# Vascular Liver Diseases and Portal Hypertension Management in Pregnancy: A Clinical Case

## Doenças Vasculares do Fígado e Abordagem da Hipertensão Portal na Gravidez: Relato de Caso Clínico

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## Abstract:

Pregnancy in women with portal hypertension carries maternal and foetal risks. We report a case of a woman with porto-sinusoidal vascular disorder (PSVD) and partial portal vein thrombosis, who developed variceal bleeding during pregnancy. Haemorrhage was refractory to endoscopic treatment and required placement of a transjugular intrahepatic portosystemic shunt (TIPS), the pregnancy continued and resulted in the delivery of a healthy infant at 38 weeks. Long-term follow-up confirmed TIPS patency, and the patient subsequently had two further pregnancies. This case highlights the challenges of managing portal hypertension in pregnancy, the role of TIPS, and the importance of individualized thrombotic and haemorrhagic risk assessment.

**Keywords:** Esophageal and Gastric Varices; Hypertension, Portal; Portal Vein; Portasystemic Shunt, Transjugular Intrahepatic; Pregnancy Complications; Pregnancy Outcome; Venous Thrombosis.

## Resumo:

A gravidez em mulheres com hipertensão portal apresenta risco materno e fetal. Relatamos o caso de uma mulher com distúrbio vascular porto-sinusoidal (PSVD) e trombose parcial da veia porta, que desenvolveu hemorragia de varizes gástricas durante a gravidez. A hemorragia foi refratária ao tratamento endoscópico, sendo necessário implantar um shunt portossistémico intra-hepático transjugular (TIPS). A gravidez prosseguiu, culminando no nascimento de um bebé saudável às 38 semanas. A vigilância a longo prazo confirmou a permeabilidade do TIPS, a paciente teve duas gravidezes subsequentes. Este caso evidencia os desafios da abordagem da hipertensão portal na gravidez, o papel do TIPS e a importância da avaliação individualizada do risco trombótico e hemorrágico.

**Palavras-chave:** Complicações na Gravidez; Derivação Portossistémica Transjugular Intra-Hepática; Hipertensão Portal; Resultado da Gravidez; Trombose Venosa; Varizes Esofágicas e Gástricas; Veia Porta.

### Learning points

1. Pregnancy in women with portal hypertension carries a high risk of variceal bleeding.
2. TIPS placement may be life-saving in refractory variceal bleeding during pregnancy.
3. Postpartum monitoring is crucial due to the risk of hemorrhagic and thrombotic complications.
4. Long-term outcomes can be favourable with careful surveillance, including in subsequent pregnancies.
5. Anticoagulation strategies must be individualized, balancing bleeding and thrombotic risks

## Introduction

Portal hypertension in women of childbearing age is uncommon but represents a significant clinical challenge during pregnancy. Physiological changes such as increased plasma volume, cardiac output, and splanchnic blood flow can exacerbate portal hypertension, increasing the risk of variceal bleeding. Variceal haemorrhage may occur during any trimester but is more frequent in the second and third trimesters.[1,2]

TIPS is an established therapy for refractory variceal bleeding, but its use in pregnancy is rare due to procedural and radiation risks. Pregnancy and the postpartum period are hypercoagulable states, increasing the risk of portal vein thrombosis. This case illustrates severe variceal bleeding requiring TIPS placement, with favourable long-term maternal and foetal outcomes.

## Case Report

A woman in her early thirties was diagnosed with porto-sinusoidal vascular disorder (PSVD) and partial portal vein thrombosis after presenting with a first, non-severe episode of gastrointestinal bleeding. The diagnostic workup included a transjugular liver biopsy, which demonstrated lesions

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consistent with nodular regenerative hyperplasia (HNR). No thrombotic risk factors were identified during the clinical evaluation. Non-selective beta-blockers (propranolol 40 mg daily) and therapeutic low-molecular-weight heparin (LMWH) were initiated.

One month later, at nine weeks of gestation, she developed gastric variceal bleeding that was refractory to endoscopic therapy, requiring placement of a transjugular intrahepatic portosystemic shunt (TIPS). The remainder of the pregnancy was managed with prophylactic LMWH. She delivered a healthy infant at 38 weeks by elective Caesarean section. The early postpartum period was complicated by vaginal bleeding requiring transfusion of two units of red blood cells and platelets. Prophylactic LMWH was discontinued after this bleeding episode. Doppler ultrasound confirmed TIPS patency. The beta-blocker was not continued in the postpartum.

Three years later, the patient had a second pregnancy, which ended in a first-trimester miscarriage. Four years after the first pregnancy, she had a third pregnancy resulting in vaginal delivery of a healthy infant at 40 weeks of gestation. No complications occurred, anticoagulation was not required, and Doppler surveillance confirmed continued Portal Vein and TIPS patency.

## Discussion

PSVD is a rare entity, the awareness of which is increasing. Data on pregnancy in women with PSVD are limited as study populations are heterogeneous.[1,3,4]

This case highlights key challenges in managing portal hypertension during pregnancy. Variceal bleeding remains one of the most serious complications, prophylaxis for variceal bleeding should be carefully implemented and TIPS can be lifesaving in refractory cases, allowing continuation of pregnancy with favourable outcomes.

The case also emphasizes the importance of individualized anticoagulation strategies and close surveillance of TIPS patency during pregnancy and postpartum. Long-term follow-up demonstrated sustained TIPS function and favourable outcomes in subsequent pregnancies, including one full-term delivery without anticoagulation.

Pregnancy should not be contraindicated in women with PSVD with well-controlled liver disease. These women should however, be informed of the risk of liver-related events and of the high rate of miscarriage and preterm birth.[3]

Careful multidisciplinary management is essential for optimizing maternal and foetal outcomes in women with portal hypertension.[2] ■

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