RUPTURED SUBCAPSULAR HEPATIC HEMATOMA: A CASE REPORT

Wong L.P[1], Suleiman M.I[1], Jesani J.K[2], Odongo B.E[1,2]

Affiliation

1. Department of Reproductive Health, Moi University, Eldoret, Kenya.
2. Directorate of Reproductive Health, Moi Teaching and Referral Hospital Eldoret, Kenya.

Correspondence: unefemme30@gmail.com

ABSTRACT

Background: Subcapsular Hepatic Hematoma (SHH) is not uncommon in the Hemolysis, Elevated Liver enzymes, and Low Platelet count (HELLP) syndrome and preeclampsia setting. Management of SHH is usually conservative; however, when ruptured, surgical exploration and management are required. Surgical treatment protocols include perihepatic packing and liver transplantation in severe cases.

Case presentation: A 44-year-old, para 6 gravida 7 at 35 weeks gestation in the active phase of labor presented with a diagnosis of severe preeclampsia with HELLP syndrome to the Moi Teaching and Referral Hospital (MTRH) as a referral. The patient was taken for emergency cesarean section and discovered a ruptured subcapsular hepatic hematoma, which was managed conservatively.

Conclusion: Conservative management should be considered in patients with ruptured SHH who remain hemodynamically stable, with no apparent active bleeding during surgery.

Keywords: subcapsular hepatic hematoma, HELLP syndrome, conservative management, preeclampsia

INTRODUCTION

Subcapsular Liver Hematoma (SLH) is spontaneous bleeding between the Glisson's capsule and the liver parenchyma. It occurs in approximately 2% of pregnancies complicated by Hemolysis, Elevated Liver enzymes, and Low Platelet count (HELLP) syndrome (1). Spontaneous Subcapsular Hepatic Hematomas (SSHH) is a rare occurrence in pregnancy, with 80% of cases occurring in preeclampsia, eclampsia, and HELLP syndrome (2). The incidence of SSHH with rupture in pregnancies varies from 1 in 40 000 - 250 000 (3). Treatment protocols have traditionally comprised of surgical intervention ranging from perihepatic packing to liver transplantation in severe cases. Adverse obstetric outcomes, including maternal mortality and perinatal mortality, have been reported in hepatic rupture (4). This is a case report of a ruptured SHH discovered in a patient with HELLP syndrome undergoing emergency cesarean section. The patient was managed conservatively.

CASE PRESENTATION

A 44-year-old, para 6 gravida 7 patient with a twin pregnancy at 35 weeks in the active phase of labor with a diagnosis of severe preeclampsia with HELLP syndrome presented to the Moi Teaching and Referral Hospital (MTRH) as a referral. She complained of epigastric pain, headache, and blurred vision. Her blood pressure at admission was 193/113mmHg. The patient was started on magnesium sulfate, labetalol, and nifedipine and monitored through labor. Obstetric ultrasound was not done as the patient came in the active phase of labor and portable ultrasound was not available. The patient's biochemical parameters at the time were proteinuria (+++), albumin 25g/L, total bilirubin 61.1umol/L, direct bilirubin 39.5umol/L, creatinine 82.4umol/L, total protein 53.7g/L, uric acid 424umol/L, hemoglobin 11.8g/dL, platelet count 91 x10^3, and 151.2, 71 and 191 U/L of alkaline phosphatase (ALP), alanine aminotransferase (ALT) and aspartate aminotransferase (AST) respectively.

The patient was scheduled for an emergency cesarean section due to arrested cervical dilation. The outcome was two live male infants weighing 3kg and 3.5kg, respectively. Initially, a Pfannenstiel incision had been made during the cesarean section. However, upon returning the uterus into the abdominal cavity after the repair, an approximated 800cc of hemoperitoneum was noted, prompting further exploration of the cavity, thus leading to the addition of a midline abdominal incision to create an inverted **T** incision. Multiple decapsulated and ecchymotic areas on the anterior surface of the right lobe of the liver and an intact left lobe subcapsular hematoma measuring 6 x 5 cm were discovered (Figure 1).

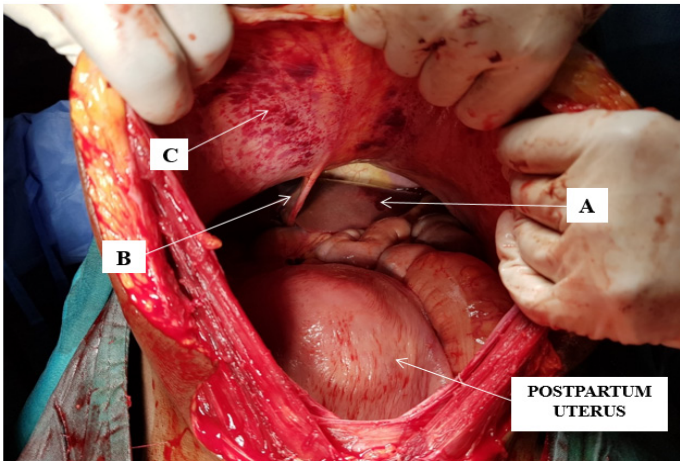

Figure 1: Left lobe of liver subcapsular hematoma (A), decapsulated ecchymotic (non-necrotic) areas on the anterior surface of the right lobe (B). Ecchymotic areas on parietal peritoneum of the anterior abdominal wall (C).

Her vital signs remained stable during surgery. Irrigation with saline was done, and after observing no active bleeding from both the decapsulated areas and intact hematoma, the abdomen was closed. The patient was transferred to the postnatal ward's high-risk unit for close monitoring, where her vitals remained stable.

The coagulation profile of the patient was normal postoperative. Four units of whole blood and six units of platelet concentrate were infused. The patient completed magnesium sulfate maintenance dose in 24 hours, dexamethasone 10mg BD for three days, and was continued with nifedipine 20mg BD. On the third postoperative day, the patient's biochemical profile was albumin 24g/L, total bilirubin 8.5umol/L, direct bilirubin 7.1umol/L, creatinine 62umol/L, total protein 52g/L, hemoglobin 10.4g/dL, platelet count 144 x10^3/uL, and 102, 60 and 49.9 U/L of ALP, ALT, and AST respectively. Her platelet count was 406 x10^3/uL, and all other lab parameters were within normal ranges on the fifth postoperative day. The patient was discharged home, having no complaints on day six, and instructed to return for follow-up at the postnatal clinic after two weeks. Her postnatal follow-up remained uneventful.

DISCUSSION

Subcapsular hepatic hematomas are rare and can occur following blunt abdominal trauma, during procedures such as liver biopsies, and in hepatic pathologies, including hepatocellular carcinoma, hepatic adenoma, focal nodular hyperplasia, and hemangioma (5). Spontaneous subcapsular hepatic hematomas are even rarer. An estimated 80% are reported to occur in pregnancies complicated by preeclampsia, eclampsia, and HELLP syndrome (2). The first case of SSHH in pregnancy was reported in 1844. To date, slightly over 200 cases have been reported in the literature, with 85% being reported as a pre-labor finding and the remaining 15% as a postpartum finding (2). The incidence of SHH with rupture in pregnancy ranges between 1 in 40000 - 250 000, 92.8% of these cases occurring in preeclampsia/eclampsia with or without HELLP syndrome (6). The patient in the presented case fit the criteria for HELLP Syndrome due to her thrombocytopenia and elevated liver transaminases, in addition to her elevated blood pressure and proteinuria.

A review of case reports of preeclampsia with hepatic ruptures reported that a majority (57.4%) of the ruptures occurred in multiparous women. An estimated 86.3% and 52.1% of these cases occurred in patients aged above 25 years and 25 - 35 years, respectively (4). The patient in this was multiparous and above 35 years. Following rupture of SHH, Disseminated Intravascular Coagulation (DIC) may occur, which could be fatal if not promptly managed (7). The patient presented remained hemodynamically stable, with normal coagulation parameters despite an apparent rupture.

Epigastric pain due to the distension of the hepatic capsule is commonly reported in patients with

preeclampsia and HELLP Syndrome with SHH (3). The patient gave a history of epigastric pain accompanied by headache and blurred vision on admission. Continuous expansion of this capsule due to the hematoma may cause a rupture, which could be spontaneous or induced through aggressive abdominal palpation, labor contractions, or uterine manipulation during cesarean section (8). Other non-specific symptoms of rupture may include right upper quadrant pain, shoulder pain, vomiting, abdominal distension, and signs of shock if significant hemorrhage occurs (9). The right liver lobule is the most frequently affected (77%), followed by both lobules (21%) and the left lobule alone (2%) (4). In this case, the patient had a ruptured subcapsular hematoma on the anterior surface of the right lobe and a smaller intact hematoma on the left lobe of the liver.

Ultrasound, Computed Tomography (CT), and Magnetic Resonance Imaging (MRI) techniques are used to diagnose SHH. None of these modalities was utilized in the presented case as the patient presented in the advanced stage of an active phase of labor, and a portable ultrasound was not available. Most SHH cases are coincidentally discovered during cesarean section. The most common techniques used to diagnose SHH are laparotomy, ultrasound, and computed tomography (4). The non-specific nature of signs and symptoms of a ruptured or unruptured SHH makes it challenging to identify women who will need imaging to rule out SSH. The non-specificity in SSH signs and symptoms may explain why laparotomy is the commonest modality of SHH diagnosis, where patients with preeclampsia and with or without HELLP syndrome and in need of cesarean section are coincidentally discovered to have SHH (4).

Generally, patients with unruptured SHH are managed conservatively, preferably in a tertiary center where close monitoring, imaging, blood products, and laparotomy are readily available. Patients with ruptured SHH have traditionally been managed with arterial embolization or surgery. Surgical management protocols including drainage and local compression with packs, suturing of bleeding sites, local placement of hemostatic materials, partial hepatectomy, hepatic artery or portal vein ligation, or a combination of these approaches. Liver transplantation is sometimes necessary (7). The choice of treatment protocols is dependent on the extent of liver damage and the availability of resources and expertise to undertake the procedures. In this case, aggressive management was not opted for despite signs of an apparent rupture of the SHH of the right lobe as no active bleeding from the affected sites after irrigating the abdomen was observed. Furthermore, the patient was hemodynamically stable.

CONCLUSION

A higher index of suspicion should be suspected in SSH in all preeclampsia patients with severe features who report epigastric pain. Most SSH cases are usually managed conservatively; however, laparotomy should be done to evaluate the extent of liver damage in ruptured hematoma cases. The presented case shows the possibility of conservative management in a ruptured SSH case with hemodynamic stability and no actively bleeding sites at the time of surgery. However, such patients need to be closely monitored for hemorrhage signs, receive an appropriate replacement of blood products, and imaging done as a follow-up to confirm resolution of hematoma and rule out further bleeding.

REFERENCES

1. Bradke D, Tran A, Ambarus T, Nazir M, Markowski M, Juusela A. Grade III subcapsular liver hematoma secondary to HELLP syndrome: A case report of conservative management. Case Reports Women's Heal [Internet]. 2020;25:e00169. Available from: https://doi.org/10.1016/j.crwh.2019.e00169

2. Răgușin ROCRD, Udorache ŞTT, Liescu DOGAI. Case Report Postpartum Spontaneous Subcapsular Hepatic. 2018;44(4):387–91.

3. Troja A, Abdou A, Rapp C, Wienand S, Malik E, Raab HR. Management of Spontaneous Hepatic Rupture on Top of HELLP Syndrome: Case Report and Review of the Literature. Visz Gastrointest Med Surg. 2015;31(3):205–8.

4. Vigil-De Gracia P, Ortega-Paz L. Pre-eclampsia/eclampsia and hepatic rupture. Int J Gynecol Obstet. 2012;118(3):186–9.

5. Tamimi A Al, Alawad AA. Large spontaneous subcapsular hematoma of the liver: a rare case report. Pan Afr Med J. 2019;32:16.

6. Kapan M. Subcapsular Liver Hematoma in HELLP Syndrome: Case Report. Gastroenterol Res. 2010;3(3):144–6.

7. Xie X, Meng X, Gao Z, You Y. Therapy of Liver Subcapsular Giant Hematoma with HELLP Syndrome : Case Report and Literature Review. 2018;6:1–3.

8. Karateke A, Silfeler D, Karateke F, Kurt R, Guler A, Kartal I. HELLP Syndrome Complicated by Subcapsular Hematoma of Liver: A Case Report and Review of the Literature. Case Rep Obstet Gynecol. 2014;2014:1–3.

9. Hanane O, Meriem N, Samir B, Mounia Y. LIVER SUBCAPSULAR HEMATOMA : ABOUT A CASE. 2020;6(6):54–6.

****