided by taking antipyretic .Fever was not associated with chills, rigor, night sweat . There was no evening rise of temperature.

## History of present illness (cont.)

At that time he was working in Oman and he was treated in a hospital there but no diagnosis was made and he could not show the documents of treatment. However his fever didn't subside and he returned to Bangladesh after 2 months.

## History of present illness (cont.)

He also complained shortness of breath for last 10 days which was insidious in onset, gradually progressing. It was initially after moderate to severe exertion but later it was on mild exertion. SOB had no diurnal variation and was not associated with chest pain, palpitation, cough, not increased after exposure to cold or dust

## History of present illness (cont.)

SOB was occasionally increased on lying flat and had occasional history of waking up from sleep at night. He gave no history of swelling of face, scanty micturition or red colour urine. On query he gave history of significant weight loss around 7kg over 9 months which was unintentional.

## History of present illness (cont.)

He had no history of increased thirst, increased frequency of micturition ,excessive eating, excessive sweating, loose motion or heat intolerance . He had no history of loss of consciousness ,pruritus, no childhood history of fever with sore throat and joint pain.

# History of present illness

He gave no history of dental caries or recent dental procedure, no history of blood transfusion , contact with farm animals or consuming unpasteurized milk . He had no previous history of TB or contact with TB patients . He gave no history of skin rash, oral ulcer, photosensitivity, nasal bleeding or bleeding from any sites of body. His bowel and bladder habit were normal.

## Past medical history

He was diagnosed with Atrial Septal Defect (ASD) while investigating before going abroad. He was asymptomatic at that time and had undergone ASD device closure 3 years back in NICVD . He gave history of inadequate intake of prophylaxis after device closure.

# Treatment history

- He visited several hospitals in Bangladesh where no definite diagnosis was made and he received different antibiotics like levofloxacin, doxycycline, ceftriaxone. He also received montelukast, Iron supplements, and multivitamins.

# Allergy history

No history of allergy or drug hypersensitivity

# Personal history

- He is non-smoker, non-alcoholic
- No history of I/V drug use, or use of recreational drugs
- No history of unsafe sexual exposure

# Family history

- He has 4 brothers and 2 sisters. He is the first issue of nonconsanguineous parents. All are in good health.
- His father and mother are alive .His mother is hypertensive.

# Socioeconomic history

- He lives in a semi pacca house, drinks arsenic free tubewell water, uses sanitary latrine
- His monthly income is 20,000 taka.

# Immunization history

- He was immunized according to EPI schedule. He received 3 doses of covid vaccine
- No history of hepatitis B, influenza and pneumococcal vaccination

# Travel history

He travelled Oman 11 months back and stayed there for 4 months

# Examination findings:



# General examination

- Appearance: **Ill looking**
- Body built :Average
- Co-operation: Co-operative
- Decubitus : On choice during examination
- Nutritional status: Normal

Height:165 cm, weight:57 kg

BMI: 20.9 kg/m<sup>2</sup>

# General examination (cont.)

- Anemia: **Present**
- Jaundice: Absent
- Cyanosis :Absent
- Clubbing: Absent
- Leukonychia: Absent
- Koilonychia: Absent

## General examination (cont.)

- Lymph nodes: **Two lymph nodes were palpable in the right posterior cervical chain, the largest one was (3 x 2 ) cm in size, discrete, firm in consistency, non tender, not fixed with underlying structure or overlying skin, had no discharging sinus.**
- No other accessible lymph node was palpable

# General examination (cont.)

- Thyromegaly: Absent
- Dehydration : Absent
- Edema : **Bilateral pitting ankle oedema was present**
- Skin condition and hair distribution : normal
- JVP : not raised

# General examination (cont.)

- Pulse : **108 b/min, regular in rhythm**
- Blood pressure :110/80 mmHg in sitting position , no postural drop
- Temperature: **100 °F**
- Respiratory rate: **20 breaths/min**

## General examination (cont.)

- SPO2 in room air : 98 % in room air
- Bedside dipstick test for urinary protein : **positive (+)**

# Cardiovascular system examination

- Pulse : **108 bpm**, regular in rhythm, normal in volume and character, no radio-radial or radio-femoral delay, condition of the vessel wall was normal. All the peripheral pulses were bilaterally symmetrically palpable.
- BP:110/80 mmHg in right arm in sitting posture without a postural drop.
- JVP: Not raised.

# Cardiovascular system examination (cont.)

- **Precordium :**

## **Inspection:**

No visible apical impulse, scar mark or deformity

## **Palpation:**

Apex beat was located in left 5th ICS, medial to the midclavicular line.

Normal in character.

There was no thrill, palpable p2, left parasternal heave or epigastric pulsation

# Cardiovascular system examination (cont.)

- **Auscultation:**

First and second heart sounds were normal. No added sound

Lung base auscultation : **bilateral basal crepitation was present.**

# Respiratory system examination

- **Inspection:** No chest deformity, chest movement was normal and symmetrical , no use of accessory muscle of respiration.
- **Palpation :** The trachea was central, Apex beat was located in the left 5<sup>th</sup> intercostal space, medial to the midclavicular line. Chest expansion was normal and symmetrical.

# Respiratory system examination

- **Percussion** : Resonant. Upper border of liver dullness was in the right 5<sup>th</sup> intercostal space
- **Auscultation** : Breath sound was vesicular with normal vocal resonance. **Bilateral basal crepitation was present.**

# Alimentary system and Abdomen examination

- **Lips, gums, teeth** : Normal
- **Tongue and oral cavity** : Normal
- **Abdomen:**
- **Inspection:** Abdomen was normal in size and shape. Flanks were not full. Umbilicus was centrally placed and inverted. There was no engorged vein, visible peristalsis ,scar mark.

# Alimentary system and Abdomen examination

- **Palpation :**
- **Liver was enlarged, 3 cm from right costal margin in the right mid-clavicular line, firm in consistency, tender, smooth surface, upper border of liver dullness was in the right 5<sup>th</sup> intercostal space . Liver span was 18 cm in right mid clavicular line.**

# Alimentary system and Abdomen examination (Cont.)

- **Spleen was enlarged, 3 cm from left costal margin in the anterior axillary line towards the right iliac fossa along its long axis, firm in consistency, surface smooth, non tender.**
- Both kidneys were not ballotable, Urinary bladder was not palpable, both testes were in normal consistency and size

# Alimentary system and Abdomen examination (cont.)

- **Percussion:** Shifting dullness was absent
- **Auscultation:** No hepatic or renal bruit, no splenic rub was present. Bowel sound was present.

# Nervous system examination

- Higher psychic function : Normal
- Cranial nerves : intact
- Fundoscopy : Normal
- Sensory system : Normal
- Motor system : Normal
- Cerebellar Function : Normal

# Other system examination

Examination of other system revealed no abnormality

# Salient feature

Mr 'x' 25- year-old, unmarried, Muslim, normotensive, nondiabetic hailing from Feni sadar, Feni was admitted through emergency in medicine department on 16.10.2024 with complaints of fever for 9 months and shortness of breath for 10 days , later transferred to cardiology department on 23.10.24 .

## Salient feature(cont.)

Fever was low grade, continuous, highest recorded temperature was 101 °F which subsided by taking antipyretic.

Fever was not associated with chills, rigor, night sweat or evening rise of temperature.

## Salient feature(cont.)

He was dyspneic for last 10 days which was of insidious onset, gradually progressive, initially was in NYHA class II ,later it became NYHA class III. Dyspnea was associated with occasional orthopnea and PND but not associated with diurnal variation, chest pain ,palpitation or cough. On query he gave history of significant unintentional weight loss of 7 kg over 9 months.

## Salient feature (cont.)

He had no past history of TB or contact with TB patients, no I/V drug use, blood transfusion or unsafe sexual exposure. He had ASD device closure 3 years back in NICVD. He visited several hospitals both in Oman and Bangladesh where he received several antibiotics and other symptomatic managements.

## Salient feature(cont.)

He did not give any history of rheumatic fever, recent dental procedure, contact with farm animal or consumption of unpasteurized milk.

## Salient feature (cont.)

On general examination he was anemic with bilateral pitting ankle edema. There were two discrete palpable lymph nodes in the right posterior cervical chain , largest one measuring (3x2 ) cm in size, firm in consistency, non tender, not fixed with underlying structure or overlying skin, no discharging sinus.

## Salient feature (cont.)

Pulse was 108 b/min, Blood pressure was 110/80 mmHg without postural drop. Temperature was 100 °F . Respiratory rate was 20 breaths/min ,bed side urine test was positive for proteinuria.

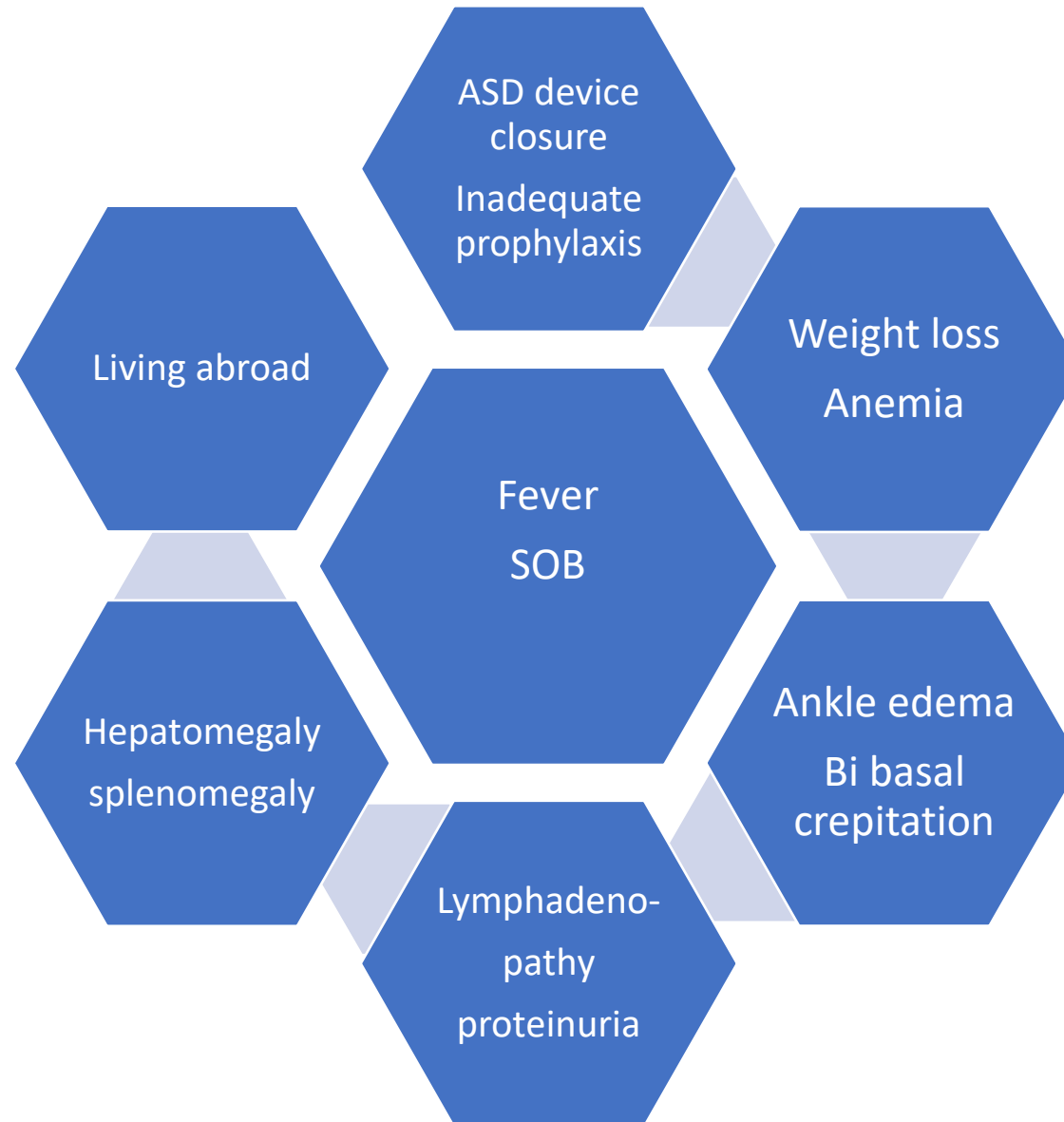
## Salient feature (cont.)

On systemic examination, there was fine crepitation on both lung bases. There was hepatomegaly (3cm) which was firm in consistency, tender, smooth surface, Upper border of liver dullness was in rt 5<sup>th</sup> intercostal space.

There was splenomegaly (3 cm) which was firm in consistency, surface smooth, non tender.

# Problem list from audience

# Problem list





# Provisional Diagnosis

Infective endocarditis with Heart failure with NYHA class III  
with Status post ASD device closure

# Differential diagnosis

- Disseminated Tuberculosis and heart failure with NYHA class III with status post ASD device closure
- Lymphoma and heart failure with NYHA class III with S/P ASD device closure
- HIV infection and heart failure with NYHA class III with S/P ASD device closure

# Investigation



Inv. name	Date-17/10/2024	Date-23/10/2024
Hb	<b>8.5 g/dl</b>	<b>8.2 g/dl</b>
RBC	3.77 (10 <sup>6</sup> u/l)	3.71 (10 <sup>12</sup> /l)
WBC	5.83 ( 10 <sup>6</sup> u/l)	4.81 (10 <sup>3</sup> /mm <sup>3</sup> )
PLT	170 (10 <sup>3</sup> u/l)	223 (10 <sup>3</sup> /mm <sup>3</sup> )
Neutrophil	65%	64%
Lymphocyte	30.5%	30.4%
ESR		<b>92 mm in 1<sup>st</sup> h</b>

Inv name	Date	Result
PBF	17/10/24	<b>Microcytic hypochromic anemia</b>
CRP	17/10/24	<b>26 mg/l</b>
Procalcitonin	24/10/24	<b>.28 ng/ml</b>
Troponin I	17/10/24	<.01ng/ml
S creatinine	22/10/24	1.01 mg/dl
ICT for Kala-azar IgG, IgM	17/10/24	negative
ICT for malaria	19/10/24	negative

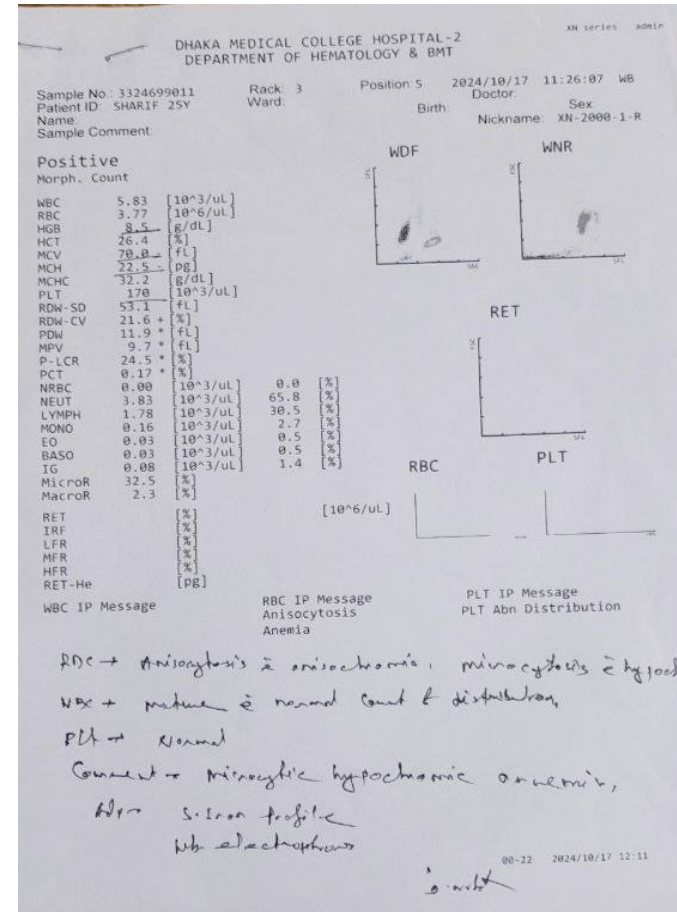
Inv. Name	Date	Result
Serum Iron	27/10/24	114 mcg/dl
Serum Ferritin	27/10/24	299 ng/ml
TIBC	27/10/24	298 mcg/dl
Transferrin Saturation	27/10/24	38%

Inv name	Date	Result
S. Albumin	18/10/24	<b>32 g/l</b>
S. Bilirubin	18/10/24	0.9 mg/dl
SGPT	18/10/24	58 U/L
Prothrombin Time	18/10/24	12 sec.
Urine R/M/E	29/10/24	<b>Protein +</b> ,sugar nil ,No RBC
NT Pro-BNP	29/10/24	<b>1200 pg/ml</b>
ANA	29/10/24	Negative


Inv	Date	Result
RA	29/10/24	Negative
Antiphospholipid Ab	29/10/24	Negative
Mantoux test	29/10/24	Negative
P ANCA ,C ANCA	29/10/24	Negative
C3 ,C4	29/10/24	Normal

Inv. name	Date	Result
HBsAg, Anti HCV, VDRL	23/10/24	negative
Anti HIV 1&2	23/10/24	negative
Anti HBc Total	19/11/24	negative

- PBF shows microcytic hypochromic anemia



- First sample for blood culture was negative

 **বঙ্গবন্ধু শেখ মুজিব মেডিক্যাল বিশ্ববিদ্যালয়**  
**Bangabandhu Sheikh Mujib Medical University**  
**DEPARTMENT OF MICROBIOLOGY & IMMUNOLOGY**

Order No : 667  
Patient Name : SHARIF  
Age / Gender : 25Y / Male  
Collected : 21/10/24 07:05 PM  
Report No : 12410381699  
LAB ID : 12410354900

MRN : H12410342558  
Ref. Doctor: SELF  
Received : 21/10/24 07:05 PM  
Reported : 23/10/24 10:13 AM  
BED No :  
Status : FINAL

**CULTURE AND SENSITIVITY REPORT**

Specimen : Blood  
Test Name : Blood Culture and Sensitivity (Conventional Method)

Incubation Temp : 37°C  
Incubation Time : 48 Hours  
Result : No growth of Bacteria.

**Comments:**  
Final Report will be given after 7 days of sample collection.

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Md. Shahim Rahman  
Medical Technologist

Dr. S M Ali Ahmed  
MBBS, MD,  
Assistant Professor

Dr. Rehana Razzak Khan  
MBBS, FCPS  
Assistant Professor

Printed by : RAFIQ

- Second sample for blood culture taken 12 hour apart was also negative

 **বঙ্গবন্ধু শেখ মুজিব মেডিক্যাল বিশ্ববিদ্যালয়**  
**Bangabandhu Sheikh Mujib Medical University**  
**DEPARTMENT OF MICROBIOLOGY & IMMUNOLOGY**

Order No : 1272  
Patient Name : SHARIF  
Age / Gender : 25Y / Male  
Collected : 23/10/24 07:54 PM  
Report No : 12410384311  
LAB ID : 12410357455

MRN : H12410345018  
Ref. Doctor: SELF  
Received : 23/10/24 07:54 PM  
Reported : 26/10/24 09:39 AM  
BED No :  
Status : FINAL

**Blood Culture By BACTEC FX40/BACT ALERT 3D Fully Automated System**

Specimen : Blood  
Test Name : Blood Culture and Sensitivity (Automated method with MIC)  
Incubation Temp : 37°C  
Incubation Time : 48 Hours  
Result : No growth of Bacteria. ✓

**Comments:**  
Final Report will be given after 7 days of sample collection.




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Md. Shahinur Rahman  
Medical Technologist

Dr. Sanjida Khondakar Setu  
MBBS, MD.

Dr. Abu Nasir Ibne Sattar  
MBBS, MD (Microbiology)

- Blood culture for fungal pathogen was negative


**icddr,b**     
Accreditation No. 4091/54 **Clinical Microbiology and Immunology**

Md. Sarif		Specimen information			
Age	25Y 0M 0D	Specimen ID	Specimen Type	Collection Date/Time	Receiving Date/Time
Sex	Male	W240112825	Blood (FAN)	16-Nov-2024 16:42	16-Nov-2024 17:42
Registration ID	P-0785140				
Bill ID	SRA24111600498				
Collection site	Mohakhali Collection Centre				
Patient Type	Payment				
Referred by	Dhaka Medical College Hospital				
Requested tests	Fungus CS from Blood				

**Results**  
*No fungal pathogen isolated*  
In aerobic & microaerophilic condition at 35 degree Celsius

**Comments:**  
If positive within twenty one days, an updated finding will be informed and reported.

- Blood for Febrile antigen titer was within normal range


**বঙ্গবন্ধু শেখ মুজিব মেডিক্যাল বিশ্ববিদ্যালয়**  
**Bangabandhu Sheikh Mujib Medical University**  
**DEPARTMENT OF MICROBIOLOGY & IMMUNOLOGY**


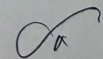
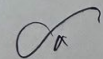
**IMMUNOLOGICAL REPORT**

Order No : 666  
 Patient Name : SHARIF  
 Age / Gender : 25Y / Male  
 Collected : 21/10/24 06:55 PM  
 Report No : 12410380529  
 LAB ID : 12410354871

MRN : H12410342530  
 Ref. Doctor : SELF  
 Received : 21/10/24 06:55 PM  
 Reported : 22/10/24 11:45 AM  
 BED No :  
 Status : FINAL

Sample : Blood  
 Tests : Febrile Antigen

Test	Result	Unit	Bio. Ref. Interval
Widal Test:			
TO	<1:80		1:80
TH	<1:80		1:80
AO	<1:80		1:80
AH	<1:80		1:80
BO	<1:80		1:80
BH	<1:80		1:80
Rickettsial antibody			
OX2	<1:80		1:80
OX-19	<1:80		1:80
OX-K	<1:80		1:80
Brucella abortus antibody	<1:80		1:80
Brucella malitensis antibody	<1:80		1:80

Md. Abdus Salam  
 Medical Technologist

Dr. Ismet Niger  
 MBBS, FCPS  
 Associate Professor

Dr. S M Ali Ahmed  
 MBBS, MD  
 Assistant Professor

1145

- Lymph node biopsy showed chronic nonspecific lymphadenitis

**DEPARTMENT OF PATHOLOGY  
DHAKA MEDICAL COLLEGE  
DHAKA**

Lab No. W/B :	8985	<b>BIOPSY REPORT</b>
Name :	Shorif	
Age & Sex :	24 Yrs, Male	
Date Accessioned :	19.11.2024	
Report Issued :	26.11.2024	
Ref. :	DMCH	

**CLINICAL INFORMATION:**  
**SPECIMEN:** Lymph node.

**GROSS DESCRIPTION:**  
Received in formalin with name of the patient and hospital ID number is single lymph node. It measures about 1.0 x 0.5 cm. The cut surface is unremarkable. Embedded one block.

**MICROSCOPIC DESCRIPTION:**  
Sections show lymph node. It reveals follicular hyperplasia with lymphocytes of various stages of maturation, sinus histiocytes, macrophages and occasional plasma cells.  
No granuloma or malignancy is seen.

**Diagnosis :** Lymph node (biopsy) : Chronic nonspecific lymphadenitis.

Dr. Rownak.  
Dr. Shobnom.

*Dr. Zubaida Batroon Khan*  
MBBS, BCS (Health), MD (Pathology)  
Associate Professor of Pathology  
Department of Pathology  
Dhaka Medical College, Dhaka.

- USG of whole abdomen showed hepatosplenomegaly

**DHAKA MEDICAL COLLEGE & HOSPITAL**

**RADIOLOGY & IMAGING**  
PHONE: 8617371, 8617418 & 500121-6  
EXT-491, 428,433 & 388

**USG REPORT**

PATIENT NAME :	Sharif	AGE :	25 YRS
SEX :	M	REG DATE :	20.10.24
REFD. BY :	DMCH		

THANK YOU FOR REFERRING THE PATIENT

**USG OF WHOLE ABDOMEN**

*Enlarged (18 cm)*  
Liver : Liver is ~~normal in size~~ *enlarged (18 cm)*. Parenchymal echogenicity appears homogeneous. Parenchymal echogenicity is not increased. No focal lesion is seen. Portal vein caliber and hepatic veins channels are within normal limit.

Gall bladder : Gall bladder is normal in size, shape with normal wall thickness. Lumen is clear.

Biliary channels : Intra & extrahepatic biliary trees are not dilated. CBD is normal in caliber.

Pancreas : Normal in size, shape in outline with uniform echotexture. MPD is not dilated.

*Enlarged (15.7 cm)*  
Spleen : ~~Normal in size~~ *enlarged (15.7 cm)* with uniform echotexture. No focal lesion is seen.

Kidneys : Normal in size, shape and position. Cortical echogenicity is normal. Cortico-medullary differentiation is maintained in both kidneys. Pelvicalyceal systems are not dilated on both kidneys. No calculus seen.

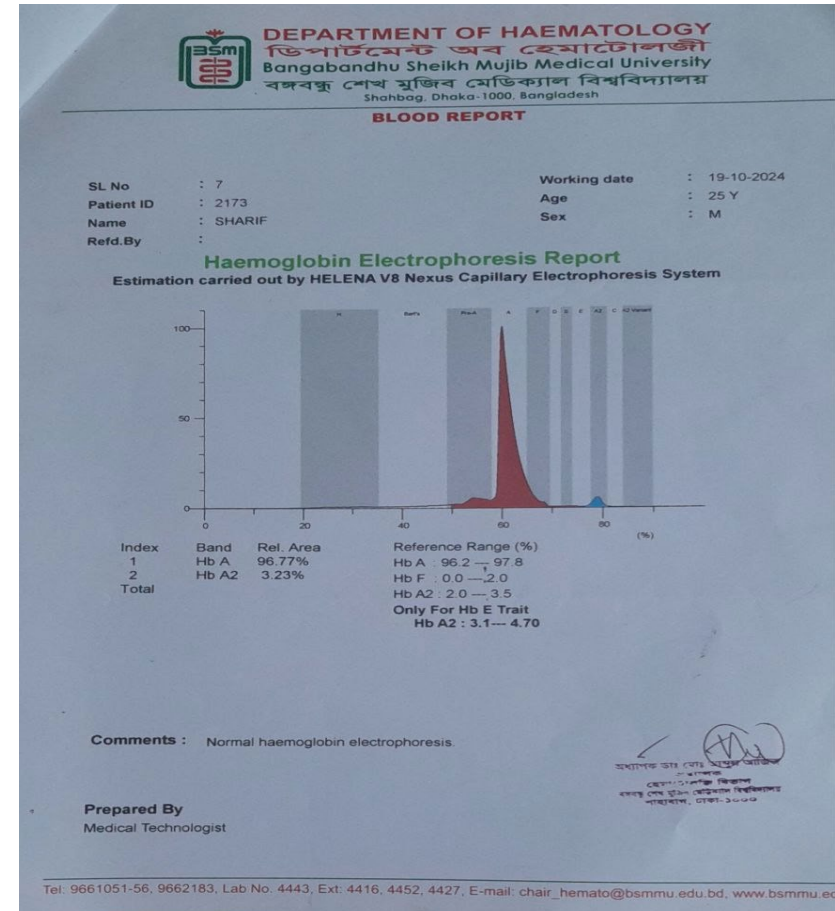
Urinary bladder : Well filled. Wall thickness is within normal limit and regular in outline. No intravesical lesion is noted.

Prostate/Uterus : *Normal in size & echotexture*

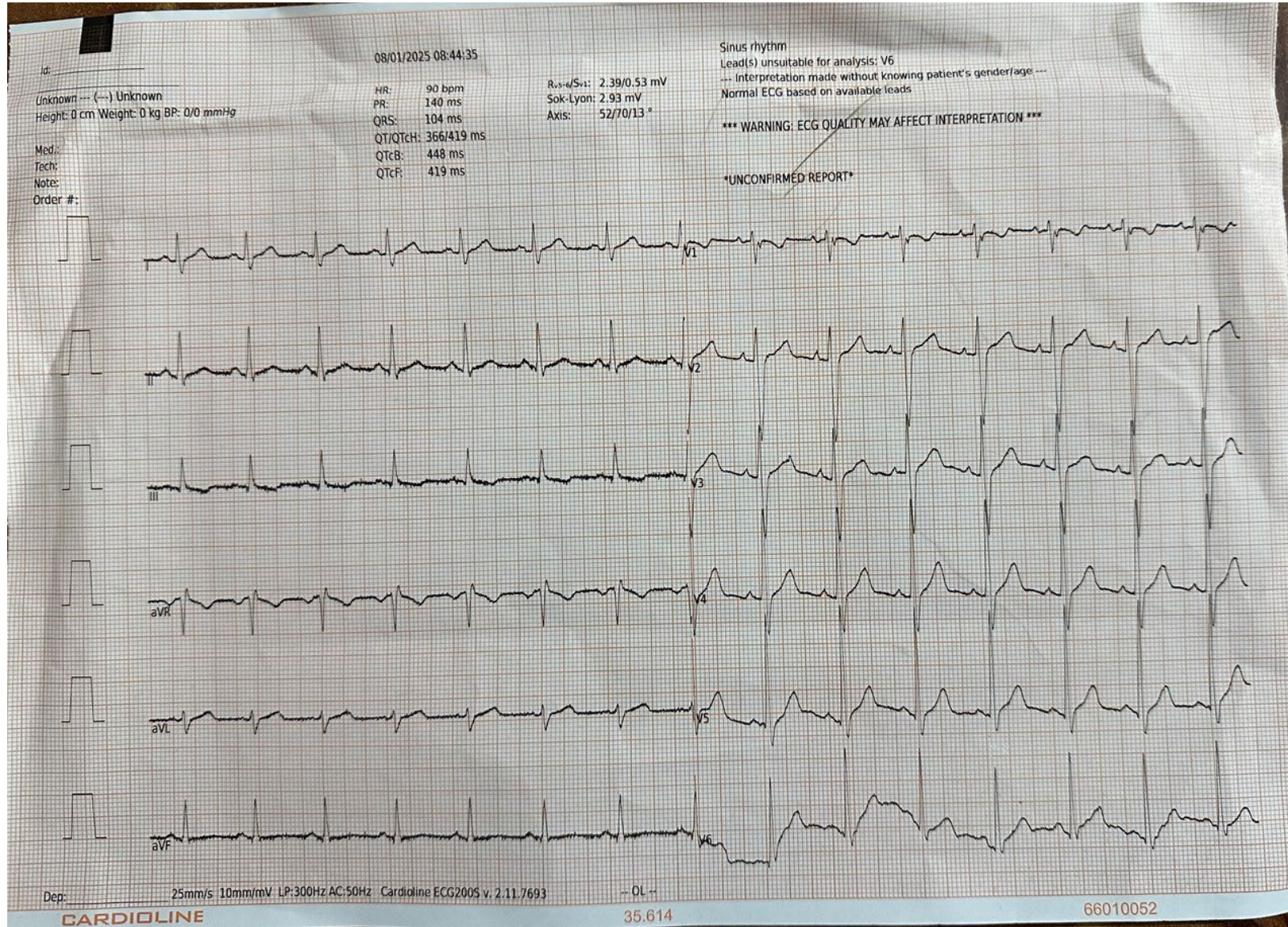
comment :- *Hepatosplenomegaly*

- Haemoglobin

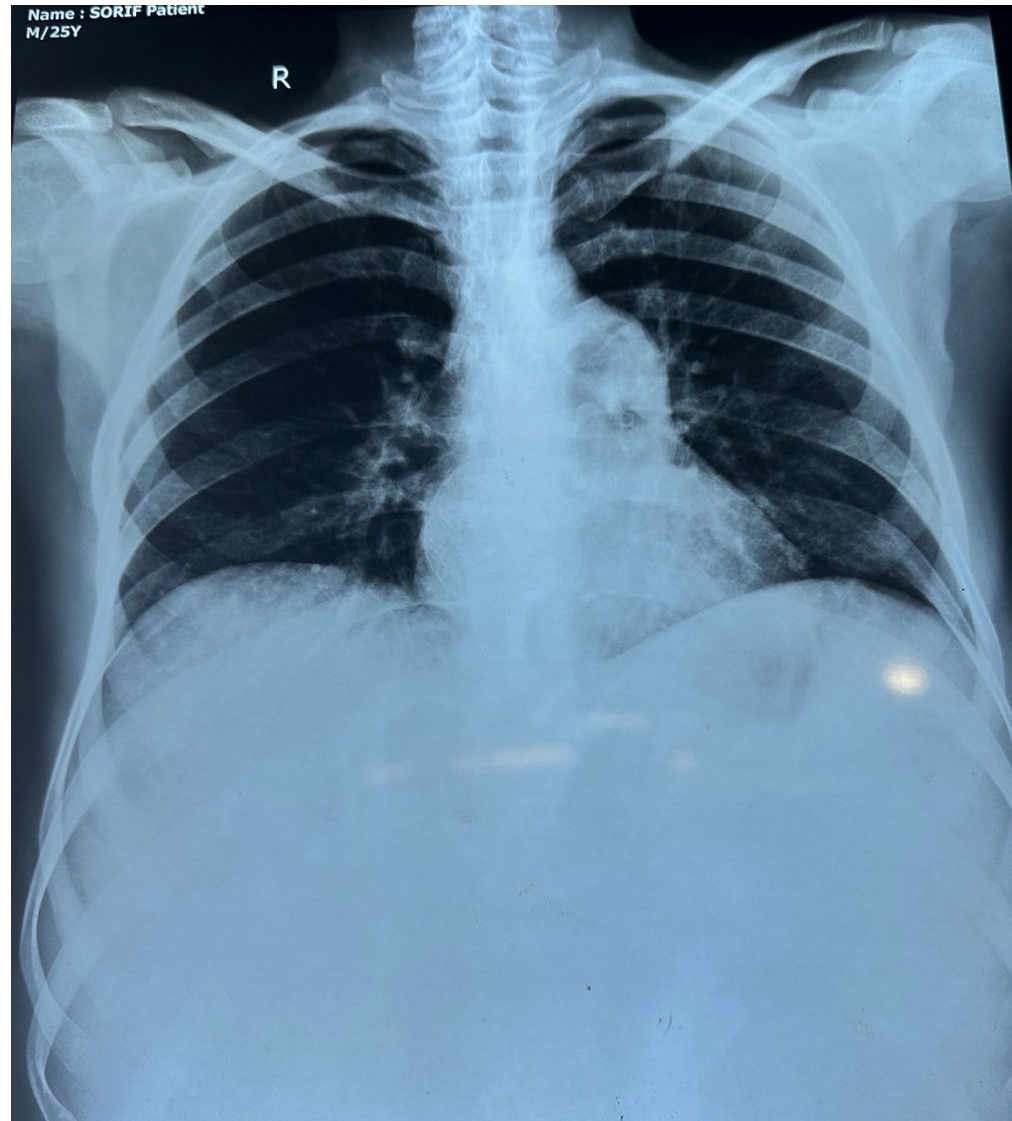
Electrophoresis was normal



# ECG



# CXR



# Trans-thoracic Echo (20/10/2024)

ASD closure device in situ

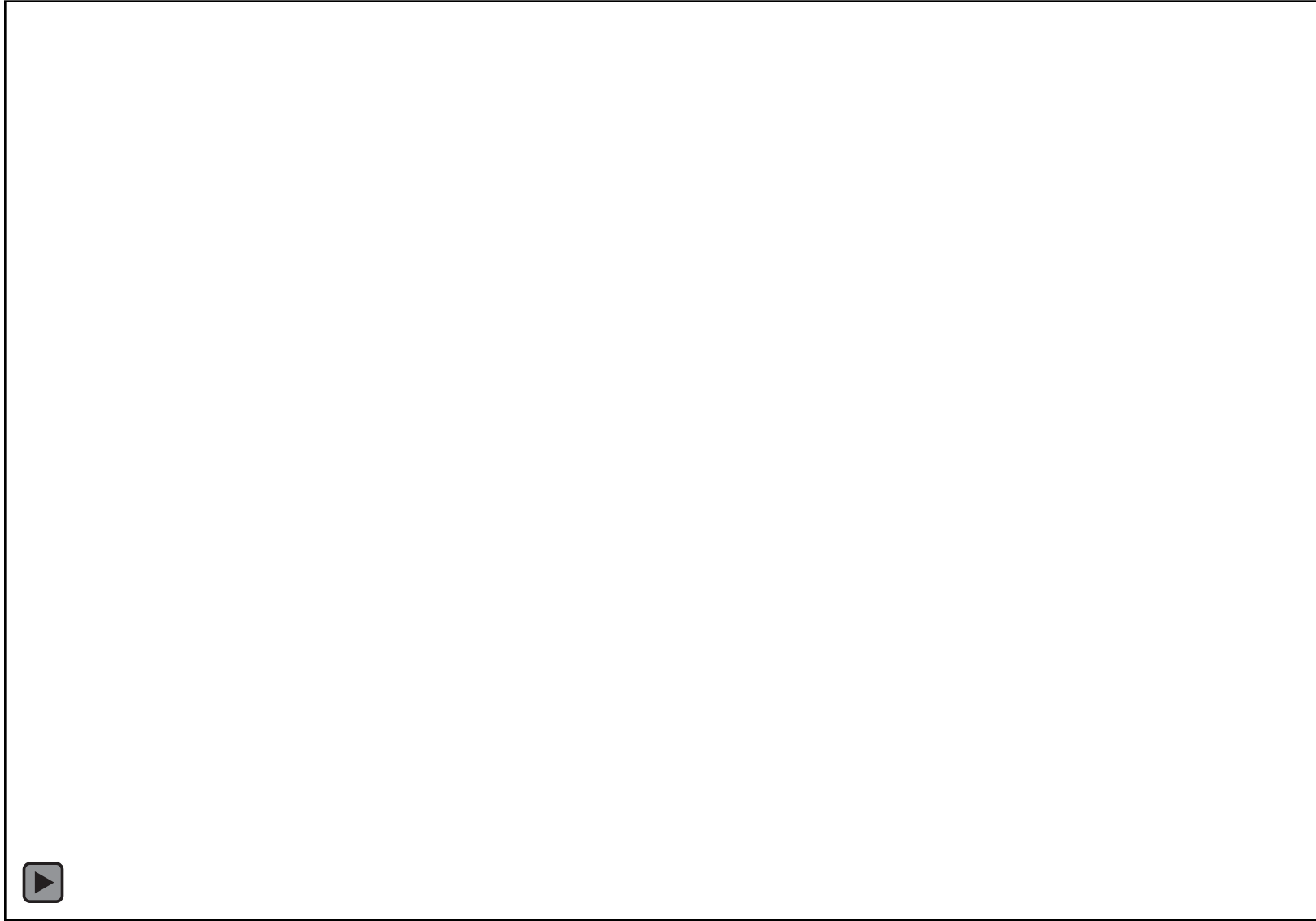
No Regional wall motion abnormality at rest

Good LV systolic function (LVEF 68%)

RA, RV and PA dilated . Pulmonary artery systolic pressure 40 mmHg

No valvular vegetation or vegetation related to device was seen

# Transesophageal Echo (23/10/24)



# Transesophageal Echo (23/10/24)



# TOE Report

- Description : Window was 0, 45, 60, 90-120
- Findings : RA RV & PA Dilated
- IAS : ASD Device in situ. IVS: Intact
- Pulmonary Veins : Right Upper Pulmonary veins draining into SVC to RA
- Mitral valve : Normal
- Tricuspid valve : Mild TR (Annulus -28 mm) PASP-40mmHg.
- Aortic valve : Normal

# TOE Report

Pulmonary valve : Normal

Others : A mobile vegetation (3mm) was attached to LA aspect of device .

- **Impression:**

- S/P ASD Device closure with no residual shunt
- A mobile vegetation (3 mm) was attached to LA aspect of device .
- Good LV systolic function

# Final Diagnosis

- Infective endocarditis with Heart failure with NYHA class III with S/P ASD device closure

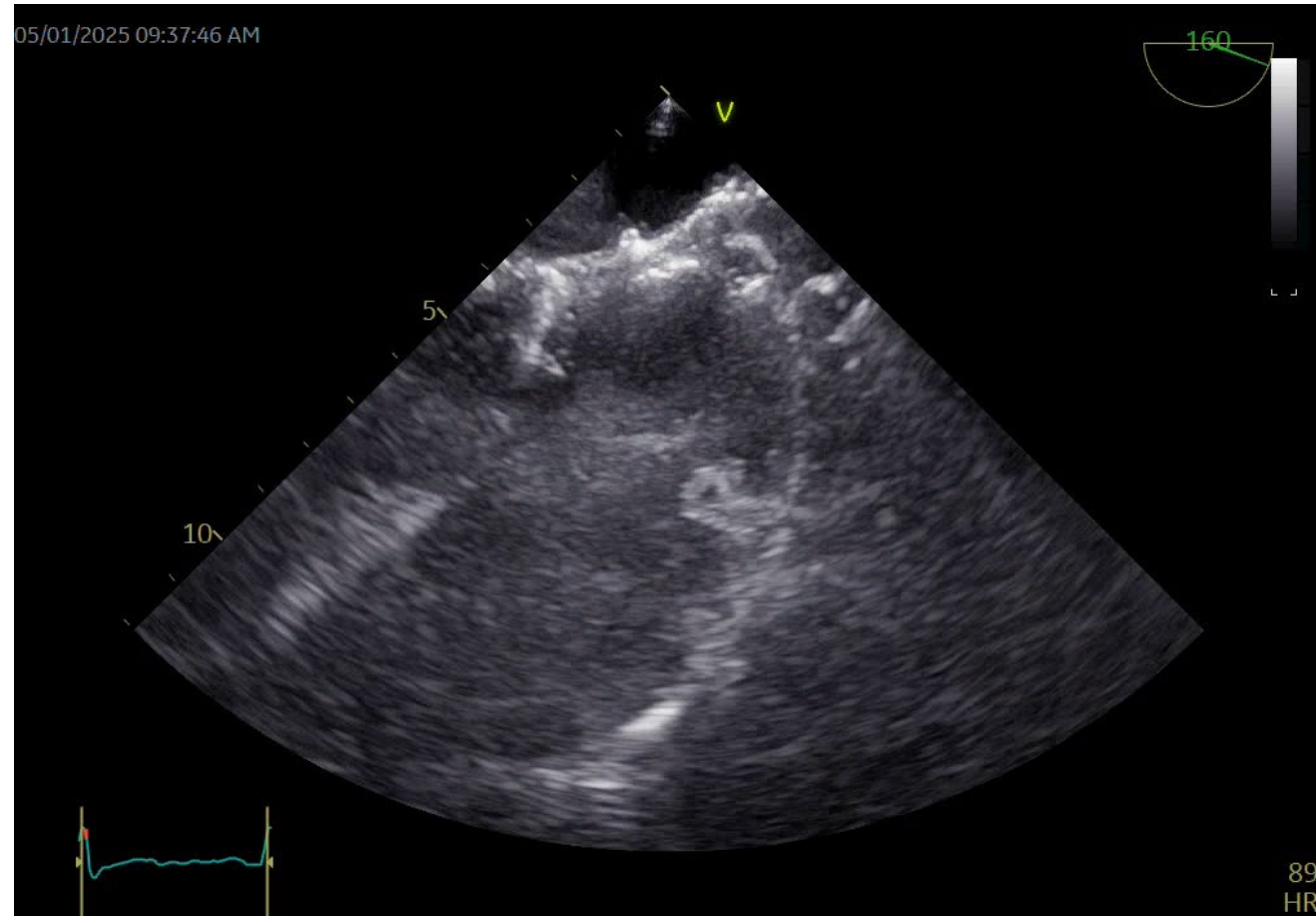
# Treatment Given

- Inj Vancomycin for 6 weeks ( 30 mg /kg/day)
- Inj Gentamycin for 2 week (3 mg /kg/day)
- Oral Rifampicin 900 mg/day for 6 weeks
- Diuretics
- Paracetamol

# Follow up

- After getting 10 days of I/V antibiotics patient became afebrile.
- His general condition was also improving.
- A F/U TOE was done after 20 days.

# Follow up TOE (After 20 days)



# Follow up

Inv name	Date	Result
HB	31/10/24	8.3 g/dl
WBC	31/10/24	4.39 X 10 <sup>3</sup> /mm <sup>3</sup>
S creatinine	31/10/24	1.04 mg/dl
CRP	31/10/24	16 mg/l

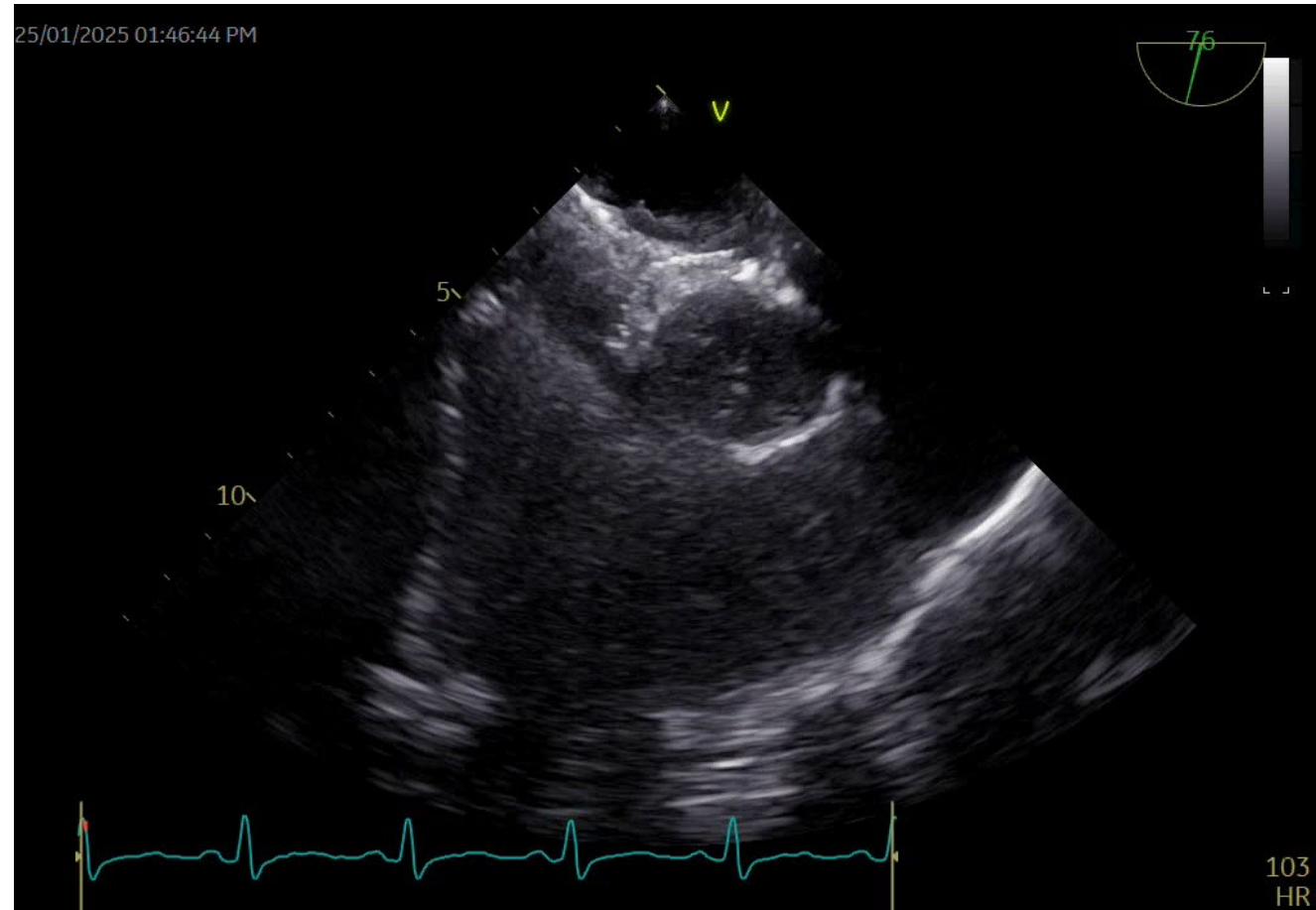
# Follow up

Inv name	Date	Result
HB	20/11/24	9 g/dl
WBC	20/11/24	5.7 x10 <sup>3</sup> /mm <sup>3</sup>
S creatinine	20/11/24	1.1 mg/dl
CRP	20/11/24	12 mg/l

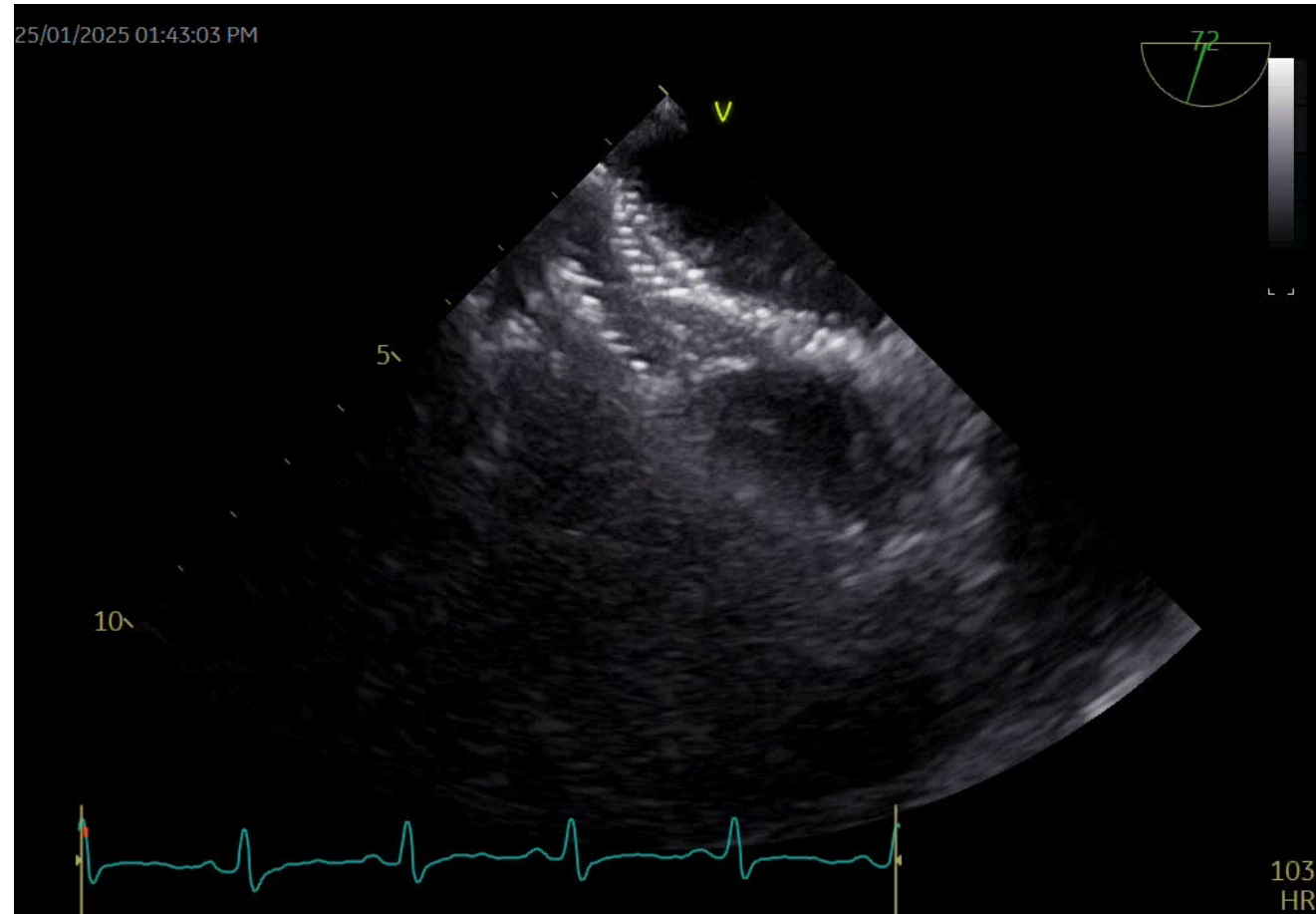
# Follow up

Inv name	Date	Result
HB	5/12/24	10.2 g/dl
WBC	5/12/24	5.5 x 10 <sup>3</sup> /mm <sup>3</sup>
S creatinine	5/12/24	1.13 mg/dl
CRP	5/12/24	6 mg/l

# Follow up TOE (After 6 weeks )



# Follow up TOE (After 6 weeks )



# Discharge advice

- To maintain good dental hygiene ( daily use of dental floss, morning and evening brushing of teeth, 6 monthly professional dental check up)
- To maintain good skin hygiene (minimize risk of skin lesions, avoid tattoos and piercings)
- To consult doctor if experience fever for no obvious reason
- To not self prescribe antibiotics
- To take prophylaxis for Oro-dental and invasive procedures



# Take Home Message

- Infective endocarditis can occur in intracardiac devices and proper prophylaxis should be given after closure
- Infective endocarditis may be culture negative but high degree of suspicion and evaluation of causes is needed
- Transesophageal echo plays an important role in diagnosis of infective endocarditis
- Early diagnosis and proper antibiotic therapy is crucial in management of the patient

# Acknowledgement

- Department of Medicine, DMCH
- Department of Radiology and Imaging, DMCH
- Department of Pathology, DMCH
- Department of Microbiology, DMCH
- Department of microbiology, BSMMU
- Department of Hematology, DMCH
- Department of surgery, DMCH

# Infective endocarditis

- Infection of any structure on the heart including on normal or damaged endothelial structure, prosthetic heart valve and device (PPM, ICD, short VAD) is called infective endocarditis

# Infective endocarditis

## Cardiac and non-cardiac risk factors

### Cardiac risk factors

Previous infective endocarditis

Valvular heart disease

Prosthetic heart valve

Central venous or arterial catheter

Transvenous cardiac implantable electronic device

Congenital heart disease

### Non-cardiac risk factors

Central venous catheter

People who inject drugs

Immunosuppression

Recent dental or surgical procedures

Recent hospitalization

Haemodialysis

## Definitions of the 2023 European Society of Cardiology modified diagnostic criteria of infective endocarditis

### Major criteria

#### (i) Blood cultures positive for IE

- (a) Typical microorganisms consistent with IE from two separate blood cultures:  
Oral streptococci, *Streptococcus gallolyticus* (formerly *S. bovis*), HACEK group, *S. aureus*, *E. faecalis*
- (b) Microorganisms consistent with IE from continuously positive blood cultures:
- $\geq 2$  positive blood cultures of blood samples drawn  $>12$  h apart.
  - All of 3 or a majority of  $\geq 4$  separate cultures of blood (with first and last samples drawn  $\geq 1$  h apart).
- (c) Single positive blood culture for *C. burnetii* or phase I IgG antibody titre  $>1:800$ .

#### (ii) Imaging positive for IE:

Valvular, perivalvular/periprosthetic and foreign material anatomic and metabolic lesions characteristic of IE detected by any of the following imaging techniques:

- Echocardiography (TTE and TOE).
- Cardiac CT.
- [18F]-FDG-PET/CT(A).
- WBC SPECT/CT.

## Minor criteria

- (i) Predisposing conditions (i.e. predisposing heart condition at high or intermediate risk of IE or PWIDs)<sup>a</sup>**
- (ii) Fever defined as temperature >38°C**
- (iii) Embolic vascular dissemination (including those asymptomatic detected by imaging only):**
  - Major systemic and pulmonary emboli/infarcts and abscesses.
  - Haematogenous osteoarticular septic complications (i.e. spondylodiscitis).
  - Mycotic aneurysms.
  - Intracranial ischaemic/haemorrhagic lesions.
  - Conjunctival haemorrhages.
  - Janeway's lesions.
- (IV) Immunological phenomena:**
  - Glomerulonephritis.
  - Osler nodes and Roth spots.
  - Rheumatoid factor.
- (V) Microbiological evidence:**
  - Positive blood culture but does not meet a major criterion as noted above.
  - Serological evidence of active infection with organism consistent with IE.

## IE Classification (at admission and during follow-up)

## IE Classification (at admission and during follow-up)

### **Definite:**

- 2 major criteria.
- 1 major criterion and at least 3 minor criteria.
- 5 minor criteria.

### **Possible:**

- 1 major criterion and 1 or 2 minor criteria.
- 3–4 minor criteria.

### **Rejected:**

- Does not meet criteria for definite or possible at admission with or without a firm alternative diagnosis.

[18F]-FDG-PET/CT, <sup>18</sup>F-fluorodeoxyglucose positron emission tomography; CT(A), computed tomography (angiography); HACEK, *Haemophilus*, *Aggregatibacter*, *Cardiobacterium*, *Eikenella*, and *Kingella*; IE, infective endocarditis; Ig, immunoglobulin; PWID, people who inject drugs; TOE, transoesophageal echocardiography; TTE, transthoracic echocardiography; WBC SPECT/CT, white blood cell single photon emission tomography/computed tomography.

<sup>a</sup>For detailed explanation of predisposing conditions, please see [Section 3](#).

# Prophylaxis for IE

## **Criteria for antibiotics prophylaxis for IE :(high risk patients)**

- Previous IE
- Prosthetic heart valve (transcatheter or surgically implanted)
- CHD
- Unrepaired cyanotic congenital heart disease
- Repaired CHD with residual defect

# Prophylaxis for IE

- In the absence of residual defect or valve prosthesis in case of complete repaired CHD, for the first 6 months after the procedure
- Ventricular assist device
- Recipient of heart transplant

# Procedures in high risk patients demand IE prophylaxis

- Dental procedure: tooth extraction, oral surgery, manipulation of gingival or periapical region of teeth.
- Diagnostic or therapeutic procedure of respiratory, gastrointestinal, genitourinary , skin or musculoskeletal system.

# Prophylactic antibiotic regime

- **Single dose is given 30-60 min before procedure**
- **If no allergy to penicillin or ampicillin :** Amoxicillin 2g orally  
Ampicillin 2g I/V or I/M  
Cefazolin or ceftriaxone 1g  
I/M or I/V
- **Allergy to penicillin or ampicillin :** Cephalexin 2g orally  
Azithromycin or clarithromycin  
500mg orally  
Doxycycline 100 mg orally  
Cefazolin or ceftriaxone 1g I/M or I/V

# Services given in Cardiology Dept. in 2024

- Total Bed : **64** (CCU -19+ PCCU -32+ pre-Cath and post-cath -13 )
- Total admission: **4684** ( CCU-2,241+ PCCU-1,362+ Cath lab -1,081)
- Total OPD patients : 27,612
- Total Echocardiogram: 12,065
- Total ETT :177
- Total ECG :57,280

**Cardiac Cath lab:** CAG -1,124

PCI- 463

**Primary PCI-22**

Temporary pacemaker-42

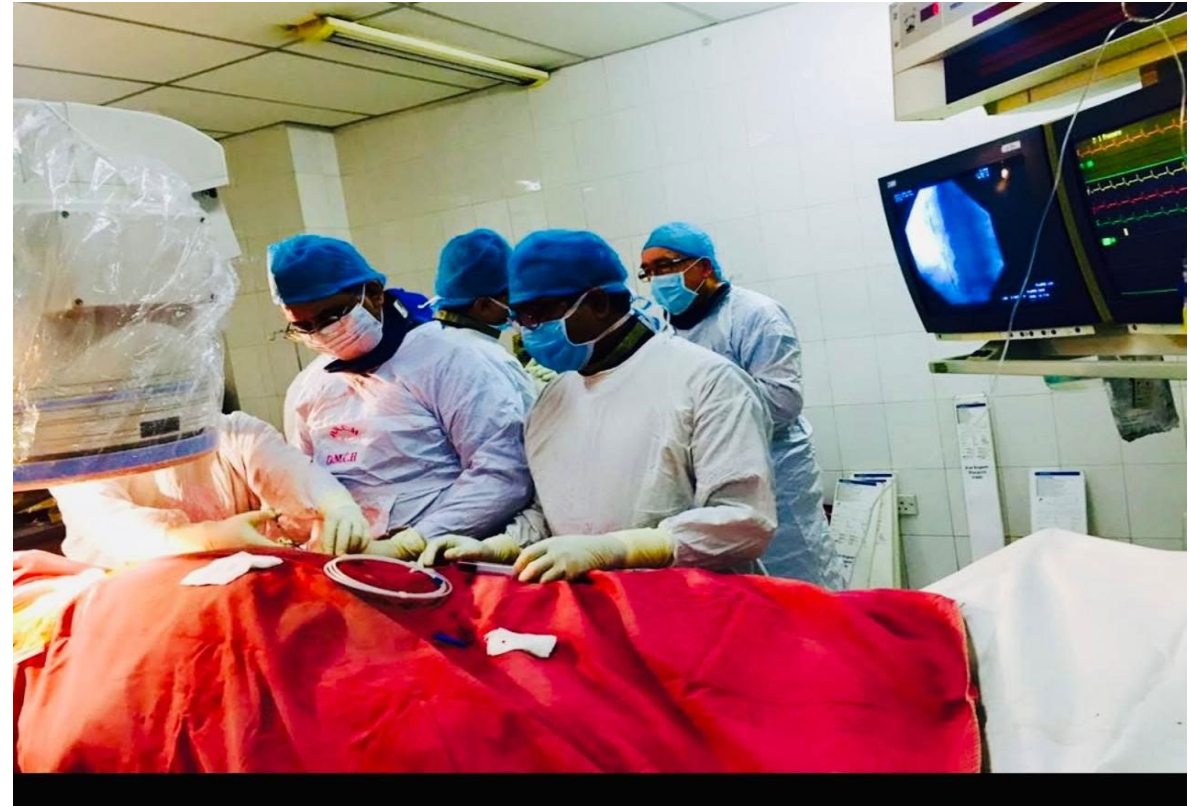
**Permanent pacemaker-39**

# Services given in Cardiology Dept. in 2024

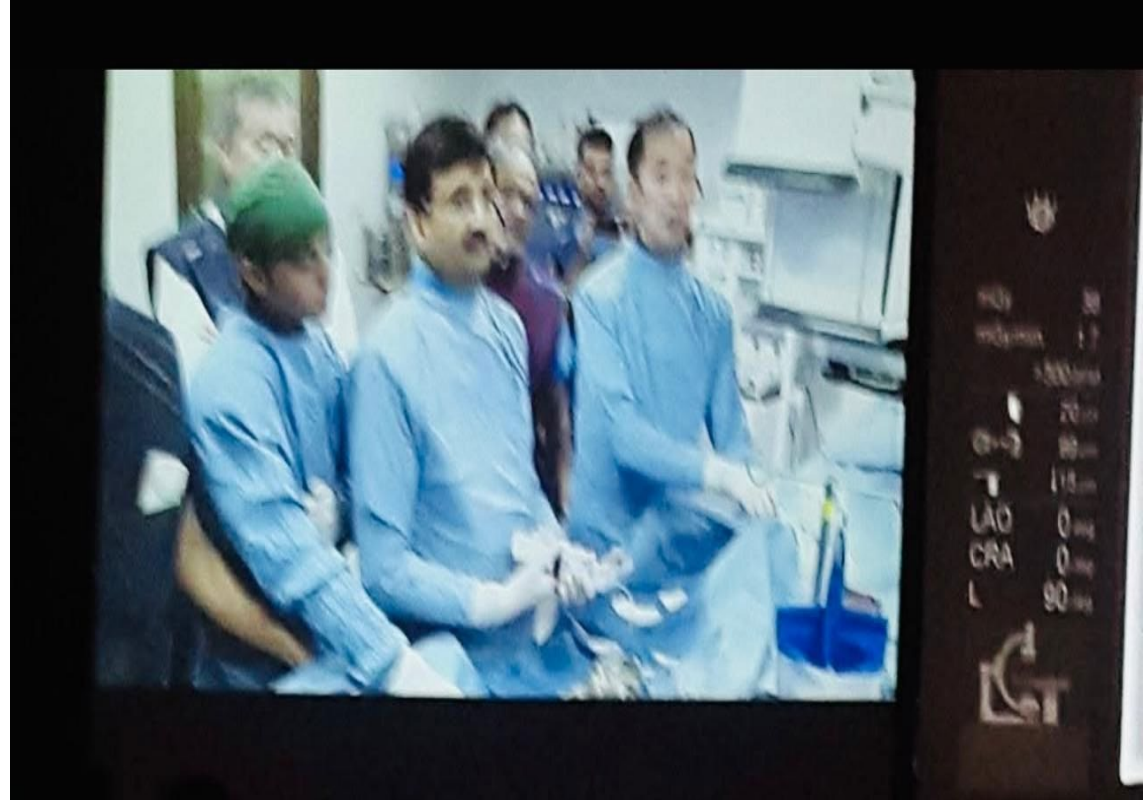
- Peripheral angiogram-43
- Peripheral angioplasty- 7
- PTRA (Percutaneous transluminal renal angioplasty)- 3
- PTMC -14
- Cardiac catheterization-18
- **Device closure (ASD,PDA)-08**
- Implantable Cardioverter Defibrillator-03
- CRT-D (Cardiac resynchronization therapy defibrillator)-02
- CRT-P (Cardiac resynchronization therapy pacemaker)-01



# Cath lab Activities



# Cath lab Activities

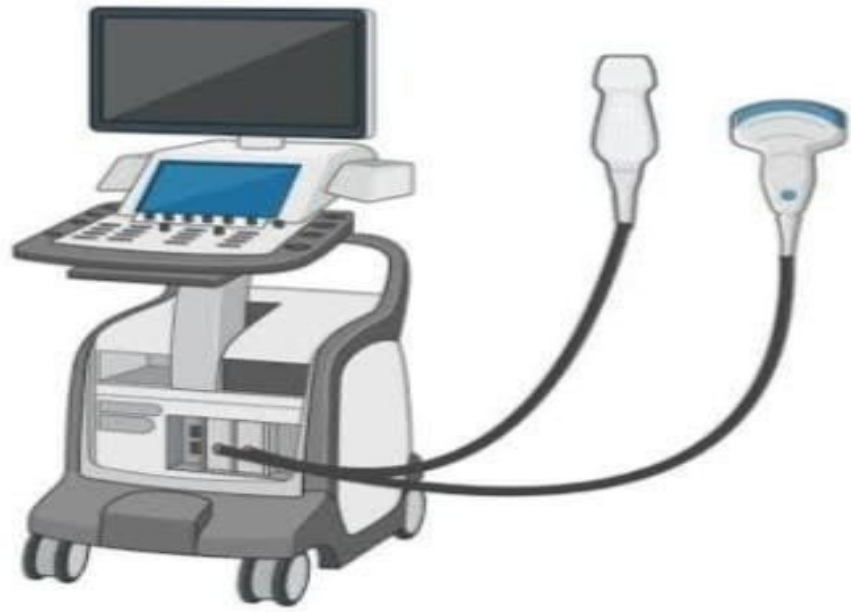
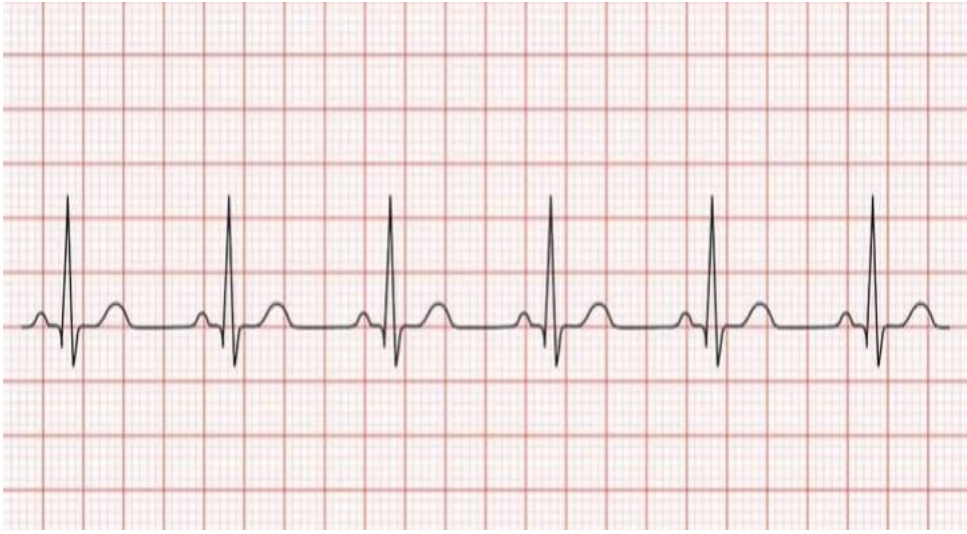


# Cath lab Activities



# Academic Activities







Thank You





Review

# Infective Endocarditis After Percutaneous Device Closure of Atrial Septal Defects: Incidence, Diagnosis, and Treatment. Case Report and Literature Review

Giuseppe Nasso et al. Surg Technol Int. 2023.

## Abstract

Infective endocarditis (IE) on atrial septal defect (ASD) closure devices, while extremely rare, has been reported to be more frequent early after the procedure. We describe a case of late IE after percutaneous closure of patent foramen ovale (PFO). We also performed a literature review on this subject. We reviewed a total of 42,365 patients who were treated with percutaneous devices: 13,916 for ostium secundum (OS) (32%), 24,726 for PFO (58%) and 3,723 for OS+PFO (8%). Among these patients, we identified 50 cases of IE after atrial septal defect device closure (0.001%). In contrast to previous reports, nearly 66% of IE in this setting occurred late, after at least 6 months from the procedure (33/50 patients). A statistical analysis clearly showed that the mean time from the procedure to IE increased in the last five years, probably associated with a change in antiplatelet therapy after ASD closure. Management of IE on an ASD occluder should always be discussed in the setting of a multidisciplinary heart team that includes a cardiologist, cardiac surgeon, and anesthetist.

## Atrial Septal Defect Closure Device– Related Infective Endocarditis in a 20-Week Pregnant Woman

 OPEN ACCESS

### Clinical Case

Navneet Sharma, UI Weena, John Medamana,  
Noelle Mann, Paul Strachan,  
Joanna Chikwe, and Smadar Kort

J Am Coll Cardiol Case Rep. 2021 Feb, 3 (2) 300–  
303

PDF | VIDEO



Case Report

# Infective endocarditis of transcatheter atrial septal occluder devices: A case report

Mirei Nabuchi-Kawasaki MD <sup>a</sup>  ,  
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Syunsuke Sasaki MD, PhD <sup>a</sup>,  
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