

Management of Ruptured Hepatic Subcapsular Hematoma in Hemolysis, Elevated Liver Enzymes, Low Platelets Syndrome: A Case Report

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Abstract

Regular antenatal checkup and early detection of hypertension can lead to better maternal and perinatal outcome. Surgeons as well as obstetrician have to be vigilant to prevent rare complications like subcapsular hematoma. Every patient of gestational hypertension being operated should also undergo examination of liver to preclude these complications in future. 30-year-old female admitted in Government Medical College, Nagpur as a case of G3P0A2 at 34 weeks of gestation with impending eclampsia with severe intrauterine growth restriction with severe oligohydramnios. An emergency cesarean section was performed. The patient went in shock 1½ h of the cesarean section so she was explored for hemoperitoneum. There was subcapsular liver hematoma with rupture intraoperatively. A external compression was done and drains were kept. Postoperatively, patient was managed conservatively with blood and blood products. The patient was discharged after 5 weeks of hospital stay in stable condition.

Key words: Hematoma, Hepatic subcapsular, Operative management, Rupture

INTRODUCTION

The hemolysis, elevated liver enzymes, low platelets (HELLP) syndrome is associated with preeclampsia. Subcapsular liver hematoma has been reported in <2% of pregnancies complicated by HELLP syndrome. Subcapsular liver hematoma may result in hepatic rupture. The incidence of subcapsular liver hematoma with rupture in pregnancies varies from 1/40000 to 1/250000. Moreover, this significantly increases both maternal and perinatal morbidity and mortality. In this case, we report a subcapsular liver hematoma managed by both operative and conservative measures.

CASE REPORT

A 30-year-old female referred to Government Medical College and Hospital, Nagpur, on 4th August 2015 as a case of gravida 3 abortion 2 at 34 weeks gestation with impending eclampsia with severe intrauterine growth restriction and severe oligohydramnios. An emergency cesarean section was performed in view of fetal distress and delivered a female child of 1.7 kg at 12.47 p.m. Intra-operative findings were hemorrhagic peritoneal fluid of around 100 cc and liquor was thick meconium. The patient was shifted to post-operative ward at around 2.00 p.m. Laboratory investigations were as follows¹:

On 4.8.15 (on admission)
Hemoglobin (Hb): 9.4 g% (12.00 p.m.) - Around (8.00 p.m.)
Hb: 6.8 g%
International normalized ratio: 1.4
Platelet: 600,000/cumm
Bilirubin: 1.4 mg%
Urinary protein: -3+
Kidney function test:
Blood urea: 50 mg%

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Serum creatinine: 1.2 mg%

Liver function test:

Serum glutamic oxaloacetic transaminase: 247 U/UL

Serum glutamate pyruvate transaminase: 212 U/UL

Alkaline phosphatase: 24 kau

Suddenly at 3.30 p.m. patient went in shock, her pulse became feeble, blood pressure was non recordable and patient was not maintaining oxygen saturation. Furthermore, there was abdominal distension so hemoperitoneum was suspected and an urgent transabdominal ultrasound (USG) guided tapping was performed (Figures 1 and 2). Hemorrhagic fluid on tapping was confirmatory and an urgent decision of exploration was taken.

Immediately, patient was shifted to operation theater for exploration. Intraoperatively there was collection of around 700 cc frank blood with large blood clot adherent to liver surface seen, hence surgeons were called (Figure 3). There was also evidence of active blood oozing from capsular breach on liver surface of size 10 cm × 5 cm suggestive of subcapsular hematoma with spontaneous rupture.

External compression was done for 10 min and hemostatic material, surgiseal was kept over the hematoma. Meanwhile, the uterus became flabby so prophylactic B-lynch sutures were taken. Sub-hepatic drain on the right side and drain in pelvic space on the left side was kept.

The patient received 3 units of red packed cells, 3 units of fresh frozen plasma, 2 units of platelet concentrate. Anti-hypertensive treatment was started to the patient along with antibiotics.

On the seventh post-operative day patient had continuous spikes of fever of 103°F, the patient was thoroughly investigated. USG was suggestive of ill-defined hyperechoic area in superior border of right and left lobe of liver in supcapsular region but the decision was taken to manage the hematoma conservatively.

On 12th post-operative day, patient had sudden onset of breathlessness with tachycardia. Urgent electrocardiogram (ECG) and X-ray chest were done,

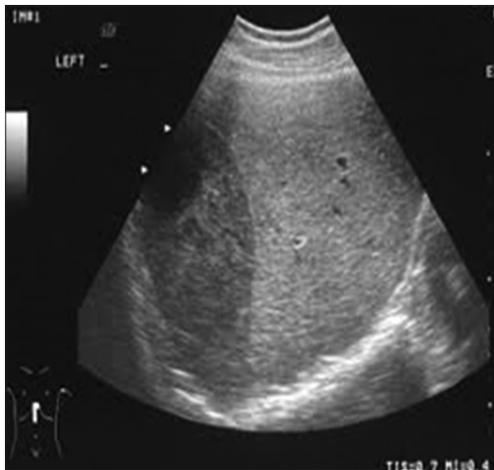


Figure 1: Free fluid in peritoneum



Figure 3: Subcapsular hematoma

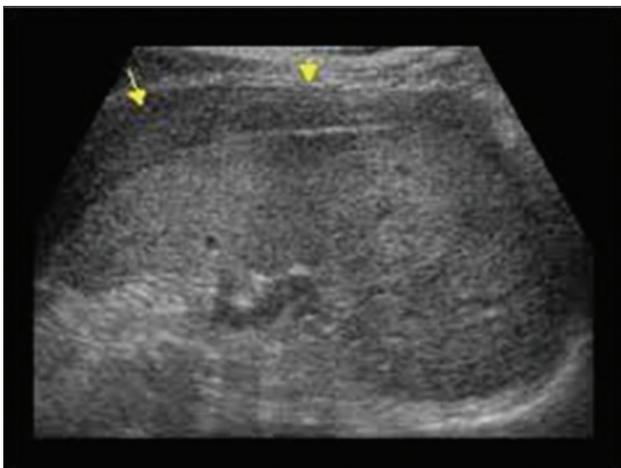


Figure 2: Subcapsular collection

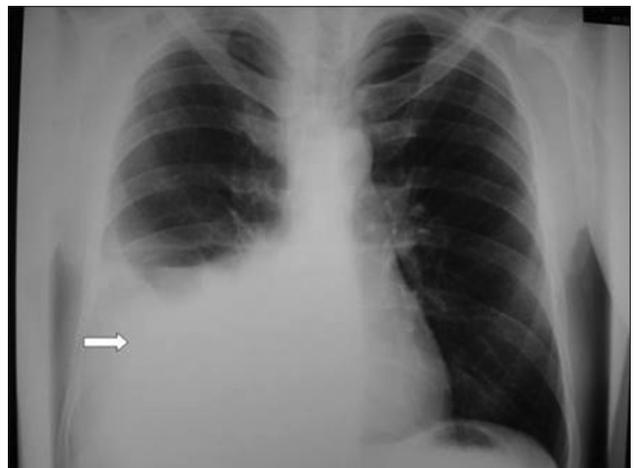


Figure 4: Right sided pleural effusion

ECG was suggestive of sinus tachycardia. X-ray chest was suggestive of right-sided pleural effusion (Figure 4). 2-dimensional echo suggestive of mild pericardial effusion, mild tricuspid regurgitation and mild pulmonary arterial hypertension and D-dimer was 16.3 and computed tomography (CT) pulmonary angiography was done which was suggestive of ground glass opacity in right lung.

The patient was shifted to intensive cardiac care unit and she was monitored. Patient was advised diagnostic pleural tapping. The fluid aspirated was hemorrhagic and was considered secondary to residual liver hematoma. Decision to manage the patient conservatively with a close observation was taken, and she was started on higher antibiotics with diuretics. As a result, effusion resolved gradually with time.² After the improvement in patient's condition drains were removed. 5 weeks postpartum patient had no complaints and was discharged on 13/9/15 from hospital in a stable state on dual hypertensive. During the entire hospital stay patient received 11 packed red cells; 10 fresh frozen plasma; 4 platelet concentrate. The patient is following up regularly; repeat scan was done after 3 months which was suggestive of no evidence of liver hematoma.

DISCUSSION

The HELLP syndrome and other hypertensive disorders are the main causes of maternal mortality. HELLP syndrome develops in about 70% of the cases before delivery and 30% in postpartum period.³ A mild and self-limited course to a fulminant process including multiple organ failure can be seen in HELLP syndrome. These major maternal complications include disseminated intravascular coagulation, abruptio placentae, acute renal failure pulmonary edema, and subcapsular liver hematoma.^{4,5} Liver hemorrhage and rupture are the most eccentric and critical complications of HELLP-associated disease. Maternal mortality occurs in about 18-86% cases of hepatic rupture. The causes of subcapsular and intraparenchymal hepatic hematomas in HELLP syndrome are unknown. Liver distention may occur with the obstruction of blood flow in the hepatic sinusoids.

This obstruction may lead to periportal necrosis and, in severe cases, intrahepatic hemorrhage, subcapsular hematoma formation or hepatic rupture. A fluorescent antibody technique has been used to demonstrate fibrin deposits in the hepatic sinusoids. Clinical symptoms and signs are non-specific and epigastric or right upper quadrant abdominal pain with shoulder irradiation to nausea, vomiting, and abdominal distension.

CONCLUSION

The cases of subcapsular liver hematomas must be treated in tertiary centers for prompt recognition and optimal treatment because the prognosis can be changed by the timely diagnosis and treatment. USG, CT, and magnetic resonance imaging (MRI) can be used for the diagnosis. Liver hematomas in pregnancy must be closely monitored by hemodynamic and coagulation parameters during the management of HELLP syndrome and other hypertensive disorders. Abdominal USG represents a useful first choice non-invasive tool for diagnosis and evaluation. Serial evaluation with imaging techniques, avoidance of the liver manipulation and immediately replacement of blood products are essential. Postpartum follow-up should include serial assessment with USG, CT or MRI until the defect resolves.

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