Monozygotic dichorionic diamniotic twin pregnancy complicated by HELLP syndrome – the case study

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Abstract
Arterial hypertension is a serious complication in pregnancy, life-threatening both for the mother and the fetus. It occurs more frequently in multiple rather than singleton pregnancies, has a tendency to present at an earlier stage of pregnancy and often takes the form of "galloping" hypertension, leading to eclampsia. Also, HELLP syndrome, the most severe form of pregnancy induced hypertension (PIH), is diagnosed more frequently in those cases. The article presents a case of a patient at 35 weeks of gestation of a monozygotic, dichorionic, diamniotic pregnancy complicated by complete HELLP syndrome. Early diagnosis and emergency cesarean section prevented fetal damage and severe complications in the mother.

Key words: HELLP syndrome, twin pregnancy, monozygotic dichorionic pregnancy

Introduction
Clinical manifestations such as hemolysis, disturbed liver function and thrombocytopenia in pregnancy have been diagnosed as pregnancy induced hypertension and eclampsia since the 1950s [1]. In 1982 Weinstein collected and described 29 such cases, claiming they were examples of a distinct clinical entity, and called it HELLP syndrome [2]. HELLP syndrome incidence is reported as 0.17-0.9% of all pregnancies and 4-12% of pregnancies complicated by pre-eclampsia and eclampsia worldwide [3, 4]. Due to the fact that in multiple pregnancy hypertension occurs 12.4 fold more often and pre-eclampsia 6.7 times more often, frequently taking the "galloping" form, it quickly leads to eclampsia [5]. Undoubtedly, due to these reasons HELLP syndrome is diagnosed much more often as well, 7-9% of those cases [6].

The authors present a case of a patient at 35 weeks of gestation of a dichorionic diamniotic twin pregnancy, complicated by a complete HELLP syndrome.

Case report
The patient (age: 35, CIII PII Hbd 35) in spontaneous dichorionic diamniotic twin pregnancy was admitted to hospital in Kutno due to edema, arterial hypertension and diabetes. The previous pregnancy ended in a cesarean section due to lack of labor progression. The overall condition of the patient before pregnancy was good, without any chronic diseases or abnormal clinical and laboratory findings.

At 26 weeks of gestation cervical incompetence was diagnosed and a pessary was inserted into the cervical canal. The patient was diagnosed with gestational diabetes at 31 weeks of gestation (treated with rapid-acting insulin, Novorapid), and with arterial hypertension at 32 weeks of gestation (controlled with Methyldopa). At 33 weeks of gestation the patient was hospitalized in order to assess pregnancy development. Physical examination (RR 130/80 to 120/70 mm Hg) and laboratory blood tests (morphology: Hb – 13.1 g/dl, Ht – 39.0%, thrombocytes – 152.000/ml, uric acid level – 4.2 mg/dl, Creatinine – 0.67 mg/dl, total protein – 5.45 g/dl, normal AST and ALT levels, normal daily glucose profile) and urine tests (albuminuria 100 mg%) were normal. The patient was discharged home after 5 days in good overall condition.

The patient was readmitted at 35 weeks of gestation. Upon admission physical examination revealed: edematous legs and hypogastrium, blood pressure 150/100 mm Hg, pulse 90/min., temperature 36.7°C. Urine tests were normal with the exception of albuminuria – 300 mg%. Blood tests morphology: Hb – 9.4 g/dl, Ht – 27.1%, elementary bodies –100.000/ml, uric acid level – 5.5 mg/dl, Creatinine – 0.91 mg/dl, AST – 120 U/L, ALT – 154 U/L. Other results were normal. Vaginal examination revealed pessary on the cervix and abundant vaginal discharge (a smear was taken for bacteriological examination). Fetal heart rates were normal. CTG was normal for both fetuses. Methyldopa, Augmentin and Clexane were administered.
Clear amniotic fluid ruptured the next day. Physical examination revealed increasingly edematous legs and hypogastrum, RR 160/100, heart rate – 92/min, temperature – 36.8°C. No uterine contractions. Vaginal portion of the cervix disappeared completely, external os 4 cm dilated. Normal CTG of both fetuses. The patient additionally received Nepresol, Deksemetazon 12 mg intravenously. Blood was taken for tests.

In the afternoon the patient started to complain of headaches, abdominal pain, nausea and deteriorating overall condition. Physical examination revealed mild tenderness to palpation in the right subcostal region. Amniotic fluid was green. RR – 160/95 mmHg, yellow conjunctivae. Blood tests: morphology, Hb – 11.0 g/dL, Ht – 32.9%, elementary bodies 14²/µl (blood platelets did not aggregate); coagulation system, PT – 12.6 s, INR PT – 100%, APTT – 37.7 s, Creatinine – 0.91 mg/dl, uric acid – 6.0 mg/dl, total protein – 5.13 g/dL, AST – 285 U/L, ALT – 350 U/L, total bilirubin – 2.58 mg/dL, CRP – 136.2 mg/l. CTG – decreased oscillation in one of the twins.

The clinical and laboratory findings suggested pre-eclampsia with severe HELLP syndrome.

Preparations of platelet, plasma and erythrocyte were ordered. 2 units of fresh frozen plasma were given, 8 mg deksametazon, magnesium sulfate and dihydralazine (Nepresol) were administered intravenously. Due to the developing HELLP syndrome, deteriorating condition of the first fetus, pelvic presentation of the second fetus and previous cesarean section, an emergency c-section was performed.

Lower segment cesarean section was performed due to the possibility of heavy blood loss (platelet count approx. 14²/µl). Two male fetuses were delivered. First fetus: weight 2400 g, length 48 cm, Apgar 6 and 7. Second fetus: weight 2360 g, length 51 cm, Apgar 5 and 6. 1 amp of Carbetocin, 1 amp of Methergine and 1 g of Cefazolin were administered during the perioperational period. The course of the operation was uneventful. The uterus constricted normally. No subcapsular liver hematomas were found. Other organs without macroscopic changes. No abnormal bleeding from the uterus or the postoperative wound was observed. Perioperational blood loss was 500 ml. The shunts were left in the peritoneal cavity and subfascial area in order to control postoperative hemostasis. The patient was transferred to the Intensive Care Unit where she remained for 3 days.

During the post-operative period the patient received: 2 units of packed red blood cells, 4 units of fresh frozen plasma, 10 units of platelet mass, low-molecular weight heparin, antibiotics, magnesium sulfate, dihydralazine and oxytocin.

Formed elements of blood stabilized within 2 days after erythrocyte, platelet and plasma mass transfusion. On day 4 of puerperium the activity of liver enzymes decreased and on day 7 of puerperium their levels were normal. On day 8 after the cesarean section the patient and the children were discharged home in good overall condition.

Macroscopic examination revealed two separated placentas with a placental septa containing 4 membranes – 2 amnions and 2 chorions (dichorionic diamniotic twin pregnancy). There were two (arterio-arterial and veno-venous) anastomoses between the fetuses. Due to the fact that both fetuses were of the same sex and blood group, it may be assumed that it was a monozygotic dichorionic diamniotic pregnancy with vascular anastomoses.

**Fig. 1a) b). Two anastomoses between the separated placentas (monozygotic dichorionic twin pregnancy)**

**Discussion**

HELLP syndrome is a very serious complication of pregnancy induced hypertension and pre-eclampsia and a direct threat to maternal and fetal life [7]. American research reports indicate that the risk of pre-eclampsia,
and consequently HELLP syndrome, is many-fold higher in multiple than in singleton pregnancy [8]. Due to its high incidence and serious complications in case of a multiple pregnancy, arterial hypertension should be diagnosed as promptly as possible. During each control visit the following information should be collected: thorough history regarding risk factors and prodromal symptoms, blood pressure measurements, body weight, blood and urine tests. Currently, only early diagnosis and termination of pregnancy may prevent fetal damage and serious maternal complications.

References


