

## Case Report

# Concealed abruptio-placenta and disseminated intravascular coagulopathy: a near fatal management experience in a peripheral center

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### ABSTRACT

Disseminated Intravascular Coagulopathy (DIC) is a fatal complication. In pregnant mothers concealed abruptio placenta though less commonly occurring but more dangerous is a compounding factor for development of DIC. Ascending uterine infection in premature rupture of membranes and PIH are also compounding factors in causing DIC. However, the outcome is not very positive in majority of the cases. While managing such cases in peripheral setting, it is most pertinent to keep in mind the possibility of rapid deterioration of clinical condition of such patients, which might progress to fatality. Therefore, timely institution of resuscitative and supportive measures in such labile patient is of utmost necessity while delivering peri and post-operative care. The interesting case report discussed in this patient also was of life threatening severity but timely institution of whole blood transfusion, FFP and fluid support was immensely helpful in saving the patient in peripheral setup despite her undergoing three consecutive life saving surgeries and a peri-operative cardiac arrest.

**Keywords:** Concealed abruptio-placentae, Cesarean hysterectomy, Disseminated intravascular coagulation, Post-partum hemorrhage

## INTRODUCTION

Abruptio-placenta is a Latin word, meaning premature placental separation. It is a main cause of bleeding per-vaginum (PV) towards full term of pregnancy and complicates approximately 1% of pregnancies.<sup>1</sup> Pregnancy-induced-hypertension (PIH), Inferior vena cava compression, anomalies of uterus etc. are major contributors. Abruptio-placenta predominantly the concealed type classically complicates into disseminated intravascular coagulopathy (DIC).<sup>2</sup> We report a successful but near fatal management experience of a case of concealed Abruptio-placenta complicating into DIC, wherein, the patient underwent a turbulent clinical course with repeated major surgical, anaesthetic and

critical interventions besides an episode of peri-operative cardiac arrest.

## CASE REPORT

A 24-year-old primigravida was admitted with 37(+) weeks amenorrhea, PIH, mild pallor, pedal edema blood pressure (BP) 140/90 mmHg, heart rate (HR) 86/min, fetal heart rate (FHR) 140/min, regular, urine albumin ++ and non-contributory past medical history. Ten hours pre-admission, she developed premature rupture of membranes (PROM). Five hours post-admission she developed severe lower abdominal pain with HR:156/minute, BP:166/96mmHg. Uterus was tense and tender with FHR:100/min. Her PIH profile was

acceptable (Table 1); hence, due to fetal distress, taken up for emergency cesarean section under lumbar sub-arachnoid block. After delivery of a 3.5Kg healthy female baby, a large retro-placental hematoma was discovered. Uterus contracted well with Inj Carboprost tromethamine (Prostodin) 250mcg I/M and Oxytocin infusion. Heavy bleeding PV, HR:182/min and BP:90/58 mmHg was noticed in recovery room. Uterus was flabby and non-responsive to uterotonic drugs and uterine bimanual compression massage. Re-exploration under general anaesthesia (GA) revealed a flabby uterus and profusely oozing surgical field.

**Table 1: Investigations for PIH profile.**

Investigations
Hemoglobin
Total and differential leucocyte count
Urine for albumin
Serum Bilirubin with AST and ALT
Blood urea and serum creatinine
INR and platelet count
Serum uric acid

Patient was getting hemodynamically unstable; therefore, emergency obstetrical (cesarean) hysterectomy was performed. Post-operatively, her coagulation profile was highly deranged (Hemoglobin: 06 gm%; PT Control: 14 sec; Test: 45 sec; PTTK-Control: 32sec; Test: 01 min 10 sec; Platelets: 95000/cmm; Toxic granules: positive). She was oozing heavily from incision site, while pelvic drain bags were filling up rapidly.

Fresh whole blood transfusion was started along with Inj. Vitamin-K and Inj. Aminocaproic acid. Bleeding appeared to reduce after four hours of initiation of FFP transfusion; but abdominal girth and hemodynamic instability continued to progress; hence, she was put on vasopressors and re-explored under GA.

This time while undergoing induction with Inj Ketamine, she sustained peri-operative cardiac arrest but successfully resuscitated. A large volume intra-peritoneal blood collection was removed but heavy oozing from entire surgical field was continuing; hence abdomen was packed with sterile gauze and left unsutured. She was placed on elective mechanical ventilation and vasopressor support along with FFP and fresh whole blood transfusion in ICU.

Patient thereafter developed transfusion related acute lung injury which was managed conservatively. Besides lots of intravenous fluids, 23 units of FFP and 24 units of fresh whole blood were transfused. She lost approximately 12,600 ml blood in initial 20 hours. Within 48 hours her bleeding reduced, coagulation profile and hemodynamic status started normalizing. She was gradually weaned off from mechanical ventilation and vasopressor support after 07 days and discharged on 40<sup>th</sup> post-operative day with a healthy female baby.

## DISCUSSION

Complications during pregnancy or in the postpartum period can be life-threatening.<sup>3</sup> Abruption placenta was first recognized in 1609 by Louise Bourgois. It is one of the important causes of ante-partum hemorrhage complicating into more than 50% DIC cases.<sup>4</sup> Though, exact etiology of premature placental separation is obscure, the evidence suggests PIH to be the most probable cause. Incidence of Abruption-placenta is up to 1.5%, out of which 0.3% cases occur in term pregnancies.<sup>5</sup> Ultrasound however is not a very sensitive investigation for diagnosing or excluding Abruption-placenta; thus, a few cases escape diagnosis. Abruption may either be revealed or concealed (less common but more dangerous and without any obvious vaginal bleeding). Concealed abruption accounts for about one third of all abruption cases. Concealed abruption is highly prone to complications, in which extravasation of blood and dissociation of uterine muscle fibers leads to extensive destruction of uterine muscle tissues resulting in uterine atony and complicating into DIC and hypovolemic shock.<sup>1</sup>

Uterine atony related DIC commonly manifests as Post-partum hemorrhage (PPH) and one of the primary indications for Cesarean hysterectomy.<sup>6</sup> Clinical picture of abruption-placenta, bleeding tendency and deranged investigations (platelet count, INR, PTTK, FDPs and D-dimer) confirm DIC. Bleeding from incision site in the presence of DIC may pose problems to control. Therefore, after delivery, the patient needs to be monitored diligently, with careful attention to vital signs, amount of blood loss, and urine output. The uterus needs to be closely observed to ensure that it remains contracted, since; it may become intractably atonic any time and might require hysterectomy.<sup>1</sup> DIC enhances the risk of organ failure with mortality rates soaring to 80% in severe disease.<sup>7</sup>

PPH (secondary to DIC) remains a major cause of maternal mortality worldwide.<sup>8</sup> Early detection of cause, supportive therapy and aggressive resuscitation with fluids, blood, FFP and coagulation factor replacement is vital for reducing morbidity and mortality.<sup>2</sup> However, FFP transfusion remains the mainstay of treatment in an established case of DIC.

In most cases, PPH can be managed conservatively by vaginal packing and uterotonic agents, while refractory bleeding might require surgical uterine devascularisation procedures or emergency hysterectomy,<sup>8</sup> especially in a hemodynamically unstable patient.

Our patient was a known case of PIH and per-operative finding of a large retro-placental hematoma, leading to atonic uterus and severe PPH indicated towards the presence of a concealed abruption-placenta which subsequently complicated into DIC,<sup>9</sup> necessitating an emergent lifesaving Cesarean hysterectomy. Although,

concealed abruptio placenta is an uncommonly occurring and more dangerous variety but not all cases land up into DIC and PPH. However, our patient unusually complicated into sudden and severe DIC, possibly consequent to ascending uterine infection due to premature rupture of membranes, experienced a severely turbulent, near fatal clinical course, besides a successfully revived intra-operative episode of cardiac arrest.

## CONCLUSION

DIC is an acquired complication associated with severely deranged coagulation profile and high maternal mortality rate.<sup>10</sup> Ascending uterine infection due to prolonged premature rupture of membranes is also contributory to DIC.

Careful monitoring, early diagnosis and prompt surgical intervention in concealed abruptio-placentae are the hallmarks for successful prevention and management of serious life threatening DIC. Failure to diagnose early, anticipate early warning signs and stages of DIC are sited as major lacunae in management of women dying from obstetric hemorrhage.

Though FFP transfusion remains the mainstay of treatment in an established case of DIC but timely decision to intervene surgically is vital in saving the mother from deadly clutches of DIC. Cesarean hysterectomy though is a taxing procedure but when it is lifesaving, the decision needs to be taken judiciously before the patient spirals into irreversible shock. Despite all efforts, DIC still remains the spine-chilling nightmare for the treating team and a major threat to patient's life.

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