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Ruptured Subcapsular Hematoma of The Liver

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1. Abstract

Subcapsular liver hematoma is a rare complication of pregnancy, most often occurring in the context of preeclampsia or HELLP syndrome. It carries a very high maternal and fetal morbidity and mortality rate, hence the importance of rapid diagnosis, even before the hematoma ruptures. We report a case of ruptured subcapsular liver hematoma managed at the maternity ward of the Abderrahim El Harrouchi Mother and Child Hospital, which unfortunately resulted in maternal death.

2. Introduction

Subcapsular liver hematoma (SLH) is a rare pregnancy complication, with an incidence estimated between 1 in 45,000 and 1 in 225,000 births [1,2]. SLH is a serious condition that can lead to rupture, which is associated with maternal and fetal mortality rates of 50% and 80%, respectively [2]. It is often discovered once the clinical picture progresses to hemorrhagic shock.

3. Case Report

A 28-year-old woman, gravida 4 para 4, with no significant medical history, was referred from the Hassan II peripheral hospital for severe preeclampsia at six months of gestation. At the referring hospital, she received 500 mg of alpha-methyldopa, 1 ml of nicardipine, and a loading dose of magnesium sulfate. She was then transferred to our facility for further management.During ambulance transport, the patient experienced a convulsive seizure.

Upon admission to the university hospital, she was unconscious, with unmeasurable blood pressure, bradycardia at 35 bpm, and oxygen saturation at 64%. She was immediately transferred to the operating room, where obstetric ultrasound showed a non-viable singleton pregnancy and a large volume of peritoneal fluid.

Laboratory findings were consistent with HELLP syndrome:

- Hemolysis: Hemoglobin 6.3 g/dL, LDH 1770 IU/L
- Thrombocytopenia: Platelet count 50,000/mm³
- Hepatic cytolysis: AST 455 IU/L, ALT 345 IU/L
- Functional renal failure: Creatinine 16.5 mg/L, Urea 0.9 g/L

An emergency cesarean section for maternal rescue was performed. Intraoperatively, a hemoperitoneum of approximately two liters was evacuated, necessitating fluid resuscitation and transfusion of three units of packed red blood cells. A male stillborn weighing 1100 g was delivered by cephalic extraction. No retroplacental hematoma was noted.After hysterorrhaphy, uterine atony occurred, managed with triple vascular ligation and administration of 800 mg misoprostol per rectum.Exploration of the abdominal cavity and hepatic area was challenging due to active bleeding. A midline infra-umbilical incision was extended, revealing a ruptured subcapsular liver hematoma with ongoing hemorrhage. After 30 minutes of unsuccessful hemostasis, four white gauze packs were placed subhepatically along with a Redon drain.The patient then suffered an irreversible cardiorespiratory arrest that was unresponsive to resuscitation measures.

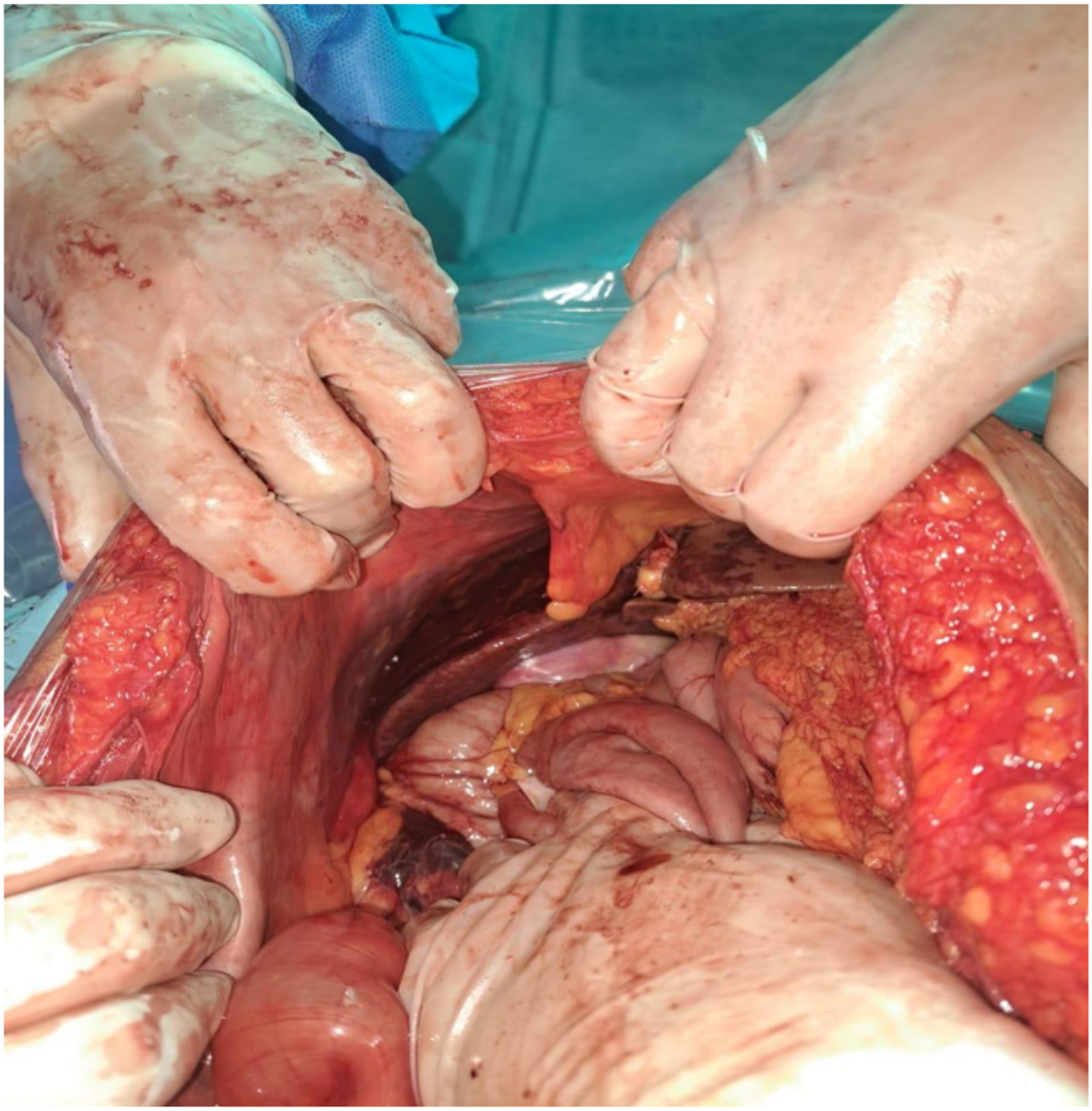

Figure 1: SLH on the anterior surface of the liver.

4. Discussion

Subcapsular liver hematoma (SLH) complicates 1 in 45,000 to 1 in 225,000 pregnancies [1,2]. It is most often associated with preeclampsia, eclampsia, or HELLP syndrome, with maternal and fetal mortality rates reaching 50% and 80%, respectively [3,4]. Clinically, SLH should be suspected in the presence of right upper quadrant pain, nausea, vomiting [5], or jaundice in the setting of hypertension. In such cases, liver ultrasound is mandatory, allowing monitoring of non-ruptured hematomas if surgical abstention is chosen.SLH can present with varied symptoms and should be considered in patients with epigastric and/or right hypochondrial pain, typically described as a band-like pain, sometimes radiating to the scapula [5].Once Glisson's capsule ruptures, hemorrhagic shock signs become apparent [5].Definitive diagnosis relies on imaging-abdominal ultrasound and computed tomography (CT) [6]. Ultrasound may show a biconvex, lens-shaped subcapsular hematoma, usually beginning in the right liver lobe [2]. CT scan is more effective in assessing hepatic involvement and determining the hepatic origin of the hemoperitoneum.In the event of rupture, midline laparotomy allows both fetal extraction and hepatic exploration, including hemoperitoneum evacuation and liver packing [7]. This was the approach used in our reported case.Laboratory findings are not specific to SLH but may indicate complete or partial HELLP syndrome and coagulation abnormalities, which can progress to disseminated intravascular coagulation (DIC) [2,8].Imaging-particularly ultrasound and CT scan-is usually sufficient for diagnosis [9,10].Management options for subcapsular liver hematoma range from conservative approaches (hemodynamic support, transfusion, and correction of coagulopathy), to transcatheter hepatic artery embolization, and even surgical intervention with tamponade, parenchymal sutures, hepatic resection, or hepatic artery ligation [11]. Some patients may require liver transplantation [11].The use of a laparoscope during caesarean section with transverse incision has recently been

described [12]; it allows for easier liver exploration, ensures no active bleeding is present, and avoids the need for a more invasive midline incision.

5. Conclusion

Subcapsular liver hematoma is a rare but severe complication of pregnancy that requires prompt diagnosis and multidisciplinary management, with rapid coordination between obstetricians, anaesthesiologists, paediatricians, visceral surgeons, and interventional radiologists.

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