



## H63 Idiopathic Liver Rupture: An Italian Case Report

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**Learning Overview:** After attending this presentation, attendees will understand that spontaneous bleeding due to a non-traumatic liver rupture is a rare but possible occurrence.

**Impact on the Forensic Science Community:** This presentation will impact the forensic science community by demonstrating that in cases of hemoperitoneum, spontaneous liver rupture should be considered, not only in patients with known predisposing factors.

Non-traumatic liver rupture is not uncommon in pregnant women with Hemolysis, Elevated Liver enzymes, and Low Platelet count (HELLP) syndrome and in association with some liver diseases, but very rarely occurs among healthy individuals.<sup>1</sup> It is usually diagnosed by imaging studies such as ultrasonogram or Computerized Tomogram (CT) or may be detected as an incidental finding in an emergency laparotomy. Very few cases of idiopathic liver rupture have been reported in literature. Reported here is the case of a patient with three visits to emergency health care services over a four-day span. Ultimately—although managed surgically—he died of a liver rupture without history of antecedent abdominal trauma or other clear etiology.

A 72-year-old man presented to the emergency department with abdominal pain. Physical examination elicited pain in the left hypochondrium and a positive Murphy sign. Laboratory tests revealed only a slight rise in white blood cells with neutrophilia, while abdominal ultrasonogram showed a “slightly thickened gallbladder wall.” He was discharged with instructions to return the following morning for a surgical evaluation. The following morning, he returned to the same hospital where the surgeon diagnosed him with acalculous cholecystitis. Two days later, he returned to the emergency room with fever (39°C) and abdominal pain. Laboratory studies showed the following: hemoglobin 12.3gm/dl, white cell count 10.600/cmm, platelet count 97.000/cmm. Liver function tests showed elevated bilirubin and enzymes.

The patient was admitted to the general surgery department where abdominal ultrasonogram raised the suspicion of a perihepatic fluid effusion. That night, the patient developed diarrhea. Early the following morning, he was found to be in shock with a blood pressure of 80/60mmHg. Laboratory studies showed a significant increase in liver function indices, severe anemia, and low hemoglobin (Hb 9g/dl at 4:15 a.m. → 5.90g/dl at 8:06 a.m.). CT revealed a large intraparenchymal and subcapsular hematoma with hemoperitoneum. At emergency laparotomy, there was blood in the peritoneal cavity while the right hepatic lobe showed a deep laceration between the 7<sup>th</sup> and 8<sup>th</sup> segments. Other solid viscera and bowel were unremarkable. Peritoneal washing and perihepatic packing and hemostasis were performed. Despite these measures, the patient died the next day. An autopsy was requested. On internal examination, the liver grossly demonstrated a rupture on the posterior hepatic surface (segments 7–8) and multiple hemorrhagic infiltrates (more marked in the right lobe sections.) Histologic sections showed extensive hepatic necrosis and hemorrhage, including large areas of coagulative necrosis of hepatocyte trabeculae with a central-midlobular extension.

In conclusion, this case provides many topics for thought. First, spontaneous intrahepatic hemorrhage and liver rupture usually occur in patients with predisposing factors, such as hepatocellular carcinoma or adenoma, HELLP syndrome, Ehlers Danlos disease, and graft-vs-host disease.<sup>2</sup> Second, spontaneous liver rupture should be considered in cases of atraumatic hemoperitoneum. Third, a high index of suspicion is required for early diagnosis and intervention to reduce morbidity and mortality in cases of liver rupture. In this case, spontaneous liver rupture and hemoperitoneum occurred in a patient without known risk factors, a very rare occurrence, making early diagnosis and treatment even more challenging.

### Reference(s):

1. Myla Yacob, Mark R. Jesudason, Sukria Nayak. Spontaneous liver rupture: A report of two cases. *Journal of Emergencies, Trauma and Shock*; 2013.
2. Yue-Sun Cheung, Shun Wong, Philip Koon-Ngai Lam, Kit-Fai Lee, John Wong, and Paul Bo-San Lai. Spontaneous liver rupture in hypereosinophilic syndrome: A rare but fatal complication. *World J Gastroenterol*. 2009 Dec 14; 15(46): 5875–5878.

### Liver, Rupture, Spontaneous