

## Hemorrhagic complications following paracentesis

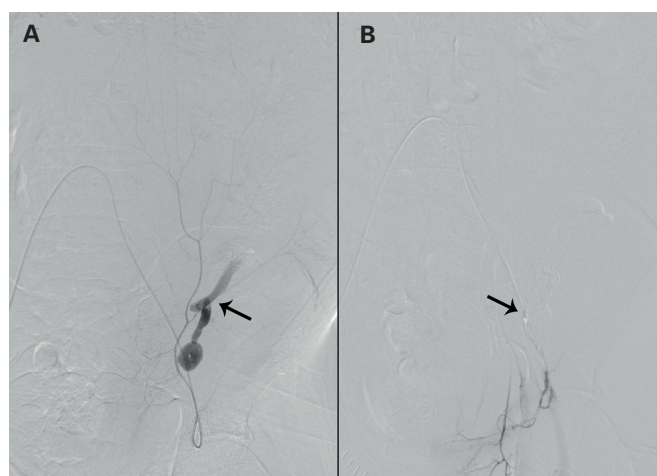
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Dear Editor,

We present two cases of hemorrhagic complications in large volume paracentesis (LVP), performed in the lower left quadrant without ultrasound guidance. The first case was a 75-year-old female with secondary cirrhosis and hepatocellular carcinoma to hemochromatosis managed with transarterial chemoembolization and Child-Pugh B7; she required LVP due to diuretic-resistant ascites. She had severe abdominal pain secondary to a hematoma in the rectus abdominal left muscle. The second case was a 59-year-old male who underwent a liver transplant in June 2019 due to alcoholic liver disease, Child-Pugh B8 and decompensated cirrhosis, who presented with a hemoperitoneum and hypovolemic syncope (Fig. 1). Neither of the two patients had thrombopenia, coagulopathy or renal failure at the time of paracentesis. In both cases, hemodynamic measures were started with fluid therapy and transfusion of packed red blood cells. They were treated by percutaneous transarterial embolization of the left epigastric artery with a good initial angiographic outcome and an adequate subsequent evolution.

### Discussion

Paracentesis is considered as a rapid, minimally invasive and safe technique when performed under sterile conditions in an appropriate manner. However, it is not without risks and has a complication rate of around 1 %, which can be lethal. Although there is no consensus on how to prevent complications, the patient's background must be evaluated in advance. The coagulation and platelets status must be checked and the paracentesis must be performed under ultrasound guidance in situations of a high risk of bleeding (high Child-Pugh score, renal dysfunction, thrombocyte-



**Fig. 1.** A. Arteriography with evidence of active bleeding into the peritoneal cavity, dependent on the left epigastric artery (marked with arrow). B. Epigastric artery embolization with Glubram 1:3 with bleeding resolution (marked with arrow).

nia, abdominal collateral circulation or taking antiplatelet or anticoagulant drugs). Likewise, we believe that adequate experience and supervision is important when performed by junior doctors. Furthermore, standardized protocols and equipment must be used, including the documentation of informed consent about the technique due to possible complications that may arise. Finally, it is essential to remain alert for warning signs (abdominal pain, hypotension or syncope) that allow the detection of possible hemorrhagic complications in time and to know their management, either conservative or with transarterial embolization, as we have shown.

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## References

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