Hepatic rupture in HELLP Syndrome: surgical management. A Case Report

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Abstract

Background

Both HELLP Syndrome than Placenta accreta are uncommon and serious complications in pregnancy. Also ruptured sub capsular hematoma in context of HELLP Syndrome is rare and life-threatening complication.

Aim

We described a case of a patient with antepartum HELLP Syndrome and simultaneous right and left lobe hematoma. The analysis of our patient weeks before showed no alterations, so it can be considered a HELLP Syndrome making its debut with liver hematoma. The patient was admitted at 33 weeks of pregnancy after metrorrhagia, during her stay she developed epigastric pain and hypertension, which persisted despite of best treatment. Increasing abdominal distension developed overnight and the patient became hemodynamically unstable. US noticed a considerably amount of blood in the abdomen (around 1000 cc).

Methods and results

An emergency caesarean section was performed, after the quick delivery a placenta accreta with uterine inversion was found. The liver was managed by our surgery unit with abdominal exploration and perihepatic packing. At second look after 48h, liver pack was removed with absence of any potential bleeding. The mother and her newborn were initially admitted to surgical intensive care unit then transferred to the maternity ward after stabilization. They were discharged 24 days later after admission.

Discussion

Hemodynamically unstable patients with HELLP Syndrome associated with hepatic rupture should be treated with control of bleeding based on trauma surgery principles, according with literature review.

Background HELLP sydrome (hemolysis with a microangiopathic blood smear, elevated liver enzymes and low platelet count) develops in <1% of pregnancies, but in 10 to 20% of pregnancies with severe preeclampsia-ecclampsia. Even though it is considered a hypertensive multi-organ disorder of pregnancy, the level of hypertension does not correlate to the severity of the condition; so the diagnosis should be based on biochemical laboratory evidence[1]. Clinical presentation is nonspecific: typical clinical symptoms often are pain in the right upper quadrant abdomen or epigastric pain, nausea and vomiting. The HELLP Sdr. may be misdiagnosed as viral hepatitis, cholangitis and other acute diseases.
The etiology and pathogenesis remains unclear. Van Beek at *al* [2] postulate that abnormal placentation results in placental ischemia and the production of a circulating toxin that causes endothelial cell injury. This will lead to platelet

aggregation with consumption and eventually thrombocytopenia. The haemolysis that occurs is microangiopathic, probably due to shearing stresses fragmenting red blood cells as they pass through small blood vessels with damaged intima and fibrin mesh deposits. This lead to microtrombi and fibrin deposition in the kidney, bringing about acute renal failure, and sinusoidal obstruction in the liver, disrupting hepatic blood flow and causing swelling, ischemia and hepatic rupture.
HELLP Sdr. is a progressive condition and serious complications are frequent. Conservative treatment (> 48 h) is controversial but may considered in selected cases before 34 weeks gestation. Delivery is recommended if the Syndrome occurs after the 34th gestational week or the fetal and/or maternal conditions deteriorate. [3]
Although rare, patients with HELLP Sdr. may present as an emergency with complications of hepatic infarction, hepatic rupture with life-threatening hemorrhage or other surgical complications associated with this condition. Abercrombie described the first case of spontaneous hepatic rupture in pregnancy in 1844. Cases of hepatic rupture in pregnancy are rare, with a reported incidence ranging from 1 in 45.000 to 1 in 225.00 deliveries, but it carries maternal mortality rates of 60-86%.[4]
Complications from HELLP Sdr. may present as an emergency to any surgeon.

Aim We described a case of a patient with antepartum HELLP Syndrome and simultaneous right and left lobe hematoma. The analysis of our patient weeks before showed no alterations, so it can be considered a HELLP Syndrome making its debut with liver hematoma.
The patient was admitted at 33 weeks of pregnancy after metrorrhagia, during her stay she developed epigastric pain and hypertension, which persisted despite of best treatment. Liver function tests and platelets count were normal. Admission laboratory: Hemoglobin 14.1 g/dL; thrombocytes 131.000/μl; AST 31 U/l; ALT 23 U/l; LDH 150 U/l.
Increasing abdominal distension developed overnight and the patient became hemodynamically unstable. US noticed a considerably amount of blood in the abdomen (around 1000 cc).

Methods and results An emergency caesarean section was performed, after the quick delivery a placenta accreta with uterine inversion was found and treated with b-lynch suture. The liver was managed by our surgery unit with abdominal exploration and perihepatic packing after hematoma evacuation (1500 cc).
Laboratory values initially worsen after delivery: Hemoglobin 6.4 g/dL; thrombocytes 75.000/μl; AST 287 U/l; ALT 115 U/l; LDH 539 U/l. Postoperatively, the patient received antihypertensive therapy and magnesium sulfate for prevention of eclampsia. She required correction of coagulopathy with blood units and blood products (platelets and fresh-frozen plasma).
At second look after 48h, liver pack was removed with absence of any potential bleeding. Two suctions drains were place in right subdiaphragmatic and subhepatic area.
The mother and her newborn were initially admitted to surgical intensive care unit and then transferred to the maternity ward after stabilization. The patient was additionally transfused and they were discharged 24 days later after admission.

The patient is followed up with hemodynamic, coagulation parameters, TA-USG. After the 8 week postpartum period was reperformed and showed gradual resolution.

Discussion A spontaneous hepatic rupture on top of HELLP Syndrome is rare but it should be considerate in pregnant patient with a sudden onset of epigastric pain and early hemodynamic shock symptoms. The main issue is to state the early diagnosis of HELLP because its clinical presentation is often delayed due to unclear clinical presentation. Even if the concept of conservative management of patients with subcapsular hematoma or liver rupture is well confirmed by literature, other studies considered it to be inapplicable in patients during pregnancy on top of HELLP sdr. [5]
Hemodynamically unstable patients with HELLP Syndrome associated with hepatic rupture should be treated with control of bleeding based on trauma surgery principles. The optimal management of these patients is evolving and required the involvement of a multidisciplinary team. In our case, multidisciplinary management of this uncommon but severe condition was the key to optimize the prognosis to enhance the survival chances of both the mother and the newborn.

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