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Successfully Managed rare Case of Near-death Patient with Pulmonary Edema Complicating Eclampsia with Intrauterine fetal demise with HELLP SYNDROME

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Abstract

Pulmonary edema is rare in patients with severe pre-eclampsia without associated medical, surgical or obstetric complications. But if it occurs, it requires urgent pregnancy termination. Preeclamptic patients have generalised arterial vasospasm resulting in an increased systemic vascular resistance (increased after load), reduced plasma volume (decreased pre-load), increased risk of left ventricular failure due to hyperdynamic heart, impaired renal function, hypoalbuminemia and pulmonary capillary leakage due to endothelial damage. All these changes predispose to an increased risk of pulmonary edema. We report a 20 yrs primigravida from rural India who reached us in near death state with Eclampsia, IUFD, HELLP SYNDROME & pulmonary edema. It highlights the successful outcome if given prompt treatment and symptoms completely disappear within few days of delivery.

Keywords: Eclampsia, Pulmonary Edema, Intrauterine Fetal Demise, HELLP SYNDROME

Introduction

Severe preeclampsia (PE) is one of the major causes of fetal and maternal morbidity and mortality worldwide causing considerable adverse outcome in developing countries where there is poor access and awareness about antenatal care especially in rural locations. Pulmonary edema is one of the most serious and rare complications of preeclampsia that should be ruled out in case of dyspnea in a pregnant woman [1].

HELLP Syndrome is a serious obstetric complication in pregnancy characterised by haemolysis, elevated liver enzymes and low platelet count. Incidence is 0.5-0.9% of all pregnancies and 10-20% of cases with severe preeclampsia and eclampsia. A vicious cycle may occur without expeditious delivery and proper management [2].

Case

We report a case of a 20year old primigravida who was 7 months pregnant & had sudden episode of tonic clonic convulsion early morning at her hometown. She became unconscious, breathless and was immediately rushed to a urban hospital 60 km away from her village (2hrs transit time). There she was intubated, catheterised & blood investigations were sent. Sublingual depin of 10 mg was given to control her high blood pressure of 170/120 mm Hg. Inj MgSo4 14 gm was given by Pritchardt regimen for tonic clonic convulsion. She was diagnosed as Eclampsia with IUFD. She was then transferred to our hospital (140 km away from urban hospital) for Obstetric Management of the dead fetus. She reached us at late evening, 12 hours after her 1st episode of tonic clonic convulsion. Our prompt & careful observation revealed that she was unconscious, intubated, had tachycardia with PR of 184/ min, BP= 110/90 mm of Hg & Spo2 of 87%. On auscultation there was crackling sounds in both lung bases. This crackling sound RUNG the bell of the rare complication of pulmonary edema complicating this very obvious looking case of ECLAMPSIA with INTRAUTERINE FETAL DEMISE (IUFD). There was ~ 100 ml of minimally red tinged urine in urine bag.

On Per Abdominal examination, uterus was 26 weeks with absent fetal heart sounds. On Per Vaginal examination she was not in labor and cervix was 1cm dilated with 20% effacement. On Ultrasound, the fetus had spalding sign and severe oligoamines suggestive of long standing IUFD. Chest X-ray showed alveolar opacities located in the perihilar areas denoting acute pulmonary edema. Echocardiography showed normal cardiac cavities with normal size and function, and confirmed the absence of valvopathy.

Lab parameters	At URBAN HOSPITAL 11/10/20 11 am	At OUR HOSPITAL 11/10/20 9 pm
Haemoglobin (g/dl)	14.2 (haemoconcentration)	13.7
Wbc (/cmm)	26500	24000
Platelets (/cmm)	43000	37000
Sgot (U/l)	294	306
Sgpt (U/l)	499	523
s.creat (mg/dl)	1.23	1.4
Urine albumin	trace	1+
Blood group	B negative (rare)	
Suggestive of Homolysis with Elevated Liver enzymes with Low Platelets. (HELLP SYNDROME)		

Pt was admitted to Intensive Care Unit (ICU) & was kept on Controlled Mode Ventilation (CMV) with FiO2 100%. Blood products – Platelet Rich plasma (PRP), Fresh frozen Plasma (FFP), Packed Cell Volume (PCV) were being arranged and hunted for her RARE BLOOD GROUP OF B NEGATIVE. We planned to do urgent emergency Lower Segment Ceserean Section (LSCS) to deliver the dead baby as soon the blood products were in hand.

But as time lapsed, her situation started worsening with continuous pink frothy secretions filling up the endotracheal tube (ET). The urine was becoming dark red tinged suggesting the worsening of HELLP SYNDROME. Saturation was fast dropping up to 70% despite being on CMV mode with FiO2 of 100%. Patient was urgently wheeled into the OPERATION THEATRE at 1am on 12th Oct 2020 as soon as blood products were available.

Emg LSCS	Male	12/10/2021
Dead & Macerated fetus	1 kg	1.15 am

During the operation, from every cut & every stitch blood was oozing profusely & hemostasis could be achieved with great difficulty. CONTINOUS BLOOD PRODUCTS - PRP, FFP & PCV were being transfused. Continous aspiration of secretions from ET tube was being done. RETROPLACENTAL CLOTS OF APPROXIMATELY 1 litres was removed. COUVELIER UTERUS was noted.(UTEROPLACENTAL APOPLEXY). Totally 16 bottles of PRP, 16 ffp, and 4 PCV were transfused intraoperatively and within 24 hours. Again 8 prp, 4 ffp and 2 pcvs were transfused on day 2.

Post Ceserean patient was on Ventilator for next 5 days. Patients frothy secretions from the ET decreased, SPO2 improved, red tinge in urine strated clearing off.

She was treated with INJ LASIX 80 mg loading dose followed by 40 mg iv 12 hrly., Injection Magnesium Sulphate 2gm in 100ml NS 12 hrly, Labetolol infusion (100mg in 20 ml of injection dissoved in 50 ml NS) 2ml / hr which was slowly tapered down as per BP Monitoring. Patient recovered well and her ventilator settings were gradually tapered and she was extubated on 5th day after LSCS. She had dramatic recovery and suture removal was done on 10th post operative day. She went home with feelings of deep gratitude for saving her life.

Discussion

Pulmonary edema is rare in patients with severe pre-eclampsia (PE) without associated medical, surgical or obstetric complications. In a study by Sibai et al, pulmonary edema was diagnosed in only 2.9% of cases of severe preeclampsia. Mechanisms to explain the pathogenesis of pulmonary oedema in severe pre-eclampsia are hypervolaemia, left ventricular failure and pulmonary capillary leakage [3]. Commonest complications include Intravascular coagulopathy, renal failure, and HELLP syndrome [4,5]. There is increased risk of adverse maternal outcome by 8.7-fold [6]. Cerebral hemorrhage, pulmonary edema, renal failure, and/or intravascular coagulopathy are the causes of maternal death in severe PE [4,6]. Long-term complication includes chronic renal failure, persistent hypertension, and/or cortical blindness [6].

Inference from sibai.et al study in which ICU was opened in the labor and delivery area of a city-county hospital having approximately 7500 deliveries annually [7]. They realized that the utilization rate of 0.9% and the severity of illness were sufficient to justify such a unit. Main indications for admission were A) hypertensive disorders (46%), B) massive hemorrhage (10%), C) medical problems of pregnancy (44%). Identifiable benefits of the unit were as follows: (1) Intensive observation and organization allowed for prevention or early recognition and treatment of complications; (2) familiarity with invasive monitoring permitted personnel to exert prompt, rational treatment of hemodynamically unstable patients; (3) continuity of care was improved before and after delivery; (4) residents and fellows learned a great deal about intensive care and the management of rare medical complications of pregnancy.

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