ACUTE DISSEMINATED INTRAVASCULAR COAGULATION FOLLOWING INTRA-AMNIOTIC HYPERTONIC SALINE INJECTION

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Acquired coagulopathies in obstetric practice are being recognised more and more after rapid advancement in the understanding of coagulation and fibrinolytic mechanisms. Now a days medical termination of pregnancy (M.T.P.) with injection of hypertonic salt solution into the amniotic cavity has become a common procedure. Disseminated intravascular coagulation (DIC) after such procedure have been occasionally reported (Sedaghat and Ayromolooi, 1972). Recently we came across one such case with fatal outcome. In view of the rarity of such condition, particularly in India it was thought proper to report this case which would alert the obstetricians regarding this rare complication of MTP.

CASE REPORT

Miss K. A. a 15 year old unmarried Hindu primigravida was admitted to the Obstetrics and Gynaecology Department of MKCG Medical College Hospital, Berhampur (Gm) on 30-4-1976 with history of five months amenorrhoea. On examination, she was healthy and the uterus was 20 weeks size. There was no history of coagulation disorder with her nor in any of her blood relatives. Next day 200 ml. of 20% saline was injected into the amniotic sac after aspirating 150 ml. of amniotic fluid. Fourteen hours later she delivered the foetus, but the placenta and membranes were expelled two and half hours after delivery. Postpartum haemorrhage continued inspite of methergin injections and syntocinon drips. She also started bleeding from gums. Digital exploration did not reveal any retained products of conception and uterus continued to remain flabby without any contraction and her condition deteriorated. Mephantin injections and intravenous fluid administration could not raise the blood pressure and she went into a state of profound shock 4 hours after delivery. She was transfused with two bottles of blood (500 ml.). There was temporary improvement and bleeding per vagina ceased temporarily. Thereafter her abdomen became distended with signs of peritonitis. 500 ml. of haemorrhagic fluid was aspirated from the stomach. On further aspiration all samples contained haemorrhagic fluid. Bleeding per gum and bleeding per vaginam continued. Inspite of all resuscitation measures and heparin administration the patient expired 16 hours after delivery.

Laboratory Findings

Coagulation studies were done by standard methods (Dacie and Lewis 1974) about 10 hours after delivery before the patient was transfused with following results; Hess's capillary resistance test-negative, Ivy's bleeding time—5 minutes, Lee and White coagulation time—10 minutes, Clot retraction—poor, 24 hours clot lysis—normal, Platelet count—80,000 per cmm. of blood, Quick's one stage prothrombin time—control 16 seconds, test 24 seconds, Thromboplastin generation test revealed plasma and serum defects. Estimation of fibrinogen or

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fibrinogen degradation products were not performed.

Blood count revealed reticulocytes 4 per cent, haemoglobin 7 gm. per cent, haematocrit 22 per cent, White cell count 3,500 per cmm. of blood with normal differential count. There were large number of schistocytes and irregularly contracted red cells. Moderate number of poikilocytes, polychromatic cells and few microspherocytes were observed in the peripheral smear. Platelets appeared less than adequate in number with many giant platelets and occasional megakaryocytic fragments.

Discussion

The knowledge regarding the pathophysiology of aquired coagulation disorders has advanced rapidly during the last decade particularly after introduction of highly sensitive diagnostic techniques. DIC develops in a verity of conditions and obstetric emergencies constitute a major group. Although the pathogenesis of DIC is multifactorial, the entry of thromboplastic substances into the general circulation is a major factor that produces DIC in obstetric cases. In obstetric practice DIC has been reported in abruptio placentae, septic abortions, amniotic fluid embolism, intrauterine foetal death and many similar conditions (Wintrobe, 1974).

Diagnosis of DIC was made in the present case from the haematological features such as thrombocytopenia, increased prothrombin time and presence of large number of schistocytes and microspherocytes in the peripheral blood smear. Acute defibrination was not considered to be important as there was normal clot lysis. The poorly retracted clot showed slight or no change after 24 hours. In acute defibrination syndrome blood may fail to clot or produce a thin wispy clot which lyses quickly. Although euglobulin clot lysis and fibrin plate lysis procedures are more sensitive indicators of fibrinolysis the same cannot be performed in many laboratories particularly during such emergency situations. Further platelet count remains within normal limits and schistocytes are not found in peripheral blood smear in fibrinolytic states. But some degree of fibrinolysis cannot be excluded in the present case as fibrinolysis is always associated with DIC (Wintrobe, 1974). Micro-angiopathic haemolytic anaemia was excluded due to prolonged one stage bleeding time and severe bleeding manifestations.

Stander *et al* (1971) first reported mild-degree of DIC following intra-amniotic hypertonic saline injection in 4 cases. Those patients had no bleeding manifestations. Thereafter another case of DIC with severe bleeding following intra-amniotic hypertonic saline injection was reported by Sedaghat and Ayromalooi (1972). The clinical and haematological features of the present case were very similar to the case reported by Sedaghat and Ayromalooi (1972). In the above report the patient started bleeding per vaginam 11 hours after intra-amniotic saline injection. She also bled from the needle puncture wound over the wall of the uterus into the peritoneal cavity and in addition bled from gum and into the stomach. The patient reported by the above authors could be saved by infusing seven units (3,500 ml.) of blood and heparin administration. Perhaps our case could have been saved with more blood transfusions which could not be procured in time. The deterioration was quick as she went into the stage of shock resulting in hypoxia and hypoperfusion which worsens the DIC state. During the stage of shock synthesis of coagulation factors in the liver is impaired (Wintrobe, 1974) giving rise to further deficiency particularly at the time of increased demand.

Summary

A fatal case with acute DIC following intra-amniotic hypertonic saline injection for medical termination of pregnancy has been reported. Laboratory findings are given and the pathogenesis discussed briefly. Relevant literature on the subject has been reviewed.

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