

# Spontaneous hepatic rupture in hellp syndrome

## Abstract

HELLP syndrome, a condition characterized by hemolysis, elevated liver enzymes and low platelets, is obstetric situation that may have severe maternal and fetal complications, including subcapsular hematoma with risk of rupture into the peritoneal cavity. A case of spontaneous rupture of the liver secondary to HELLP syndrome is reported. The patient was undergo an exploratory laparotomy due to hemorrhagic shock.

**Keywords:** Rupture, Spontaneous, HELLP Syndrome; Shock, Hemorrhagic, intravascular coagulation, dehydrogenase, multidisciplinary, Pringle maneuver, hepatorrhaphy, diaphragmatic, laparotomy, necrosis, infarction, hemoperitoneum

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João Kleber de Almeida Gentile ACBC,<sup>1</sup>  
Paula Mendonça Taglietti,<sup>1</sup> Maria Luiza  
Zancanaro,<sup>2</sup> Isabella Ventura Gomes  
Martins,<sup>2</sup> André Augusto Castello Andrade,<sup>2</sup>  
José Ricardo Weitz Ristow<sup>2</sup>

<sup>1</sup>Hospital of Guarulhos (HGG-SPDM), Brazil

<sup>2</sup>University of São Paulo (FM-UNICID), Brazil

**Correspondence:** João Kleber Gentile, General Hospital Professor Waldemar de Carvalho Pinto Filho - General Hospital of Guarulhos, Alameda dos Lírios, 300 - Parque Cecap, Guarulhos SP, 07190-012, Brazil, Tel 11- 3466-1350, 11-21767271, Email joaokeberg@gmail.com

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## Introduction

Hepatic rupture and subcapsular hematoma are severe and very uncommon complications of HELLP syndrome (hemolysis, elevation of liver enzymes and low platelets). The incidence of this condition is between 1 / 40,000 deliveries of women with HELLP syndrome. There is no consensus on the best approach for the treatment of this serious complication of pregnancy, and a multidisciplinary approach to the management of these patients may lead to a notable decrease in the high mortality rate. We report a case of severe preeclampsia, which rapidly progressed to HELLP syndrome, hepatic rupture, disseminated intravascular coagulation (DICV) and renal failure.

## Report

A 38-year-old woman, a second gestation and previously healthy, started her hypertension in the 32nd week of gestation with alfametildopa with adequate control and prenatal care without complications. She was admitted to the 36<sup>th</sup> week of gestation due to abdominal pain in the upper abdomen and hypertensive crisis (206x121 mmHg). Initial laboratory tests showed hemoglobin of 5.7g / dL, hematocrit of 16.2g / dL, leukocytes of 22,000cel/mm<sup>3</sup> at the expense of neutrophils (77%), platelets 77,000 / mm<sup>3</sup>, lactic dehydrogenase of 4108, AST of 182, ALT of 141 and INR 1.42. It was managed with magnesium sulphate and blood pressure control evolving with hypovolemic shock, being submitted to exploratory laparotomy and interruption of gestation. In the inventory of the abdominal cavity large hemoperitoneum (estimated at approximately 2,000 mL) was found due to an extensive hepatic laceration in the right lobe on its diaphragmatic face with extension to the visceral face. Pringle maneuver, volume replacement, red blood cell concentrates in a massive transfusion protocol in addition to hepatorrhaphy were performed. Patient persisted with bleeding being opted for abdominal packing and maintenance of abdominal cavity in peritoneostomy. She was referred to the intensive care unit using vasoactive drugs and reoperated within 48 hours with hemorrhage control, being chosen for hepatorrhaphy, drainage of the abdominal cavity, subtotal hysterectomy for uterine atony and closure of the abdominal wall. Patient progressed with hemoglobin 9.7g / dL, hematocrit 23.9g / dL, lactic dehydrogenase 11,412, AST 3218, ALT 2115, creatinine 6.2 and urea 149 and continuous hemodialysis was indicated. She was discharged from intensive care after 18 days of hospitalization.<sup>1,2</sup>

## Discussion

The HELLP syndrome is a variant of pre-eclampsia that occurs in 0.2% to 0.6% of pregnancies, presenting high maternal (10-59%) and fetal (42-80%) mortality. It appears to be the final manifestation of a pathology that results in decreased prostacyclin levels and increased thromboxane levels leading to microvascular endothelial damage, vasospasm, platelet activation and aggregation, and fibrin deposition.<sup>3</sup>

This syndrome usually occurs during 32-34 weeks of gestation, although 10-30% of cases occur in the immediate postpartum.<sup>4</sup> Elevation of hepatic enzymes originates from obstruction of hepatic perfusion by fibrin deposits and platelet aggregates in hepatic sinusoids. This obstruction leads to periportal necrosis, intrahepatic hemorrhage and the formation of a subcapsular hematoma. Most of the reports report a higher incidence in the right hepatic lobe, without, however, implying greater severity. Hepatic rupture occurs in 2% of cases, most often in the prepartum period, and in 1/3 of cases it occurs during delivery or in the period up to six days after one. Laparotomy is indicated, if possible, to interrupt gestation. Preventing hepatectomies and segmentectomy or resection of areas of necrosis or infarction and removal of intrahepatic hematomas should be avoided.

## Result

Hepatic mobilization through the sectioning of his ligaments is more appropriate followed by packaging with compresses in the hypovolemic shock phase with subsequent reopening of the abdominal cavity.<sup>5</sup>

## Conclusion

In cases where bleeding is not controlled by this method, hepatic artery ligation can be performed.<sup>2</sup> An alternative in patients with hemodynamic stability is arteriography and selective embolization of the arterial bleeding branch. Uncontrollable hemorrhage can occur with conventional measurements and hepatectomy and porto-cava anastomosis can be performed. These patients should undergo liver transplantation within 48 hours. In cases where extensive hepatic necrosis and consequent progressive hepatic failure occur, liver transplantation should also be considered. There are few reports in the transplant literature due to the HELLP syndrome. A review of 17 cases showed a mortality rate of 17%.<sup>6,7</sup>

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- Department of General Surgery, Guarulhos, SP.

## Conflicts of interest

The author declares that there are no conflicts of interest.

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