



A CASE REPORT- ANTENATAL PATIENT WITH DENGUE HEMORRHAGIC FEVER WITH PULMONARY EDEMA AND ACUTE KIDNEY INJURY, WHO UNDERWENT EMERGENCY LSCS

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Abstract : Dengue infection is known to affect all age groups and has been causing fatal epidemics in recent times. In our case, it was a pregnant patient with Dengue Hemorrhagic Fever with multiorgan involvement (lungs, heart, kidney) who underwent Emergency LSCS. She was mechanically ventilated and underwent hemodialysis in the postop period and became normal.

Keyword : Dengue Hemorrhagic Fever, pulmonary edema, emergency LSCS A CASE REPORT- ANESTHETIC & POSTOP INTENSIVE CARE MANAGEMENT OF A PARTURIENT WOMAN WITH DENGUE HEMORRHAGIC FEVER COMPLICATED BY PREOPERATIVE PULMONARY EDEMA & POSTOPERATIVE ACUTE KIDNEY INJURY, WHO UNDERWENT EMERGENCY LSCS

INTRODUCTION:

Dengue fever has in recent years seen a great resurgence in tropical climates and appears to be spreading to new areas & causing epidemics. The signs and symptoms of dengue fever might easily be confused with pre eclamptic toxemia or its variant, HELLP syndrome in a pregnant patient with PIH & fever. The case report below outlines the management of a pregnant woman with Dengue hemorrhagic fever complicated by preoperative pulmonary edema, deranged coagulation profile & postoperative acute kidney injury, who underwent emergency cesarean section.

CASE SCENARIO:

A 30 yr old female, wt-52kg with an obstetric score- G3P1L1A1, was admitted in Labour ward on 29/8/12 as referral from peripheral hospital, with H/O of 9 months of amenorrhea with fever & jaundice of 10 days duration. LMP- 1/12/2011 & EDD- 8/9/2012 *H/O fever – 10 days, high grade, intermittent with chills & rigors. *No H/O of major medical illness or hospitalizations or previous surgeries in the past * She had a previous full term normal vaginal delivery 7 yrs back. (Child alive & healthy) & her 2nd pregnancy was a spontaneous abortion at 2 months.

PREOP STATUS :

On the day of admission 29/8/12, pt. was febrile, mild pallor +, icterus +, no pedal edema, no evidence of petechial hemorrhage, hydration fair. PR- 100/ mt, BP-130/70 mmHg, temp - 100 c, Respiratory rate- 25/mt CVS- S1, S2 heard, no added sounds or murmurs, RS- B/L NVBS heard.

Pt. was evaluated for fever by duty physician- was advised T. chloroquine & lab work up for PUO, including malaria, typhoid, dengue.

Lab workup :

*CBC :Hb- 8.8 gm/dl ,
TC- 14,800
DC- P68L24E8
platelets- 60,000/cu.mm
MP / MF smear – negative
peripheral smear- normocytic, normochromic anemia, thrombocytopenia *coagulation profile : BT- 2min 15s, CT – 4min 22s PT – 14.43 T (11C) ,INR- 1.32
aPTT -52.7 T(27C) Bl.group- O positive
* RFT – RBS: 85mg/dl, urea :33mgm% , creatinine :0.9mgm%
*LFT- TBR 5.6 Globulin 2.1
DBR 2.8 A/G 1.03:1
IBR 2.8 ALP 122
Total protein 4.1 SGOT 34
Albumin 2.3 SGPT 40

*serology- blood samples sent for dengue serology & widal tests.

* urine R/E -4-6 pus cells, 8-12RBCs , alb-trace

*USG – single live Intrauterine fetus, 32 wks gestational age, cephalic, FH/FM good. Based on the lab values available at that time, the obstetrician arrived on the diagnosis of HELLP syndrome initially & termination of pregnancy was decided. On 31/8/12, it was decided to induce labour with cerviprim gel instilled p/v -1.15pm.

Serology lab results came in the evening, showed WIDAL : non reactive and DENGUE:

positive for IgG & Ig M Due to non progress of labour & worsening general condition like dyspnea, the obstetrician decided to take up the patient for emergency caesarean section. The duty anesthetist was informed about the patient status at 8pm on 31/8/12 & a preoperative evaluation was done at pt's bed side immediately.

PREOP EVALUATION & ORDERS :

IN THE LABOUR WARD, 8.05 pm:

A case of dengue hemorrhagic fever with jaundice & dyspnea, ? HELLP syndrome to be taken up for emergency LSCS. O/E : pt. febrile, jaundiced, anemic, dyspnoeic (grade III) No symptoms or signs of imminent eclampsia. Blood oozing from all venepuncture sites seen. PR- 120/mt, BP – 120/76 mmHg, Temp- 99C, RR- 30/ mt, SpO2-90% room air. JVP- raised. Frank hematuria present -100ml drained since the past 3hrs. Systems: CVS- S1, S2+, no murmurs, RS – B/L air entry equal, B/L fine inspiratory basal crepts +, P/A- no hepatosplenomegaly, uterus 32 wks size Airway- Modified Mallampatti Scoring- II, neck movements adequate. Patient on nil per mouth since 2pm.

Pre op Orders given:

- pt. assessed for surgery under GA , ASA IV E in view of the life threatening condition
- O2 by mask, propped up position, left sided tilt, Inj. Lasix 20mg iv
- to get high risk informed consent from pt's attenders,after explaining involved risk & need for postop ventilation.
- to arrange 5U FFP, 6U platelets, 2U packed RBC
- hourly strict I/O charting
- Inj.Vit K 1 amp i.v
- to avoid i.m. injections & fluid overload
- antacid prophylaxis
- to follow all sterile precautions intraoperatively
- to arrange for elective postop mechanical ventilation ready.
- To shift the pt to ot with O2 by mask, 6L/mt in headup position with left lateral tilt. Patient was shifted to operating room at 9pm.

IN THE PREOP WAITING AREA , 9pm :

- pt. was conscious but drowsy, dyspneic, more in the supine position, restless, sweating +,
- repeated dry cough +, signs of respiratory distress +
- PR :130/mt, BP :90/60 mmHg, RR-35/mt, SpO2: 90% room air
- CVS :S1S2 +, tachycardia, RS – B/L wheeze & crepts + , P/A: tense, tender,term uterus, FH
- not localized , P/V: bleeding+ clots+ ? ABRUPTIO PLACENTAE
- So, Pt had suddenly developed signs of early stage PULMONARY EDEMA
- O2 by mask, propped up position was given
- Inj.lasix 20mg iv (2nd dose), Inj. Deriphylline 1amp iv

INTRA OPERATIVE MANAGEMENT:

- pt was shifted inside OR,
 - connected to monitors : spo2 , NIBP, ECG
 - 2 nos 18 G IV lines started in both upper limbs & kept on flow with FFP & crystalloids
 - care was also taken to avoid fluid overloading.
 - central venous catheterization was deliberately not done in this patient since there was profuse oozing of blood from all punctured sites, deranged coagulation profile & no further invasive lines were inserted for the same reason.
 - Inj. Glycopyrrolate 0.2 mg iv,
 - laryngoscope, appropriate sized ET tubes, airways, gum elastic bougie , stylet, suction apparatus were kept ready.
 - painting & draping of surgical field by obstetrician was done.
 - pt induced by Rapid Sequence Induction using titrated doses of Inj. Thiopentone 100mg iv slowly, Inj. Suxamethonium 25mg iv and intubated with 7.0mm cuffed oral ETT tube, fixed at 19cm after checking for B/L air entry. Bag compliance soon after intubation checked& was found slightly tight. Inj. Lasix 20mg iv given.
 - Anesthesia was maintained with O2:N2O- 3L:3L , Inj. Atracurium 15+5 +5mg iv Intra-op :
 - PR 110-120/mt
 - BP 90/60- 130/70 mmHg
 - SpO2 97- 99% RS- minimal rales heard in b/l lung bases
 - a term, alive, girl baby wt2.25 kg with Apgar score of 6/10 at 1min, 7/10 at 5min was delivered
 - Grade II abruption of placenta was noted. –soon after baby delivery, -Inj.Morphine 5+3+2mg iv ,Inj. Syntocinon 20U iv infusion in 300mlRL + 10U im. – uterus well contracted .
 - diffuse oozing in surgical field present,tube drain was kept to watch for amount & type of fluid drained. The wound was closed in layers. Surgery time -1 hr 10 min
 - Blood loss- 400ml , Urine output – 100 ml in 1hr (frank hematuria +)
 - blood & blood products : 5U FFP + 3U platelets, 100ml O positive PC transfused
 - Drugs- Inj. Lasix 20+20 mg iv ,Inj.Dexamethasone 8mg iv
 - Inj. Tranexamic acid 500mg iv infusion in 200ml NS slowly was also administered.
- POSTOP :**
- Patient remained intubated, sedated & paralysed,being ventilated.
 - PR 110/mt , BP 120/70mmHg , SpO2 99 (FiO2-1.0) -CVS :S1S2 heard,no murmurs RS: B/L air entry equal, B/L basal crepts +

-P/A : uterus well contracted, minimal oozing from surgical site seen -Ryles tube gently inserted after lubricating it, pt kept nil per R.T. It was planned to provide elective postop mechanical ventilator support. Hence pt was shifted to S.I.C.U. on AMBU ventilation , with supplemental oxygen 6L/mt, with multipara monitor. In S.I.C.U., pt was connected to ventilator with settings of VCV mode, FiO2 100%, rate 12/ mt, TV 500ml, PEEP 5cm H2O. Subsequently, the FiO2 was gradually reduced to 0.5, based on SpO2 & pt's clinical status. She was sedated with Inj. Midazolam, paralysed with Inj. Atracurium & ventilated for 6hrs. During the same period, FFP& platelets were transfused, taking caution against fluid overloading. Continuous monitoring of PR, BP, SpO2, U/O was done. Blood samples also sent for coagulation profile. Pt improved clinically, hence was planned for weaning & extubation after 6hrs. Once she regained full consciousness & muscle power, She was allowed a T- piece breathing trial of 2hrs with 6-8L O2 & in room air for 1hr- both were tolerated well by the pt. without any drop in SpO2 or hemodynamic instability.

Extubation planned after meeting with all extubation criteria, emergency intubation tray, suction apparatus all kept ready.under direct laryngoscopic vision,a gentle suctioning of the mouth& pharynx was done & pt was extubated uneventfully. O2 supplemented by facemask at 4-6l/mt.

Post extubation, pt conscious oriented ,obeying commands, afebrile, breathing comfortably,pt able to cough, clear out secretions PR-100/mt, BP- 140/80mmHg, SpO2 98% room air CVS- S1 S2 HEARD, RS- B/L minimal basal crepts + P/ A- uterus well contracted, no soakage at surgical wound site seen I/O – 2100/1980 ml U/O-700ml Drain- 800ml Pt was shifted from SICU after an observation period of 6hrs to labour ward IMCU. Advice –o2 by mask 6l/mt, propped up position –chest physiotherapy, iv antibiotics, bronchodilators, deep breathing exercises -to get ECHO done, cardiologist & nephrologist opinion -to monitor PR,BP,SpO2 ,I/O charting, Temp, COAGULATION STATUS, s. electrolytes

- to do rpt CBC, aPTT, RFT, LFT, CXR, ECG.

–to replace deficient blood components

Cardiologist opinion (2/9/12,POD-2) :

ECHO- EF50%, global hypokinesia, mild LV dysfunction, trivial MR, normal valves & chambers. cardiac changes probably due to viral myocarditis(dengue induced).

Nephrologist opinion & management

On 01/9/12, POD-1 :pt. has hematuria,raised s.creatinine values- probably due to suspected sepsis induced Acute Kidney Injury. Pt. to be taken up for Hemodialysis, if persistently elevated s.creatinine values are seen. On POD-3, due to elevated RFT values, She underwent 3 cycles of saline hemodialysis- her renal parameters improved to normal.

INVESTIGATIONS & INTERVENTIONS DONE :

DATE	Urea	Creat	Na	K+	IO	platelet	PT/	REMARKS
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1/9	43	2.9	132	4.5	2100/1980	65000	1.15	5U FFP,2U PCV,4U plds given	
2/9	48	2.6	148	5.0	2300/2045,000	00	1.20	4U plds	
3/9	128	4.3	138	4.2	2350/1542,000	00	1.12	4U plds ; 1 st cycle H.D. done(saline)	
4/9	102	3.6	137	4.5	2300/1275,000	00	0.92	3U plds ;2 nd H.D.	
5/9	84	2.8	138	4.7	1800/1690,000	80		3 rd H.D.	
8/9	32	1.8	136	4.3	2600/251.23 lakh	80	0.8		
10/9	28	0.7	138	4.3	2560/2500				
10									

Other investigations-

LFT on POD- 6 : TBR 7.1 Globulin 2.1

DBR 4.7 A/G1.03:1

IBR 2.4 ALP 114

total protein 4.4 SGOT 36

albumin 2.3 SGPT 3

Serology : Anti HAV IgM negative , IgG positive

Anti HCV, HEV IgM negative

Her baby was observed in N.I.C.U. for 3 days. Direct breastfeeding was given intermittently from day 5. She was followed up in the postoperative period & improved clinically, suture removal was done on postop day- 10. A healthy mother & her baby were discharged on postop day 15. This outlines a successful management of a parturient woman with Dengue Hemorrhagic fever complicated by pulmonary edema for Emergency Ceasarean section, who also had postop Acute Kidney Injury & subsequently managed in the Intensive care unit, discharged uneventful.

DISCUSSION:

Dengue fever is caused by genus flavivirus. Dengue is transmitted to humans by the mosquito *Aedes aegyptii* . Dengue infection in pregnancy carries the risk of hemorrhage for both the mother and the newborn. It is now estimated that in general population, over 100 million dengue viral infection occur annually throughout the world. Of which, 2,50,000 progressing to DHF , 25000 deaths among them (WHO census 2009). Due to the antenatal state, our patient carries even more greater risk. She also suffered major organ impairments, as evidenced by:

Heart – global hypokinesia (viral myocarditis)

Lungs – early stage pulmonary edema

Kidneys- hematuria & acute kidney injury

The pulmonary edema developed might be due to continuous fluid leakage from the intravascular compartment to the extravascular compartment and the lung alveolar space, due to altered capillary permeability & viral myocarditis induced global hypokinesia. In this case, the patient needed an emergency surgery in her acute phase of infection which had an additional stress & risk of anesthesia & surgery .This increases the mortality risk further more. But, in the limited time available preop for evaluation & preparation, FFP, platelets transfusion & arrangement of blood components were done to reduce the worsening of DHF. In the post op period also, pt. was supported with mechanical ventilation for pulmonary edema, continuous vigilant monitoring was done in ICU, specialist opinions (cardiologist, nephrologist) were obtained, she underwent 3 cycles haemodialysis & her clinical, laboratory parameters were brought back to normalcy.

CONCLUSION :

The above case report outlines a successful management of a parturient woman with Dengue Hemorrhagic fever complicated by preop pulmonary edema for Emergency Ceasarean section, who also had postop Acute Kidney Injury & subsequently managed in the Intensive care unit, discharged uneventful. In antenatal case, dengue infection is usually misdiagnosed as HELLP syndrome. Dengue infection & Dengue Hemorrhagic fever carries higher risk of morbidity & mortality. So, these type of patients need to be managed in a tertiary center, where an integrated approach of various specialities is possible in reviving them successfully.

