



## Postpartum Subcapsular Hepatic Hematoma related to Preeclampsia: Conservative Management

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### ABSTRACT

Subcapsular hematoma of the liver represents an unusual clinical phenomenon in the pregnancy and postpartum period. Serious complications can be devastating in terms of fetal and maternal mortality. We present a case of a multiparous patient of 44-year-old at 37 weeks of gestation, admitted for preeclampsia. The woman underwent an emergency Cesarean section (C-section) with the extraction of a live foetus. Few hours after delivery, she complained of intense abdominal and epigastric pain. Diagnostic work-up was suggestive of a subcapsular right lobe hepatic hematoma which was successfully managed conservatively in a multidisciplinary team. We will try through this case to highlight the interest of imaging (ultrasound and scanner) for an early diagnosis at the non-ruptured stage, a prerequisite for a good prognosis.

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### Introduction

Subcapsular hepatic hematoma represents a life threatening complication which is often associated with preeclampsia and / or HELLP syndrome (hemolysis, elevated liver enzymes, and low platelet count) [1].

It has an incidence of approximately 1 per 45 000 live births [2].

It commonly occurs between 28 and 36 weeks of gestation, but it can also occur postpartum or even during labor [3].

Clinical symptoms and signs are nonspecific, which often leads to a delay in diagnosis [4].

The final diagnosis can be established by imaging techniques such as ultrasound, computed tomography (CT), or magnetic resonance imaging (MRI) [5].

Management consists mainly of pregnancy termination, eliminating the causal factor, and controlling hemorrhage. In turn, this depends on the hemodynamic status and the severity of the hepatic lesion [6].

In the following we present a case of subcapsular hepatic hematoma, without associated patient morbidities, diagnosed in the postpartum period and resolved with conservative management.

### Patient and Observation

A 44 year female, with 2 previous C-section deliveries, presented to our hospital at 37 weeks of pregnancy for unsystematized uterine contractions.

Her pregnancy follow-up registered no interurrences. There was no history of any bleeding disorders. The two previous pregnancies were without complications.

A healthy female infant weighing 3.200 g was delivered.

Her vital signs on admission to our institution were all within normal limits except of an elevated level of blood pressure (190/100 mmHg). Initial laboratory work-up showed the following: hematocrit (Hct) 30.1% (normal range 35–47%), hemoglobin (Hb) 9 gr/dL (normal range 11.5–15.5 gr/dL), platelet count (PLT) 175000/ $\mu$ L (normal range

150000–450000/ $\mu$ L), white blood cell count (WBC) 13500 cells/mm<sup>3</sup> (normal range 4000–11000 cells/mm<sup>3</sup>), aspartate-aminotransferase 68 U/L (normal range 0–38 U/L), alanine aminotransferase 109 U/L (normal range 4–36 U/L), and lactic dehydrogenase (LDH) 653 UL (normal range 240–480 UL).

Few hours after delivery, she complained of intense epigastric and abdominal pain. The pain was severe, constant in nature, radiating to the right shoulder and aggravated by movement. Associated symptoms included nausea and one episode of vomiting.

Abdominal ultrasound revealed subcapsular fluid collection in the right hepatic lobe (Figure 1a- 1b). Further imaging included computed tomography (CT) of the abdomen which confirmed the diagnosis demonstrating a large well-circumscribed subcapsular liver hematoma with intact capsula (13 × 8 × 14 cm) in the right hepatic lobe (Figures 2).

It was agreed to treat conservatively after abdominal surgeons and gastroenterologists were consulted and she was stabilised on infusions, antihypertensive medication, and antibiotherapy.

Her condition remained static and A follow-up abdominal ultrasound in the 10th hospital day disclosed a significant decrease in the dimensions of the hematoma (Figure 3).

The patient was discharged home on the 20th day of hospitalization following an uneventful clinical course. She remained asymptomatic during 6 months follow-up visits, with serial sonographic scans that showed gradual decrease in the size of the hematoma (Fig. 4). Nine-month postpartum abdominal ultrasound showed no residual hematoma.

### Discussion

Subcapsular hepatic hematoma was first described by Abercombie in 1844 [7]. It is defined as an accumulation of blood between the capsule of Glisson and the liver parenchyma [8].

Subcapsular liver haematoma is a rare and life-threatening complication of pregnancy [9]. The incidence is 1/67 000 deliveries [10].

The etiopathogenesis still remains unclear until today [11]. An interesting hypothesis is based on the formation of fibrin thrombus within the sinusoid capillaries and hepatic arteries which in turn leads to periportal necrosis, intrahepatic hemorrhage, and finally subcapsular hematoma [11].

The right hepatic lobe is the most frequent location of subcapsular hematoma (75% of the patients), as it was also described in our case [12].

In the majority of cases, the syndrome develops before delivery (85% of cases), and only few cases are described in postpartum (15% of cases) [13].

Clinical symptoms are nonspecific, but the abdominal pain with shoulder irradiation is the main manifestation [14]. As HELLP syndrome is the main cause for subcapsular hematoma, symptoms secondary to high blood pressure may be present, such as headaches, nausea, vomiting and epigastric pain. In case of rupture in the abdomen, the haemorrhagic shock clinics are constant [15].

The necessity of an accurate and early diagnosis in subcapsular hepatic hematomas derives from the modern trend of treating them conservatively, especially when the patient is hemodynamically stable.

Abdominal ultrasound represents a useful noninvasive tool for diagnosis and evaluation [11]. In most of the cases, the hematoma typically looks like a hypoecogenic area, different from the rest of the liver structure [12, 16, 17] and it can also suspect a possible rupture if important intraperitoneal fluid is present [18, 19].

In our case, the ultrasound was performed in immediate postpartum period, without any signs of active bleeding or other anomalies.

CT and MRI could be used in order to elucidate the diagnosis in ambiguous cases [11]. On the CT imaging, the hematoma typically looks like a lenticular, perihepatic collection with a variable density of the hematoma. Acute hematomas are typically hyperdense, due to the high protein content [20]. The density decreases in time, becoming hypodense in the chronic phase, due to the progressive lysis of hemoglobin.

In our case the CT confirmed the sonographic findings and strengthened the diagnosis.

Management is mostly conservative in hemodynamically stable patients and includes intensive fluid replacement as well as blood and fresh-frozen plasma transfusions [11].

In some cases, an arterial embolization performed by interventional radiology could be a useful alternative procedure that could control haemorrhage [11].

Urgent surgery should be considered where either embolization has failed or the haemodynamic instability is life-threatening.

Our patient had a favorable evolution under conservative management and no invasive or surgical procedures were needed.

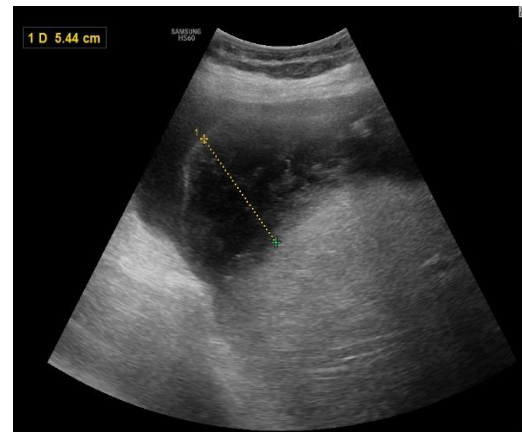
The follow-up may include repeated CT or ultrasound exams for evaluating of the regression of the hepatic hematoma [13, 12].

In our case, an ultrasound scans control was performed before discharge and during 6 months follow-up.

#### Conclusion

The presentation of this case report has the intention of raising vigilance regarding this rare clinical phenomena such

as subcapsular hepatic hematomas. Early diagnosis could decrease morbidity and mortality burden for the mother and child in the respective cases.



**Figure 1a-1b. Abdominal ultrasound revealing a large hypoechoic subcapsular liver hematoma (11.2 cm×5.44 cm)**



**Figure 2: Abdominal computed tomography reveals a large well-circumscribed subcapsular liver hematoma with intact capsula (13 × 8 × 14 cm) in the right hepatic lobe causing compression of the underlying liver parenchyma.**

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