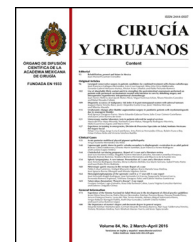




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## CLINICAL CASE

### Portal perfusion with right gastroepiploic vein flow in liver transplant<sup>☆</sup>



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#### KEYWORDS

Cavernous transformation;  
Portal vein;  
Thrombosis;  
Liver cirrhosis;  
Liver transplantation

#### Abstract

**Background:** Liver transplantation in patients with liver cirrhosis, portal vein thrombosis, and cavernous transformation of the portal vein, is a complex procedure with high possibility of liver graft dysfunction. It is performed in 2–19% of all liver transplants, and has a significantly high mortality rate in the post-operative period. Other procedures to maintain portal perfusion have been described, however there are no reports of liver graft perfusion using right gastroepiploic vein.

**Clinical case:** A 20-year-old female diagnosed with cryptogenic cirrhosis, with a Child-Pugh score of 7 points (class "B"), and MELD score of 14 points, with thrombosis and cavernous transformation of the portal vein, severe portal hypertension, splenomegaly, a history of upper gastrointestinal bleeding due to oesophageal varices, and left renal agenesis. The preoperative evaluation for liver transplantation was completed, and the right gastroepiploic vein of 1-cm diameter was observed draining to the infrahepatic inferior vena cava and right suprarenal vein. An orthotopic liver transplantation was performed from a non-living donor (deceased on January 30, 2005) using the Piggy-Back technique. Portal vein perfusion was maintained using the right gastroepiploic vein, and the outcome was satisfactory. The patient was discharged 13 days after surgery.

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**PALABRAS CLAVE**

Transformación cavernomatosa;  
Vena porta;  
Trombosis;  
Cirrosis hepática;  
Trasplante hepático

**Conclusions:** Liver transplantation was performed satisfactorily, obtaining an acceptable outcome. In this case, the portal perfusion had adequate blood flow through the right gastroepiploic vein.

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**Perfusión portal con flujo de la vena gastroepiploica derecha en trasplante hepático****Resumen**

**Antecedentes:** El trasplante hepático realizado en pacientes con cirrosis hepática, trombosis venosa portal y transformación cavernomatosa de la vena porta, es un procedimiento de alta complejidad y elevada posibilidad de disfunción del injerto hepático; se realiza en el 2–19% de los trasplantes hepáticos y tiene una mortalidad significativamente alta en el postoperatorio. Se ha descrito la perfusión portal alterna, no obstante no hay reportes de perfusión alterna con la vena gastroepiploica derecha.

**Caso clínico:** Mujer de 20 años de edad con diagnóstico de cirrosis hepática criptogénica Child-Pugh: «B» 7 puntos, MELD: 14 con trombosis y degeneración cavernomatosa de la vena porta, hipertensión portal severa, esplenomegalia con antecedentes de sangrado del tubo digestivo alto, por varices esofágicas y agenesia de riñón izquierdo. Fue realizado protocolo de trasplante hepático y se observó la vena gastroepiploica derecha con un diámetro de 1 cm drenando a la vena cava infrahepática y vena suprarrenal derecha. Se realizó el trasplante hepático ortotópico de donante fallecido el día 30 de enero del 2005 con técnica de Piggy-Back, la perfusión venosa portal se realizó a través de la vena gastroepiploica derecha y la evolución fue satisfactoria, la paciente fue egresada sin complicaciones, 13 días posterior al trasplante.

**Conclusiones:** El trasplante hepático fue realizado de forma satisfactoria y con buen resultado en el presente caso, ya que la perfusión portal fue llevada a cabo con adecuado flujo a través de la vena gastroepiploica derecha.

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**Background**

Liver transplantation in patients with liver cirrhosis, portal vein thrombosis, and cavernous transformation of the portal vein, is a highly complex procedure with high possibility of liver graft dysfunction. It is performed in 2–19% of liver transplants<sup>1</sup> and has been associated with a significantly high rate of post-transplant mortality.<sup>2</sup> Absence of the portal flow due to portal vein thrombosis is a multifactorial condition that arises from a combination of hereditary and acquired factors.<sup>3</sup> Cirrhosis is the most common aetiological factor, and it is present in 24–32% of cases.<sup>4</sup> It presents less often due to other causes, such as cancer, infection, inflammation and thrombophyllic disorders. The incidence of portal vein thrombosis is associated with the severity of the cirrhosis,<sup>5</sup> and it is therefore a common problem during liver transplant, developing inside the liver and spreading to the extra hepatic portion of the portal vein. In some cases the thrombosis extends to the mesenteric branches, giving rise to splanchnic venous thrombosis.<sup>6</sup> Although portal vein thrombosis increases the difficulty of liver transplant<sup>7,8</sup> it is not an absolute contraindication.<sup>9</sup>

If thromboendovenectomy is impossible patients with complete portal vein thrombosis, alternatives for portal

reconstruction must be considered.<sup>5,10–15</sup> Cavoportal hemitransposition<sup>16</sup> and multivisceral transplant<sup>17</sup> are options for patients with complete portal vein thrombosis when no collateral veins are present.

Although liver transplant is beneficial for the majority of patients<sup>5,10–15</sup> the risks must be carefully considered for those with clinically stable cirrhosis and portal vein thrombosis. The indication must be established for clinically unstable patients, even when there is a risk of postoperative complications and a higher rate of intrahospital postoperative mortality.<sup>18,19</sup>

In this case of liver transplant we performed portal perfusion using the flow of the right gastroepiploic vein in the absence of portal flow. There are currently no reports of this having been carried out before, so that we present the first case of liver transplant with portal perfusion using right gastroepiploic vein flow.

**Clinical case**

The patient is a 20-year-old woman, who received a liver transplant from a donor who died on 30 January 2005, diagnosed with cryptogenic cirrhosis of the liver, grade IV portal

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