

When to Start Anticoagulation? A Case of Portal Vein Thrombosis in a Post-Partum Cirrhosis Patient With Variceal Bleeding

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BACKGROUND

- Portal vein thrombosis (PVT) is characterized by an imbalance of hemostatic mechanism.
- Prevalence of PVT increases in parallel with severity of cirrhosis.
- Complication of acute PVT may lead to mesenteric ischemia and chronic PVT can cause portal vein occlusion or cavernoma resulting in secondary portal hypertension.
- Due to cirrhosis related coagulation disorders and high risk of hemorrhage, it is often difficult to give anticoagulation therapy to cirrhotic patient despite studies showing anticoagulation therapy can promote portal vein recanalization and improve liver function.

CASE PRESENTATION

- 36-year-old female with history of alcoholic cirrhosis who presented 2 weeks status post c-section complaining of acute onset abdominal pain, bloating, and nausea with two episodes of hematemesis.
- Initial vital signs were unremarkable and hemoglobin was 7.4 gm/dL. Her model for end-stage liver disease (MELD) score was 16.
- She underwent upper endoscopy (EGD) with successful banding of 3 columns of large varices which showed stigmata of recent bleeding.
- Also underwent diagnostic and therapeutic paracentesis with removal of 4000cc of clear yellow fluid. Fluid analysis did not show signs of spontaneous bacterial peritonitis (SBP).
- She continues to report abdominal discomfort after paracentesis. She did have history of wound dehiscence of her cesarean with persistent leakage of serous fluid despite prior negative pressure wound therapy. Therefore, CT abdomen/pelvis was obtained which demonstrated nonocclusive thrombus in the main portal vein extending into both the right and left branches. MRI was also obtained which showed no evidence of malignancy.
- Since hemoglobin remained stable (>7 gm/dL) during hospitalization without requiring transfusion, she was started on therapeutic low molecular weight heparin (LMWH) at 1mg/kg q12h and discharged the next day.

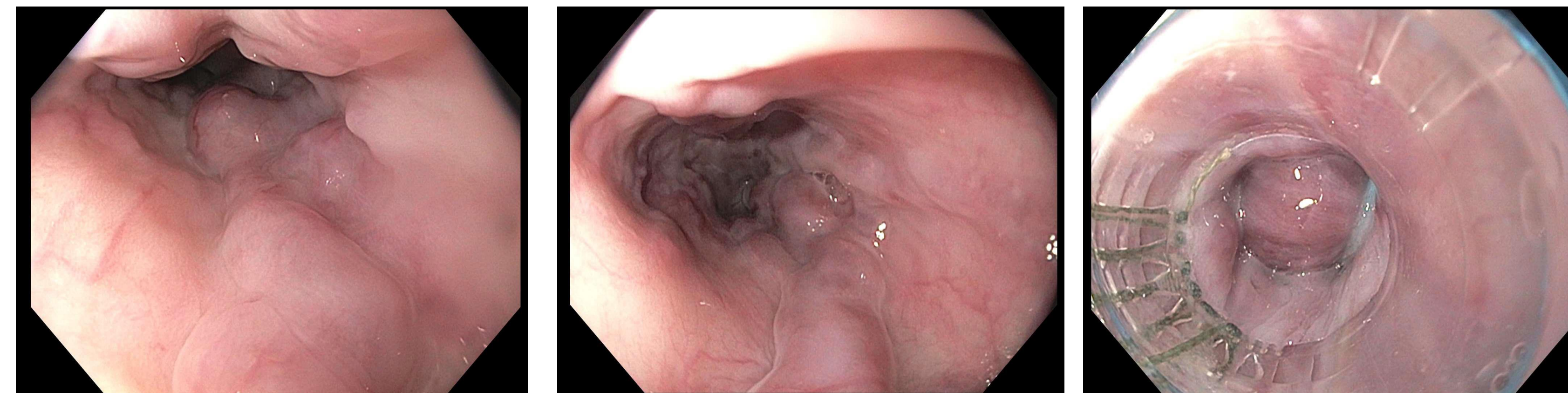


Figure 1a-c. EGD during initial hospitalization. Images above show large (>5 mm) esophageal varices with stigmata of recent bleeding. Completely eradicated with banding.

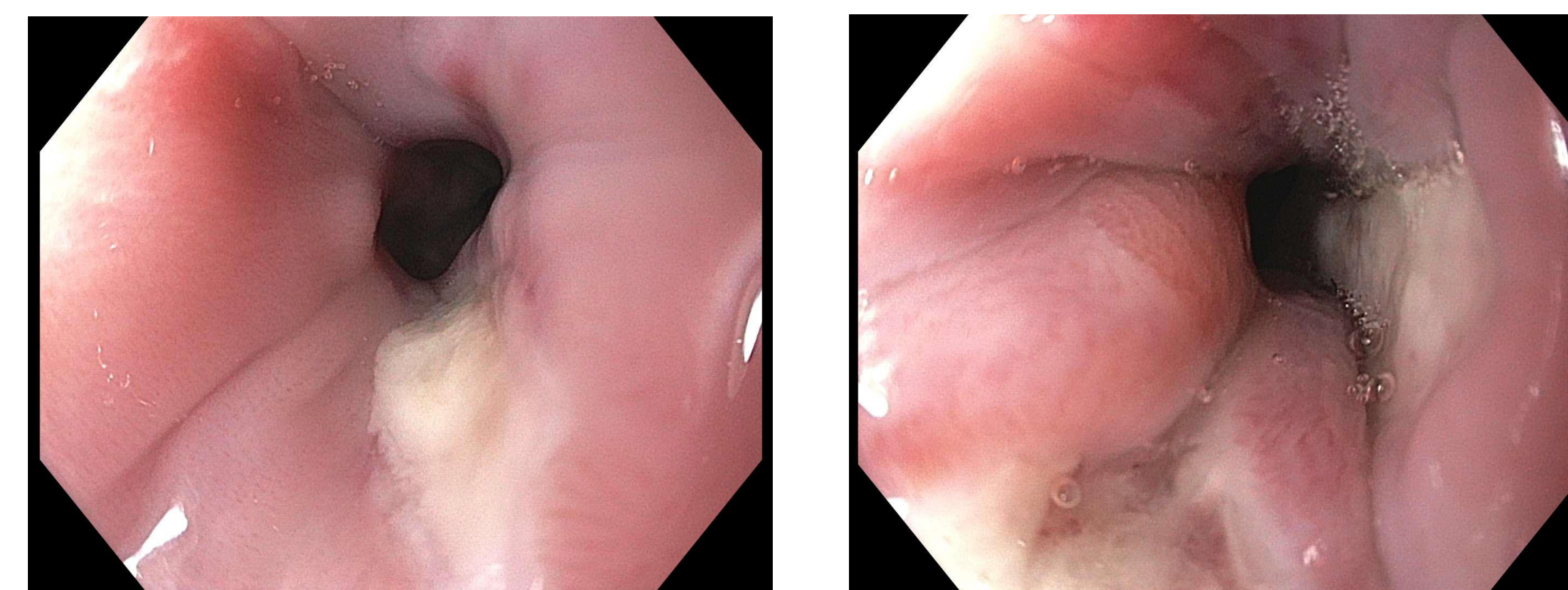


Figure 2a-b. Repeat EGD ten days after initial EGD. Images on the left show esophageal ulcers at site of prior variceal treatment.

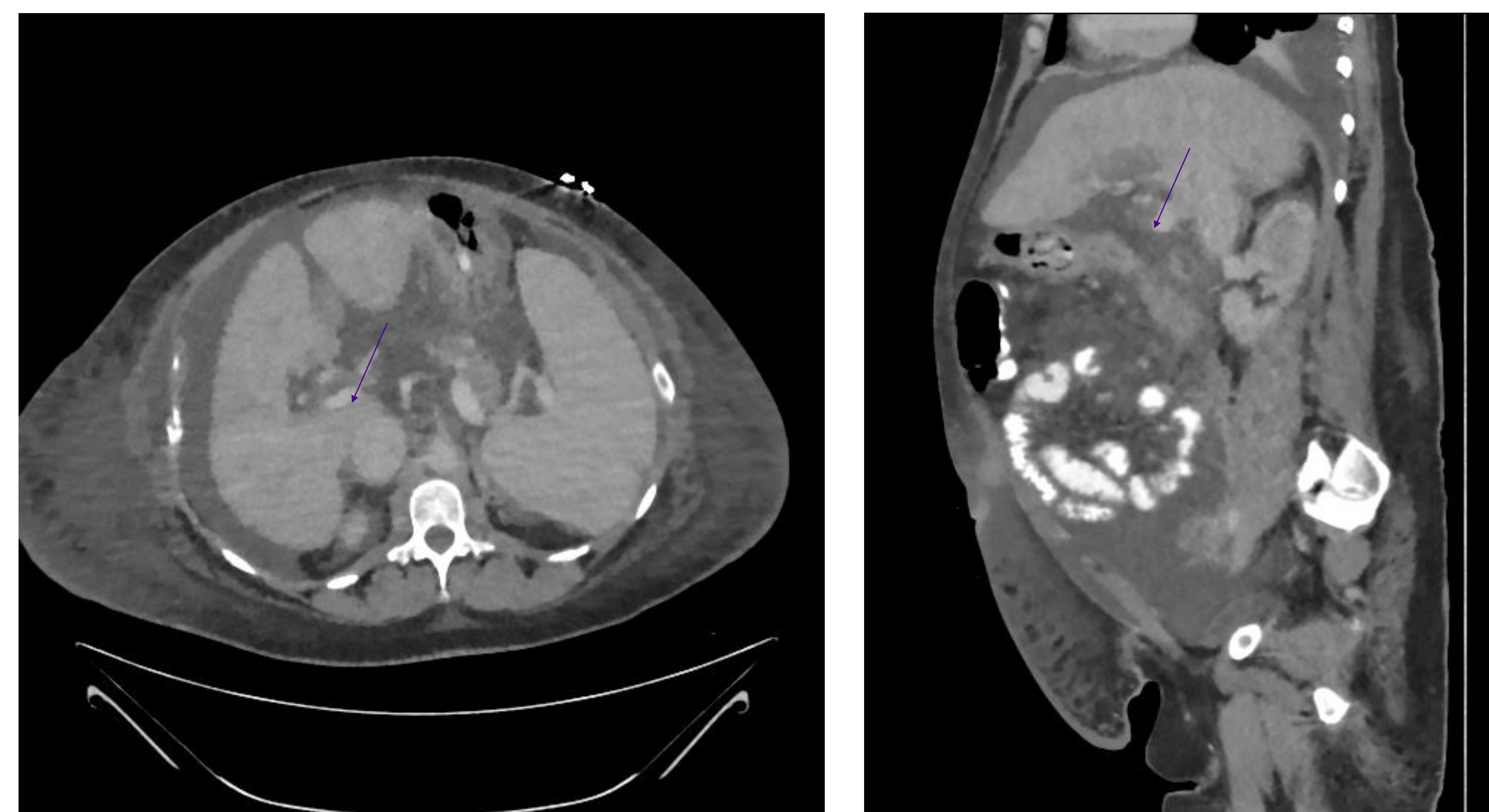


Figure 3a-b. CT abdomen/pelvis with contrast showing eccentric non-occlusive thrombus in the main portal vein extending into both the right and left portal vein branches. There is recanalized paraumbilical vein.

CLINICAL COURSE CONTINUED

- Unfortunately, patient was re-admitted five days later after single large volume hematemesis. Vital signs stable. But, hemoglobin had dropped to 5.6 gm/dL compared to 7.9 gm/dL on discharge. She received blood products and LMWH was held. Repeat EGD showed cratered and superficial esophageal ulcers at the site of prior variceal treatment. Her PPI dose was increased.
- 48 hours post EGD, LMWH was resumed as her hemoglobin stabilized without evidence of re-bleeding. Outpatient surveillance EGD 6 weeks later showed small varices only.
- She continues to be on anticoagulation for 6 months without issue. Follow-up US with duplex after 6 months on anticoagulation showed recanalization of main PV but doppler noted persistence of thrombus in recanalized paraumbilical vein. Thus, she was continued on anticoagulation with plans to stop after 3 additional months.
- 2 months later, she had another episode of hematemesis and was also found to have right leg intramuscular hematoma. Anticoagulation was paused a second time. EGD showed large varices in the lower third of the esophagus, and two bands were successfully placed. After risk/benefits discussion with patient, anticoagulation was discontinued with plans to resume after outpatient follow-up.

DISCUSSION

- This case demonstrates the clinical dilemma concerning management of cirrhotic patients with PVT. To treat or not to treat with anticoagulation? What is the safest therapeutic option? When and for how long treatment should be administered?
- Current guidelines recommend anticoagulation as the mainstay of PVT treatment. However, this can be complicated by other sequelae of decompensated cirrhosis such as variceal bleeding. Consequences of non-treatment include further increase in resistance to portal blood thus worsening portal hypertension.
- In this case, patient's post-partum status also favors anticoagulation as other society guidelines have recommended anticoagulation with LMWH for postpartum patients with vascular disease of the liver. This is thought to be due to underlying hypercoagulable state in setting of pregnancy.
- Individualized treatment algorithms would be useful and should be developed to guide management.