

Complex case of severe vaginal bleeding in liver cirrhosis with associated coagulopathy

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Introduction

This case presents a severe and complex instance of heavy vaginal bleeding in a young woman with alcoholic liver cirrhosis and concomitant disseminated intravascular coagulation (DIC). It highlights the diagnostic and interventional challenges associated with bleeding in advanced liver disease and underscores the importance of a multidisciplinary approach to management.

Case Report

A woman in her 30s with newly diagnosed alcoholic liver cirrhosis presented with a 3-day history of heavy vaginal bleeding. Initial investigations revealed severe anaemia, with a haemoglobin level of 46 g/L. Coagulation studies demonstrated significant abnormalities, including a prothrombin time of 23.8 seconds, partial thromboplastin time of 53.4 seconds, INR of 2.47, and a fibrinogen level of 0.7, suggestive of disseminated intravascular coagulation (DIC). Liver function tests revealed a bilirubin level of 97 µmol/L, albumin of 11 g/L, and alanine aminotransferase of 16 U/L. A CT angiogram showed evidence of portal hypertension, but the pelvic organs appeared normal, with no varices or abnormal vessels identified. Despite multiple transfusions of blood products, her haemoglobin remained critically low, and the persistent vaginal bleeding prompted an emergency subtotal hysterectomy. There were no major intraoperative complications; however, postoperative challenges included persistent wound discharge and ongoing systemic decompensation, which delayed healing. Unfortunately, despite intensive medical management, the patient ultimately succumbed to the systemic sequelae of advanced liver cirrhosis.

Background

Advanced liver cirrhosis complicates <1 % of acute gynaecology admissions, yet alcohol-related cirrhosis in women under 40 is rising. Heavy menstrual or post-menopausal haemorrhage accounts for about one-third of those presentations and may be the first sign of decompensation. In women with cirrhosis, acute bleeding usually stems from three broad mechanisms: (i) structural gynaecological pathology such as fibroids or malignancy, (ii) portal-hypertensive collaterals including ectopic varices or arteriovenous malformations (AVMs), and (iii) systemic coagulopathy up to overt disseminated intravascular coagulation (DIC). Initial assessment follows the abnormal uterine bleeding pathway but additionally include coagulation screen, fibrinogen, fibrin-degradation products and cross-sectional CT-angiography: Doppler ultrasound alone misses up to 40 % of pelvic varices or arteriovenous malformations. When imaging reveals no vascular malformation, coagulopathy, frequently overt DIC precipitated by shock or sepsis, remains the principal cause of bleeding.

Management strategies can be broadly divided into acute control and long-term treatment. Initial steps focus on hemodynamic stabilization, including fluid resuscitation, substantial blood transfusions, and replacement of clotting factors such as fresh frozen plasma and cryoprecipitate. Medical management may involve tranexamic acid, high-dose estrogen, or norethisterone; however, caution is warranted due to their hepatic metabolism. These agents can impair liver function, increase hepatotoxicity risk, and promote thrombogenesis. For acute bleeding from pelvic varices, local tamponade with vaginal packing is a frontline intervention. Without definitive treatment, the risk of ongoing or recurrent hemorrhage remains significant.

Two key components: controlling portal-hypertensive variceal bleeding and managing non-variceal uterine bleeding. Both require multidisciplinary follow-up and ongoing monitoring of portal pressure. Variceal bleeding is treated with pharmacologic agents such as non-selective beta-blockers and vasoactive drugs like octreotide to reduce portal hypertension, alongside interventional options including endoscopic band ligation and transjugular intrahepatic portosystemic shunt (TIPS) for refractory cases. Non-variceal bleeding may be managed with uterine artery embolization, which is uterus-sparing but success depends on correction of coagulopathy and carries a small risk of complications such as pelvic abscess or ischemia. If medical and embolization options fail, urgent hysterectomy may be life-saving but carries high surgical risks with significant perioperative mortality due to cirrhosis-related complications. This decision requires careful multidisciplinary evaluation of surgical risks, liver function, and patient fertility goals.

Discussion

This case highlights the complex diagnostic and therapeutic challenges of managing severe abnormal uterine bleeding in the context of advanced liver cirrhosis. In such patients, profound coagulopathy, thrombocytopenia, and portal hypertension complicate both clinical decision-making and procedural safety. A critical early step in evaluation involves excluding ectopic varices, which, although rare, can be a catastrophic source of hemorrhage in portal hypertension. This often requires advanced imaging modalities and interventional radiology for detection and management. In this case, CT angiography excluded variceal bleeding, guiding the team to focus on non-variceal causes. Medical management options such as hormonal therapy or antifibrinolytics are often constrained by altered hepatic metabolism and elevated thrombotic risk. Uterine artery embolization, while minimally invasive and fertility-sparing, may be contraindicated in patients with significant coagulopathy or instability. Ultimately, the persistence of hemorrhage and failure of conservative measures necessitated an emergency subtotal hysterectomy. Although the surgery itself was uncomplicated, the patient’s overall trajectory was driven by worsening hepatic decompensation. This case underscores the need for early multidisciplinary input and individualized risk-benefit assessment when balancing life-saving intervention against the backdrop of multi-organ dysfunction.

Conclusion

This case emphasises the need for heightened awareness of atypical, life-threatening gynaecological bleeding patterns in patients with advanced liver cirrhosis. A coordinated, multidisciplinary approach involving hepatologists, gynaecologists and haematologists is essential to managing both cirrhosis and bleeding complications, ultimately optimising patient outcomes.

References

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