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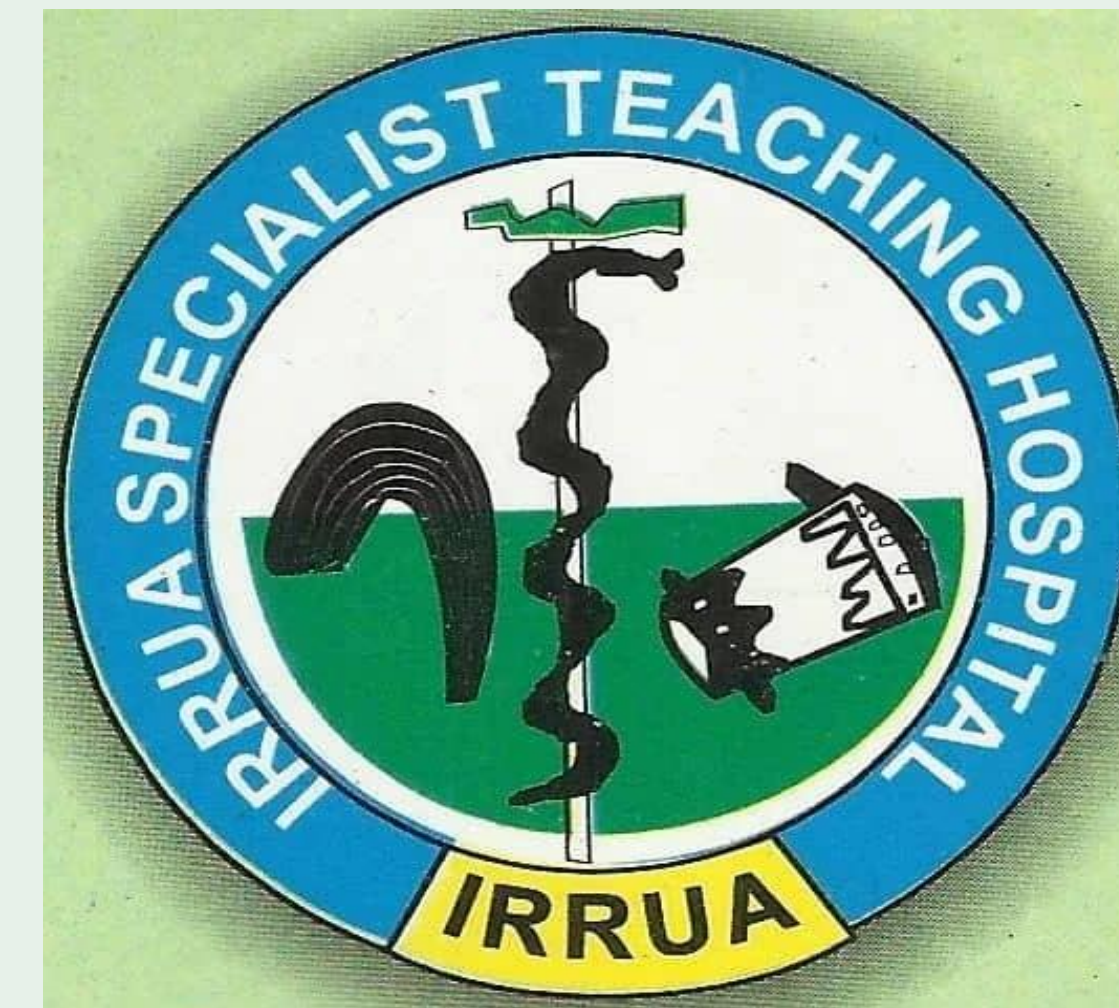
# HEMORRHAGIC PERICARDIAL EFFUSION IN LASSA VIRUS DISEASE IN CHILDREN: A REPORT OF THREE CASES

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## Background/Pathophysiology/ Diagnosis

### Background

- Lassa virus disease (LVD) is a viral hemorrhagic illness caused by Lassa virus and it is endemic in West Africa.
- It has multisystemic manifestations, including fever, bleeding, edema and polyserositis
- **Polyserositis** includes pleural effusion and effusive pericarditis
- No previous pediatric reports of hemorrhagic effusive pericarditis documented
- **Objective** is to raise awareness of Lassa pericarditis in children with hemorrhagic pericardial effusion in endemic regions, encouraging early diagnosis and treatment.

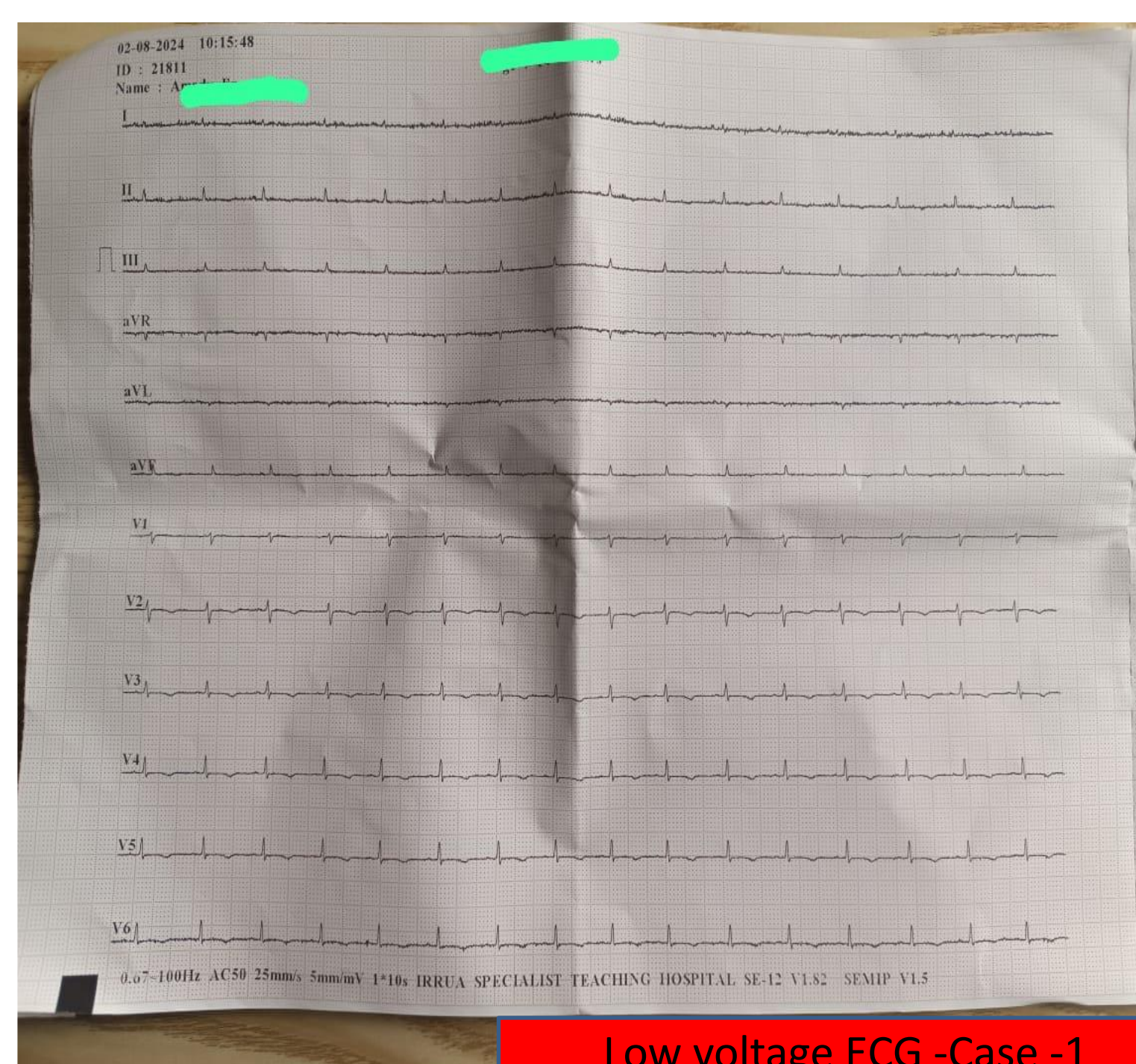
### Pathophysiology

- Endothelial injury from direct viral action
- Activation of coagulation pathway
- Immune-mediated vascular permeability
- Presence of platelet aggregation inhibitors
- **Diagnosis: Reverse Transcriptase-Polymerase Chain Reaction (RT-PCR) but Blood RT-PCR may be negative even when virus is present in other body fluids.**

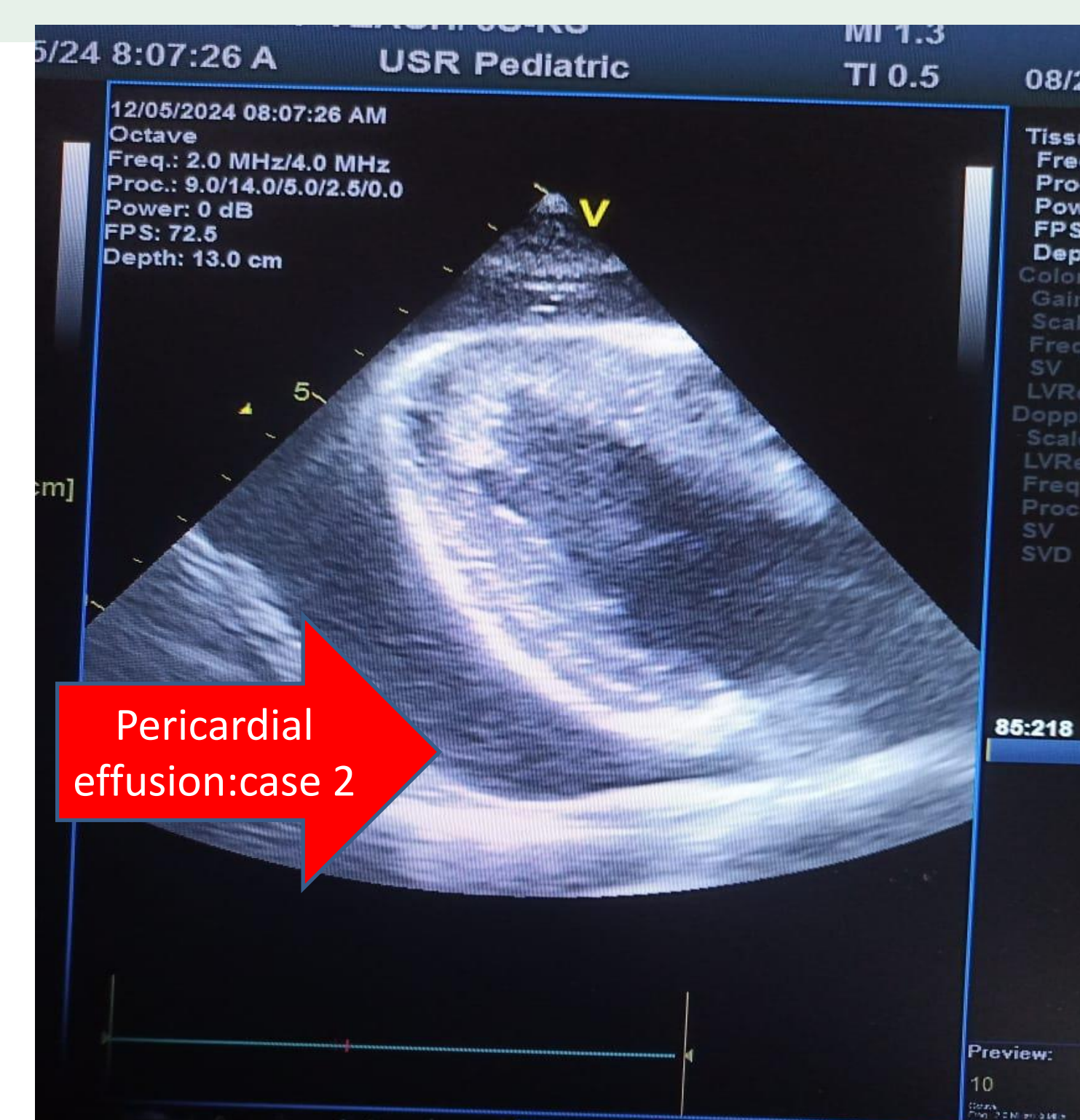
## Methods/ Investigations

### Methods

- Clinical notes of 3 male children with effusive pericarditis from January-December 2024 were reviewed.
- **Data Collected were:**
  - Patient data
  - Symptoms
  - Examination findings
  - Investigations (e.g., X-ray, ECG, Echo, PCR)
  - Treatment
  - Outcomes



Low voltage ECG -Case -1



Pericardial effusion:case 2

## Case reports

### Case 1

- M/13years with post-infectious effusive pericarditis
- 7 months after LVD
- Symptoms:
  - 6-weeks : Facial & leg swelling, dyspnea, easy fatigability, and vomiting
- Exam findings: Pallor, pedal edema, lymphadenopathy, raised JVP, hepatomegaly, tachycardia and ascites
- Investigations:
  - Chest X-Ray: Cardiomegaly
  - ECG: Generalized low voltages
  - Echo: Large pericardial effusion
  - Pericardial tap: 600mls / 500mls hemorrhagic fluid,
  - Cytology: Chronic inflammatory smear (lymphocyte-rich)
  - Lassa PCR (serum, pericardial & ascitic fluid): Negative
  - TB Gene pert: Negative
- Treatment: Antibiotics, diuretics, dopamine, pericardiocentesis and pericardiostomy, due to re-accumulation
- Outcome: Discharged well, healthy at follow -up

### Case 2

- M/9years with acute effusive pericarditis
- Symptoms :
  - 2 weeks : Fever, chest pain, cough, facial & leg swelling, dyspnea, orthopnea, easy fatigability
- Exam findings: Fever, pallor, pedal edema, lymphadenopathy, tachycardia, raised JVP, distant heart sound, tachypnea, hepatomegaly and ascites
- Investigations:
  - Chest X-ray: Cardiomegaly
  - Echo: Large pericardial effusion
  - Pericardial Tap: 1500 ml hemorrhagic fluid
  - Cytology: Hemorrhagic smear, few mixed polymorph
  - Lassa PCR :**Pericardial fluid positive for Lassa RT-PCR, blood negative**
- Treatment: Pericardiocentesis, ribavirin; antibiotics and diuretics
- Outcome: Discharged well, healthy at follow -up

### Case 3

- M/15 years with post-infectious effusive pericarditis
- Symptoms:
  - 3 days : Chest pain, cough, palpitations, facial & leg swelling, dyspnea and easy fatigability
- Exam findings: Edema, tachycardia, distended neck veins, distant heart sounds, tachypnea and hepatomegaly
- **Investigations**
  - Chest X-ray : Cardiomegaly
  - Echo: Large pericardial effusion
  - Pericardial tap: 1600 ml hemorrhagic fluid
  - Cytology : Hemorrhagic smear
  - Lassa PCR (serum and pericardial fluid) :Negative
  - TB GeneXpert : Negative
- Treatment: Pericardiostomy, antibiotics, diuretics
- Outcome: Resolved. Healthy at last follow up

## Conclusions and Recommendations

### Discussion & Conclusion

- Cases illustrate that hemorrhagic effusive pericarditis can be an **acute or delayed** complication of Lassa fever.
- **BLOOD PCR MAY BE NEGATIVE WHILE PERICARDIAL FLUID PCR IS POSITIVE.**
- Pediatric cases may mimic other etiologies like TB or malignancy.
- Early diagnosis and **targeted management** can reduce morbidity and mortality

### Recommendation

- Maintain **high suspicion** for LVD in hemorrhagic pericarditis
- Pericardial effusion may occur even **after viral clearance from blood**
- Consider **PCR testing of pericardial fluid especially in Lassa endemic areas**
- Follow-up is critical to detect late complications

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