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CASE REPORT

Placental abruption and severe disseminated intravascular coagulopathy

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Abstract. We describe a case of a 39 year old Para I with Disseminated Intravascular Coagulation (DIC) following abruption of placenta at 29 weeks of gestation. She was operated four times and was transfused with 40 units of packed red cells, 43 units of fresh frozen plasma, 15 units of platelets and 36 units of cryoprecipitate. She presented with no history of thromboembolic disorders and there was no evidence of thrombophillia according to the laboratory investigations. *Hippokratia 2005; 9 (3): 130-131*

Key words: *disseminated intravascular coagulation (DIC), placenta abruption, peripartum hysterectomy*

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Disseminated intravascular coagulation has long been associated with increased mortality especially in cases of placental abruption. This issue makes the efforts having an available method of understanding and treatment of the syndrome quiet important. New information about the pathophysiology and treatment of DIC become available every day and promises new hope of an improved prognosis for this disorder.

Case report

This is a case of a 39 year old woman, at the 29th week of her first pregnancy, with a previous caesarian section due to cord prolapse and no other medical history.

On the morning of the 17/08/02 she was transferred to the obstetric department of the General Hospital of Katerini. She had significant hemorrhage per vagina, abdominal pain and abnormal findings from the CardioTocoGram (CTG). The diagnosis of placenta abruptio was made and she was transferred immediately to theatre. An emergency caesarian section was performed and a live male infant, with Apgar scores 1^{8} and 5^{9}, weighing 1500gr was delivered. The operation was uneventful but, shortly after theatre she presented with severe post-partum hemorrhage. Efforts were made to control bleeding with intravenous infusion of syntocinon and ergometrine according to protocols and the vagina was tamponated with swabs. Due to DIC, she was transfused with 11 units of packed red cells, 8 units of fresh frozen plasma and was transferred to Hippokratio General Hospital of Thessaloniki.

She arrived at 13.15, in critical condition(Ht:15,3 Hb:5,17 Plt:29.000 INR:3,75 PT:23,9 PTT:10,12 Fibrinogen:97 D-dimers>10.000ng/ml) and she was immediately transferred to theatre. A subtotal hysterectomy and repair of bladder injuries, from the previous caesarian section, was performed. The patient was transfused with 10 units of packed red cells, 10 units of fresh frozen plasma and 5 units of cryoprecipitate.

At 17.20 she was transferred to theatre again. The observations of her vital signs and the blood results (Ht: 15,2, Hb:5,1, Plt:66,9) were unsatisfactory. A total hysterectomy was performed but due to disseminated intraperitoneal bleeding, haemostatic swabs were placed intraabdominally and a tampon in the vagina. She spent the following 48 hours in the intensive care unit where she was transfused with 19 units of packed red cells, 25 units of fresh frozen plasma, 15 units of platelets and 31 units of cryoprecipitate.

Two days later she was stable, her blood results were improved and was transferred to theatre for the last time in order to have the swabs removed. The operation was uneventful and haemostasis was secured. Two days later she was transferred from the intensive care unit to the gynecological ward with Ht:30, Hb:10,8, Plt:80.000, INR:1,31, PT:12,2, PTT:30, Ddimers:800 and fibrinogen:525.The following days there was a significant improvement both in her clinical condition and the blood results. She remained in the hospital until the 04/09/02 and then was discharged home.

Discussion

The subcommittee on DIC of the scientific and standardization Committee of the International Society on Thrombosis and Haemostasis (ISTH) has recently proposed the following definition of DIC: DIC is an acquired syndrome characterized by the intravascular activation of coagulation with loss of localization arising from different causes. It can originate from and cause damage to the microvasculature which if sufficiently severe, can produce organ dysfunction[1]. The syndrome is characterized by a systemic activation of the blood coagulation system, which results in the generation and deposition of fibrin leading to micro vascular thrombi in various organs and contributing to the development of multi-organ failure. Consumption and subsequent exhaustion of coagulation proteins and platelets, because of the ongoing activation of the coagulation system, may induce severe bleeding complications[1].

Placenta abruption is the premature separation, either partial or total, of a normally implanted placenta [2]. Placenta abruptio occurs in 1%-2% of pregnancies and approximately 10% are severe enough to threaten fetal viability. Coagulopathy occurs in 10% of cases of abruption and is more common in cases of fetal distress or fetal death [2].Abruption is the most common cause of hemorrhagic DIC in pregnancy [3]. The degree of placental separation correlates with the extent of DIC, suggesting that leakage of thromboplastin-like material from the placental system is responsible for the occurrence of DIC [1]. Significant hemorrhage is common in placental abruption DIC. This hypercoagulable state is maintained by repeated release of thromboplastic material into the circulation. The presence of blood in the uterine wall likely stimulates contraction of myometrium, which in turn results in decreased venous return from the uteroplacental system [4]. Eskes suggests that the hyper contractile state of the uterus in placental abruption maybe a protective mechanism by which the maternal circulatory system is protected from further stimulation of the coagulation cascade.

The cornerstone of DIC treatment is the specific and aggressive treatment of the underlying disorder. Supportive measures like plasma, platelets, cryoprecipitate and packed red cells' transfusion may positively affect morbidity and mortality. In addition, strategies that interfere with the coagulation system, such as activated protein C transfusion, were found to be beneficial in experimental studies [1]. The incidence of emergency hysterectomy is reported to range from 0.2 to 1.5 per 1000 deliveries. Zelop et al reported from the USA a high incidence of 1.55/1000 deliveries [5]. Gardeil et al reported from Ireland a low incidence of 0,2/1000 deliveries[6]. Engelsen et al. reported from Norway incidence of peripartum hysterectomy 0.2/1000 deliveries[6].

Some authors[5-7] describe preoperative attempts to control bleeding, but most studies lack information about specific measures that can be applied before resorting to peripartum hysterectomy. In the literature[5, 7, 8] a total hysterectomy is recommended rather than a subtotal to avoid hemorrhage from the cervical branch of the uterine artery, troublesome discharge and future cyclic bleeding from the cervix. Contact with a hematologist to optimize the supply of blood products and to adjust disturbances in the coagulation system is recommended.

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