មជ្ឈមណ្ឌលជាតិគាំពារមាតា និងទារក
National Maternal and Child Health Center

ទិវាសល្យសាស្ត្រ សម្ភព និងរោគស្ត្រី លើកទី៣

ប្រធានបទ៖ «ពង្រឹង និងបង្កើនសេវាព្យាបាល ថែទាំ សង្គ្រោះ ប្រកបដោយគុណភាព »

DENGUE HEMORRHAGIC FEVER (DHF) IN PREGNANCY AT NMCHC

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ICU Department

ថ្ងៃទី៤-៥ ខែកញ្ញា ឆ្នាំ២០២៥
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Introduction

- Dengue cases have been rising in recent years and also shown detrimental outcomes for pregnant infected women.
- Some pregnant women have dengue fever in the last weeks of pregnancy, leading to blood clotting disorders, which are dangerous for both mother and fetus.
- In the months of July, Service ICU of NMCHC receive 5 cases of Dengue hemorrhagic fever (DHF) severe clinical implications in pregnancy in which 1 woman is tragically death because of DHF Complication.
- In this presentation , we present the clinical case DHF in service ICU at NMCHC.

Incident

- All of these 5 women were present with fever and **Dengue NS1(+)**
- All these 5 cases are pregnant in 3rd Trimester.
- 3 of 5 women have dengue shock syndrome (TAS< 80mmHg).
- All these 5 cases have Thrombocytopenia (platelet< 50. × 10^9/L).
- 3 of 5 women has elevated liver enzymes (ALT, AST, GGT and LDH)

- 2 women went to vaginal delivery, and 3 undergone Cesarean section.
- 3 women have Postpartum hemorrhage.
- 3 have blood products transfusion (red blood cell transfusions, Platelet transfusions, Plasma transfusions).
- 3 have Fetal Distress (low APGAR Score).
- 1 of 5 newborns have fever and was tested positive of **Dengue NS1**

(Vertical Transmission)

- 4 women are fully recover, sadly with 1 maternal deaths (mortality 20%)

Case 1
(DHF in term pregnancy)

- 25-year-old pregnant woman entered our ICU department with fever for 3 days
- BP : 108/58 mmHg
  HR : 98/min
  T :39'C
  RR: 20/min
  O2: 99%
  FHR: 130bpm
- G1P0A0

- WBC 3.7 10^9/L
- RBC 9.3 g/dl
- Ht 28%
- Platelet 78 . 10^9/L
- Crea 0.6 g/dl
- CRP 11.6 mg
- **Dengue NS1 (+)**
- ASAT 59
- ALAT 32

- Diagnosis : Dengue hemorrhagic fever (D4)
- Obstetrician : Term pregnancy with severe oligohydramnios and Acute fetal distress
- Indication: Emergency C section.
- Newborn male; weight: 3550g, Apgar: 5.6.7
- transfers to the NCU department

- WBC 4.9. 10^9/L
- RBC 4.5 g/dl
- Ht 13.6 %
- Plaq 38. 10^9/L
- Na :133
- K: 3.7
- ASAT 144
- ALAT 64

Service ICU
Day 1 Post Operation

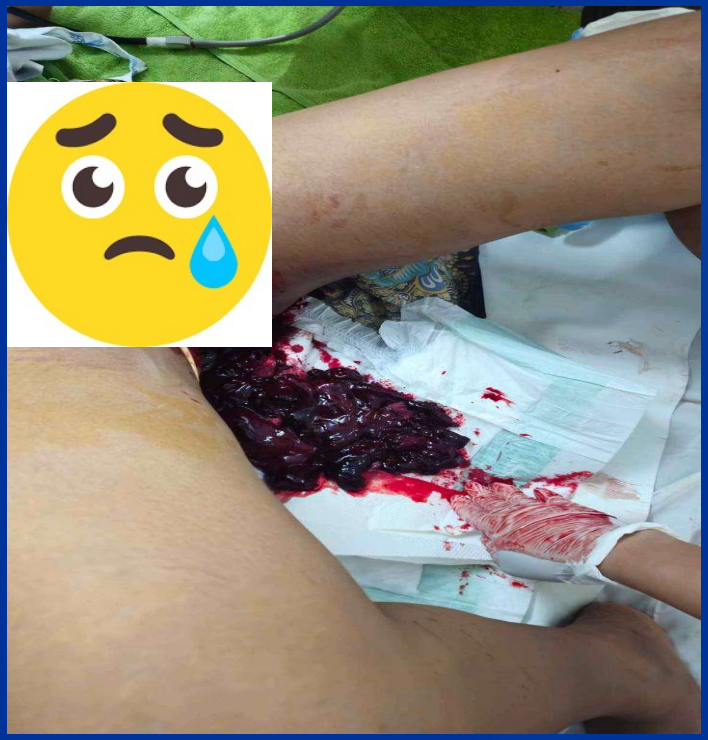
- BP : 85/40 mmHg
- HR : 102/min
- SpO2 98%
- GA : altered
- Symptoms of shock(+)
- Vaginal bleeding (++)
- peritoneal effusion (+)
- Pleural effusion (+)

Diagnosis : DHF with shock (D4) + C section (D1)

- Correct shock
- Metabolic correction (acidosis)
- Transfusion
- reinforce blood clotting
- DHF treatment

- PIV LR 1000ml +Oxy 2A
- Ceftriaxone 2g (IVL)
- Metro500mg 1fl *3 (PIV)
- Albumine 1FL * 2 PIV
- Omeprazole 40mg 1FL (IVL)
- Para 1g (PIV) condition
- Tranex 3g/24h (IVSE)
- Calcium 1A * 2 (IVL)
- Vit K1 1A * 2 (IVL)
- Solumedrol 125mg 1Fl IVL
- Cytotec 2cp *3 (SL)

Day 3 (post c-section)



- Diagnosis : DHF with shock (D7) + C section (D3)+ PPH

Obste: no surgery

ICU

- Correct shock
- Metabolic correction (acidosis)
- Transfusion
- reinforce blood clotting
- DHF treatment

- WBC: 15x 10^9/L
- RBC 4.5 g/dl
- Ht : 13%
- Platelet 18. 10^9/L
- TP: 40%
- ASAT :130
- ALAT :143

Service ICU
Day 5 (post c-section)

- Hemodynamic instability
- Vaginal bleeding (+)

Service ICU
Day 10

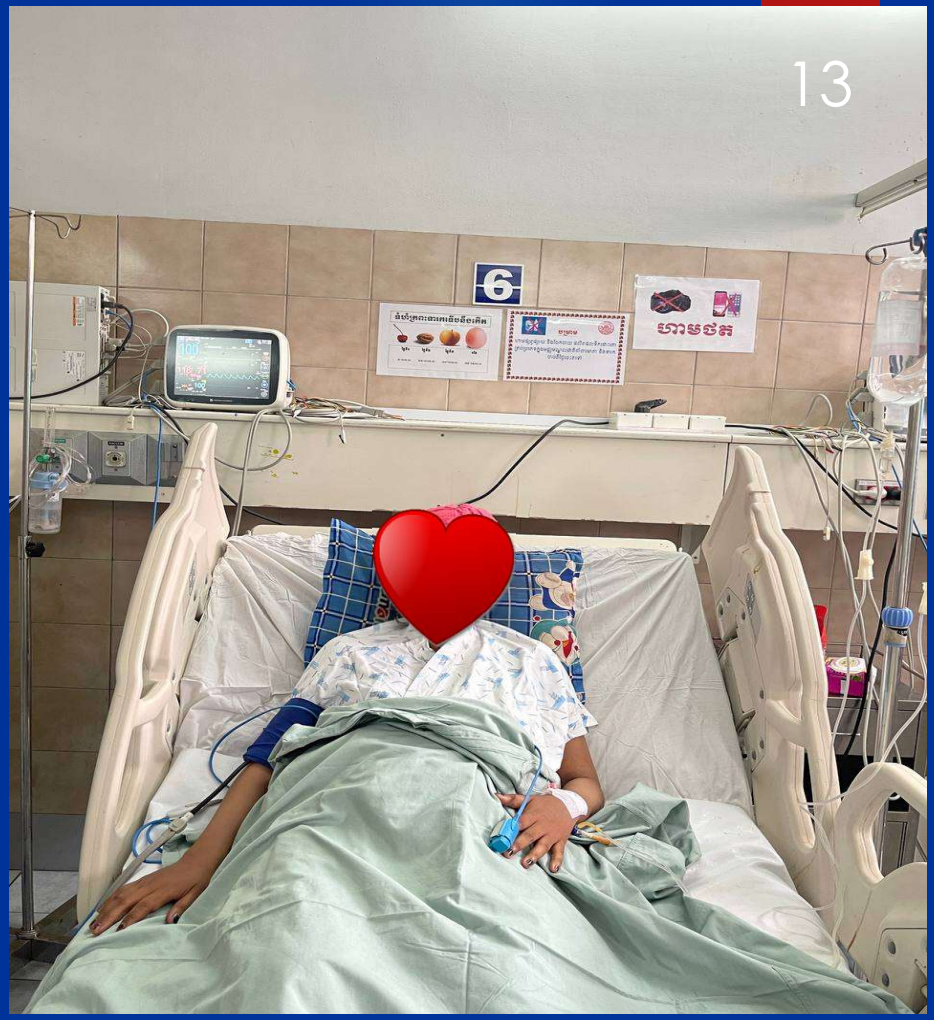
- BP 120/70 mmHg
- HR : 68/min
- SpO2 : 99%
- Fully recovered
- Symptoms of shock(-)
- Vaginal bleeding (-)
- peritoneal effusion (-)
- Pleural effusion (-)

- WBC: 15x10^9/L
- RBC 9 g/dl
- Ht : 25%
- Platelet 185. 10^9/L
- TP: 99%
- ASAT :45
- ALAT :43

- Diagnosis: DHF (D14)+ post c-section (D10)
- Stayed At ICU for 10 days

Total Transfusion:

- RBC: 10 bags
- Platelet 28 bags
- Plasma 8 bags
- Transfer to Maternity Ward



Case 2
DHF with pulmonary edema

- Ms. 23F, G.37 SA was transferred to the ICU on 17-7-2025 at 08:30 for severe dyspnea after dengue infection D4.

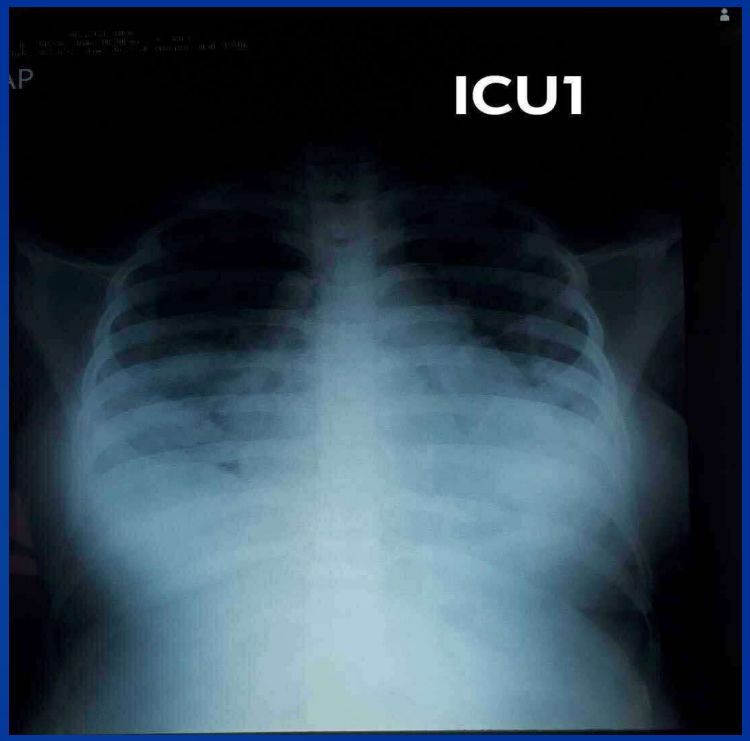
Vital Sign:

- BP: 120/60 mmHg
- HR: 120/min
- RR: 20/min
- SpO2: 90% at O2 10 L/min
- GS: 15/15

Clinical examination

- General condition: Alterate
- Consciousness : alert, agitate
- Dyspnea: +++
- Fever (+)
- Cough with serous sputum
- Lung : crackling sound, both lungs
- Pleural effusion (+)
- Cardiac : Tachycadie 130/min,
- Abnormal heart sound (-)
- Hepatomegaly (+)
- splenomegaly (-)
- Paleness: (-)
- Petechial(-) purpura (-)
- Lower limb edema (-)
- Internal hemorrhage (-)
- Urine : 500ml/24H.

Chest X ray: acute pulmonary edema
Cardiac Ultrasound : normal



UN THEARY Sex: F Age:24years old H:155cm W: 65Kg
Up: Heart Check Up
est by: LAY HEANG Nurse: ROS Khanyany

Ao Root Dia	: 26mm (20-35)	LA Dia	: 36mm (20-37)
AoV Cusp Sep	: 17mm (16-23)	LA Surf	: 16cm² (< 20)
Aorta	: Normal		
IVSd	:09mm (08-11)	IVSs	: 12mm (11-14)
LVEDd	:51mm(40-54)	LVESd	: 34mm (25-40)
LVPWd	:09mm(08-11)	LVPWs	: 13mm (12-25)
FS	:34% (28-42)	EF	: 63% (55-70)

RVED	: mm (<25mm)	RA Surf	:cm² (< 17)
RA Dia	: Minor:mm (<44mm)	Major	:mm (<53mm)
TAPSE	: mm (>17mm)		

Pericardial: Normal

COMMENT

Left Ventricle:
- LV dimension no enlarged with LVEDd:51mm.
- LV systolic function is normal with EF:63%.
- Global and segmental contraction is normal.
- Diastolic function is normal
- Septum and posterior wall are normal.

Mitral valve: is normal in structure, function and motion.
Aortic valve: is normal in structure, function and motion
Left atrium: no enlarged, no thrombus neither spontaneous contrast.
Right Heart: No evidence of the right cavity dilated.
Tricuspid Valve: is normal in structure, motion and function.
IVS and IAS are intact, No shunt.
IVC: enlarged with 17mm diameter. Inspiration collapsed <50%.
Conclusion: Normal Cardiac Ultrasound.

- Diagnosis: Dengue fever (D4) with pulmonary edema in 37 weeks pregnancy.
- Indication: medical treatment of Dengue
- Obstetrician:

FHR = 145/min

Fluid amniotic index : normal

No emergency delivery

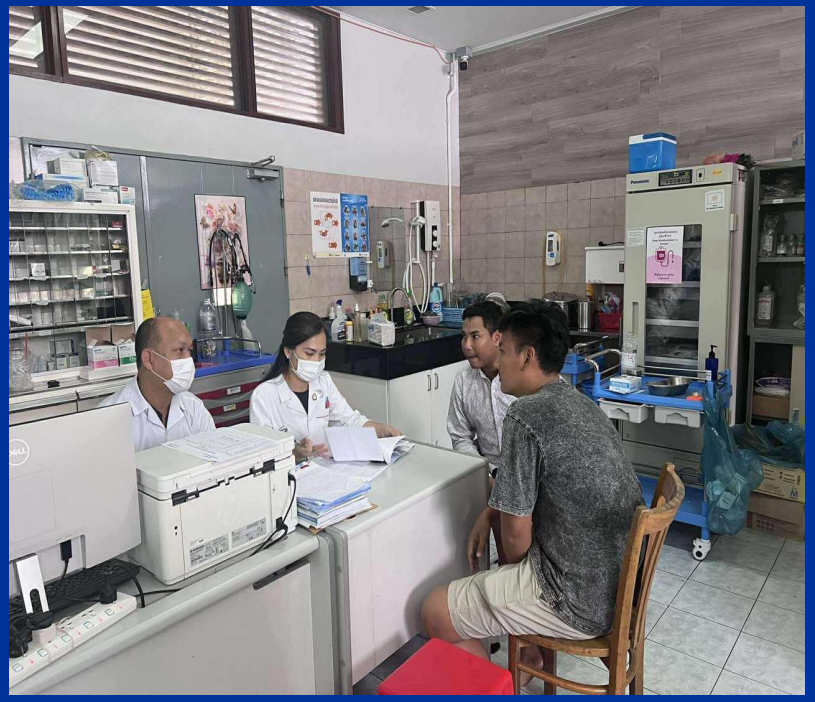
- RBC= 11.7 g/dl,
- Ht = 35.5%
- Platelet= 39x 10^9/L
- Urea= 22 mg/dl
- Creatine = 0.6 mg/dl
- ASAT= 197 U/L
- ALAT= 115 U/L
- Na =135, K=2.5
- Glucose: 116g/dL
- CRP : 67mg/dL
- Dengue NS1 (+), IgG (+)

Service ICU (D1) (DHF D5)

- Patient condition worsening
- Confusion
- No more fever
- Dyspnea (+++)
- Hypotension with shock sign
- Cold and clammy skin (+)
- Profuse sweating (+)
- Urine : 800ml/24H
- Diagnostic : DHF with shock (D5) + OAP

Medical team (Anesthesiologist , Obstetrician) decision :

- Medical treatment for DHF.
- Obstetric procedure not required.
- Close fetal monitoring.
- Explain to the family, about the serious condition of the patient.



Service ICU (D7)
DHF(D10)

- Condition get better
- SpO2 95% at O2 3L/min
- Platelet : 96 x10^9/L
- Lung : clear
- Obstetric ultrasound : Severe oligohydramnios with 38 weeks pregnancy.
- Obstetric : C/section

- After discuss with multidisciplinary team and agreement from hospital director, we decide to have a schedule C-section.
- Deliver a new born, male; weight: 2750g, Apgar: 4.5.6, and transfers to the NCU department.

- She was fully recover After 16 days of critical care at ICU service by effort multidisciplinary team.

Case 3
DHF with thrombose- embolic

- A 30-year-old 36weeks pregnancy, from Svay Reang province, entered the ICU department for fever day 1.
- Medical: no
- Surgical: no
- Gynecological: no
- Obstetric: G3P2A0 (ANC in province)
- Allergy: unknown

Clinical Examination:

- BP: 122/66 mmHg, HR: 114/min, Spo2: 98%, Temp: 38.5c,
- FHR : 155/min
- GA : Slightly altered
- Consciousness : GCS: 15/15,
- Conjunctive : slightly pallor
- Respiratory: Normal
- Cardiovascular: Regular rhythm, no audible murmur

- WBC= 7.1x10^9/L
- RBC= 9.3 g/dl
- Platelet= 189x10^9/L
- TP= 100%,
- Urea= 10 mg/dL
- Crea= 0.6 mg/dl
- ASAT= 28 u/l ALAT=21u/l,
- Na+ = 135mmol/l
- K+ = 3.7mmol/l,
- Dengue NS1(+)
- Dengue IgG (+) et IgM (-)

- Obstetrical ultrasound:
  Pregnancy 36 weeks and 5 days.
- Obstetrician : No Obstetrical indication
- Heart Ultrasound: normal

- PIV - NSS 1000ml / 24H
- Paracetamol 1g: 1Fl x 3 (PIV)
- Omeprazol 40mg: 1A /24h
- Fer 1cp x 2 (PO)

At ICU
DHF (D7)

- Condition minimally altered
- Consciousness intact
- Skin and cutaneous tissue are well colored
- Fever 37°C
- Blood pressure: 129/80 mmHg, Pulse: 70/min
- Lungs : clear
- vascular system: normal
- No signs of hemorrhage
- FHR : 150 /min

- WBC: 8.71x 10^9/L
- RBC: 10.1 g/dl
- Ht : 33%
- Platelet: 37x10^9/L
- Urea : 10 , - Creatinine : 0.6
- Sodium : 139 , Potassium : 3.1
- Albumine : 27g/l
- TP : 99%

At ICU
DHF (D10)

- Condition : good
- Consciousness: normal
- Fever (-)
- Blood pressure: 129/80 mmHg, Pulse: 70/min
- Lungs : clear
- vascular system: normal
- No signs of hemorrhage
- No signs of DVT

- FHR : 150 /min
- WBC: 5.9 $.10^9/L$
- RBC : 9.3 g/dl
- Ht: 29%
- platelet : 145. $10^9/L$

On 11/08/2025 at 2:50

- The woman began to gasp for breath, her face turned purple, her eyes opened but she couldn't speak
- TA= 112/78 mmHg,
- HR= 130/mn,
- T◦= 36.1◦c
- SpO2= 85 % (O2= 15L mask)
- FHR : 146/mn

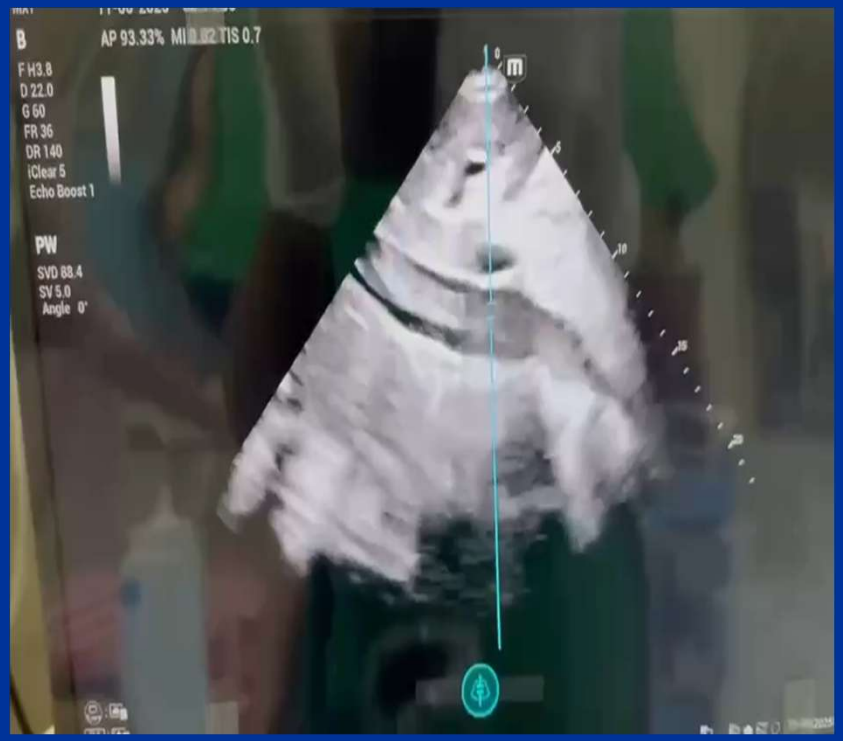
- Patient is at dreadful condition
- agitation with GCS7/15 (Y:1, V:2, M:4)
- Intense dyspnea and sweating
- Chest pain (++)
- Pallor and cyanosis of the extremities
- Lung : Clear
- Heart: weak and slow pulse (41/min),

BP: 68/40mmHg

- SpO2: 82% (O2=15L/min mask)
- vaginal bleeding ≈200ml (fresh blood)

Cardiac ultrasound by anesthetist :

- IVC = 23mm,
- Big thrombose in the inferior vena cava
- LVEF < 30%
- Right Ventricular congestion



- Oro-tracheal intubation: VC mode

(Vt=380ml, RR=15/min, PEEP=5cmH2O, FiO2=100%)

- ABG: metabolic acidosis
- Hypoxemia, hypocapnia

- At 4:00 . arrive in the operating room: Emergency Caesarean section for Diagnosis: **State of shock + acute fetal distress in a full-term pregnancy**
- Deliver a newborn, female
- weight: 3300g,
- Apgar: 4.5.6
- transfer to the NCU department

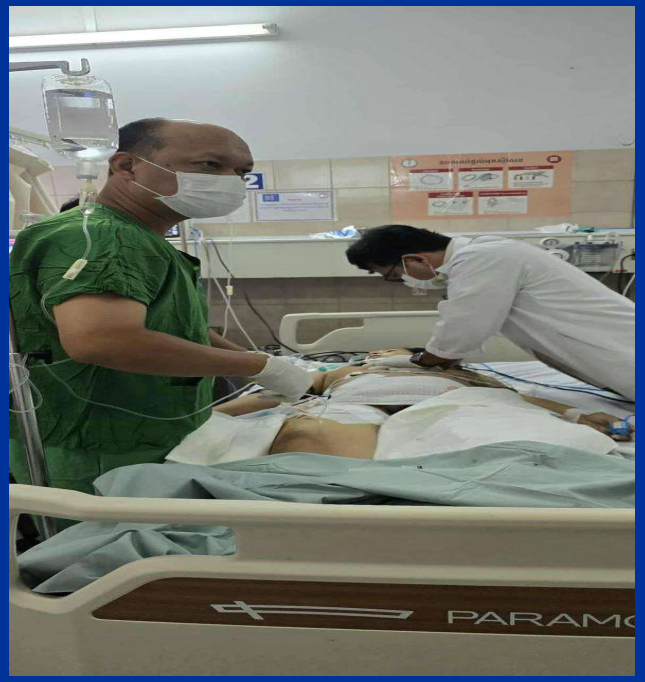
During operation

- RBC : 3 bags
- platelet :6 bags
- Plasma: 2 bags

- At 11:00 : Cardiac Arrest
- External Cardiac Massage + External Electric Shock 6 times for 45 minutes
- She died on 11/08/2025 at 13:30

Death Diagnosis :

- **Pulmonary Embolism + Disseminated intravascular coagulation + Cardiogenic Shock in a DHF D12 + post-Caesarean D0**



Conclusions

- DHF in pregnancy is high risk for both maternal and fetus death.
- Dengue become more dangerous with serious complications.
- DHF in the last weeks of pregnancy, leading to blood clotting disorders high risk of PPH.
- Multidisciplinary team (Obstetrician , Neonatologist, Anesthesiologist, internal medicine, Lab..) is essential.
- **Managing pregnancy with DHF is very complex and individualized.**
- Termination of pregnancy **: Depend on patients status.**
- There are an elevated liver enzymes that should be carefully differential diagnosis with Eclampsia or HELLP .
- Preventing thrombo-embolism (General measurement)

Take Home Message

- Every case of DHF in pregnancy must be transfered to Referral Hospital.
- Termination of pregnancy during Critical phase of DHF should be avoid.
- Risk of thrombo-embolism in convalescence phase need to be considered
- In case of shock, Ringer's Acetate is recommended.
- National guideline of DHF management in pregnancy should be available as soon as the case keep increasing.

Reference

- 1.Da Costa PSG, Ribeiro GM, Soares C, Da Costa CL. Short report: severe thrombotic events associated with dengue fever, Brazil. Am J Trop Med Hyg. 2012;87(4):741–742. doi: 10.4269/ajtmh.2012.11-0692. [DOI] [PMC free article] [PubMed] [Google Schola
- 2. Ranasinghe KMIU, Dissanayaka D, Thirumavalavan K, Seneviratne M. An unusual case of dengue shock syndrome complicated by ilio-femoral deep vein thrombosis; A case report. BMC Infect Dis. 2020;20(1):1–4. doi: 10.1186/s12879-020-05062-y. [DOI] [PMC free article] [PubMed] [Google Scholar]
- 3. Vasanthi N, Vairamon PM, Gowtham T, Das AK. Unusual presentation of dengue fever-cerebral venous thrombosis. J Clin Diagn Res. 2015;9(6):OD09-OD10. doi: 10.7860/JCDR/2015/13132.6068. [DOI] [PMC free article] [PubMed] [Google Scholar]
- 4. Chao C-H, Wu W-C, Lai Y-C, Tsai P-J, Perng G-C, Lin Y-S, et al. Dengue virus nonstructural protein 1 activates platelets via Toll-like receptor 4, leading to thrombocytopenia and hemorrhage. PLoS Pathog. 2019;15(4):e1007625. doi: 10.1371/journal.ppat.1007625. [DOI] [PMC free article] [PubMed] [Google Scholar]
- 5. Wills BA, Oragui EE, Stephens AC, Daramola OA, Dung NM, Loan HT, et al. Coagulation abnormalities in dengue hemorrhagic fever: serial investigations in 167 vietnamese children with dengue shock syndrome. Clin Infect Dis. 2002;35(3):277–285. doi: 10.1086/341410. [DOI] [PubMed] [Google Scholar]
- 6. Pang T, Cardosa MJ, Guzman MG. Of cascades and perfect storms: The immunopathogenesis of dengue haemorrhagic fever-dengue shock syndrome (DHF/DSS) Immunol Cell Biol. 2007;85(1):43–45. doi: 10.1038/sj.icb.7100008. [DOI] [PubMed] [Google Scholar]

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