Portuguese Journal of Gastroenterology
Sociedade Portuguesa de Gastrenterologia

Nonmalignant portal vein thrombosis in cirrhosis

Portal vein thrombosis (PVT)

PVT is common in patients with cirrhosis, and the incidence increases with the severity of the liver disease (Child-Pugh B and C).

In most cases, PVT is asymptomatic and may be diagnosed incidentally in semestral abdominal US (for hepatocellular carcinoma (HCC) screening). PVT should be excluded in any patient with cirrhosis with abdominal pain or decompensating event.

Risk factors

- Portal vein flow < 15 cm/s;
- Clinically significant portal hypertension (esophageal varices and thrombocytopenia);
- Previous cirrhosis decompensation event;
- Large porto-systemic collaterals;
- Metabolic factors (obesity and metabolic syndrome).

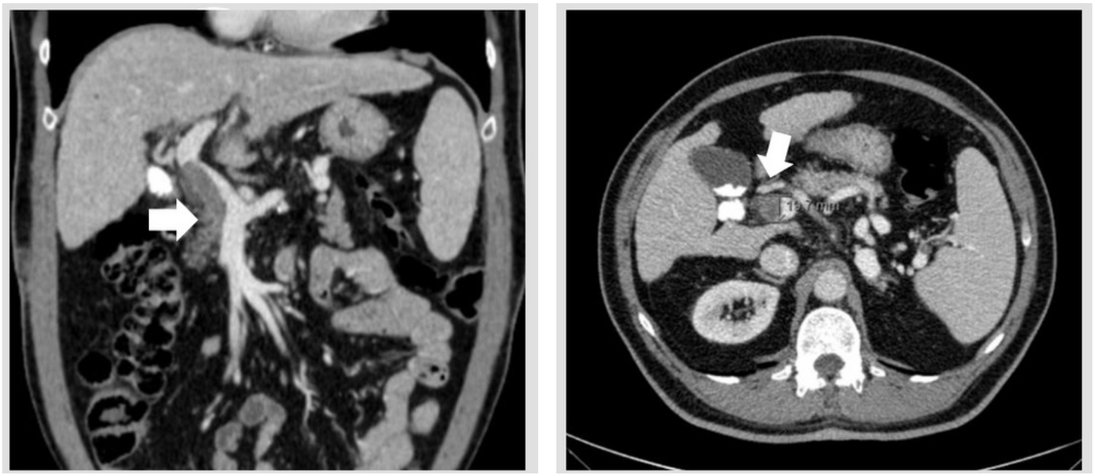
Diagnosis

1st

Abdominal US with doppler → **Abdominal angio-CT scan (or MRI)**

Sensitivity of 90% for complete thrombosis and 50% for parcial thrombosis.

Determine if acute or chronic (more than 6 months); extent and degree of luminal occlusion; rule out HCC.



Angio-CT images showing PVT in a cirrhotic patien (occlusion of 50-75%)

Francisco Capinha, Carlos Noronha Ferreira. **Management of nonmalignant portal vein thrombosis in cirrhosis**, GE Portuguese Journal of Gastroenterology, October 2023

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Who to treat?

- Acute PVT with occlusion > 50% of the PV trunk or both main branches;
- Acute PVT with occlusion <50% that shows thrombus progression in revaluation after 3 months;
- Patients with superior mesenteric vein (SMV) involvement, irrespective of degree of luminal occlusion grade or age of thrombus;

Spontaneous recanalization of PVT

PVT is partial in 73-86% of patients, and approximately 40% of PVT will have spontaneous resolution, typically within 3 months.

How to treat?

Anticoagulation

Consider anticoagulation at least 6 months or until transplant in candidates for liver transplant;

Consider life long anticoagulation or until liver transplant if SMV involvement or past history of intestinal ischemia;

DOACs are safe in Child-Pugh A and should be used with caution in Child-Pugh B patients. Varfarine is an alternative in Child-Pugh A and B (Up to 7 points) patients. LMWH should be used in Child-Pugh C patients.

TIPS (+/-) mechanical trombectomy

Consider when anticoagulation is contraindicated (thrombocytopenia < 50x10^9/L) in liver transplant candidates;

If progressive PVT despite adequate anticoagulation in liver transplant candidates;

Patients with acute or chronic PVT with variceal bleeding and/or refractory ascites.

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Key points for clinical practice

- Doppler should be used with abdominal US to screen for PVT in patients with cirrhosis at the time of semestral surveillance for HCC;
- After diagnosis of PVT with abdominal US, cross sectional imaging with CT scan or MRI is essencial to determine the age and extent of thrombus as well as grade of luminal occlusion
- After detection of PVT and prior to anticoagulation, an upper endosocopy should be performed to screen for large esophageal and/or gastric varices, and if required start prophylaxis with non selective beta blockers (NSBB) or endoscpic band ligation (EBL).
- Anticoagulation is safe in these patients and does not significantly increase the risk of portal hypertensive related bleeding with prior adequate prophylaxis of variceal bleeding;
- Evaluation with angio-CT scan (or MRI) at 3 months and then every 6 months sould be performed after starting anticoagulation, to assess PVT recanalization and/or progression;
- TIPS should be considered in patients who have contraindications to anticoagulation, have concomitant portal hypertension related decompensations including variceal bleeding and ascites, develop adverse events or have progression of thrombosis while on anticoagulant therapy.

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