



## Brief Clinical Observation

# Transjugular intrahepatic portosystemic shunt: A case report of rescue management of unrestrainable variceal bleeding in a pregnant woman

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## Abstract

Liver cirrhosis complications in pregnant women are frequent and death rate secondary to variceal bleeding is relevant. Both sclerotherapy and banding ligation seem to be safe procedures in pregnancy; when bleeding is not arrested endoscopically an emergency transjugular intrahepatic portosystemic shunt should be considered, but data regarding pregnant cirrhotic women are scarce. We describe the case of a pregnant woman at 14 weeks of gestation who underwent management of acute variceal bleeding by transjugular intrahepatic portosystemic shunt. Transjugular intrahepatic portosystemic shunt may represent a rescue treatment for failed attempts of band ligation or sclerotherapy. © 2007 Editrice Gastroenterologica Italiana S.r.l. Published by Elsevier Ltd. All rights reserved.

*Keywords:* Cirrhosis; Pregnancy; TIPS; Variceal bleeding

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## 1. Introduction

The mortality rate from liver cirrhosis complications in pregnant women ranges from 10 to 61% [1], but death secondary to variceal bleeding peaks at 78% [1,2]. Both sclerotherapy and variceal banding seem to be safe procedures in pregnancy [1]. When bleeding is not arrested endoscopically in cirrhotic patients, an emergency transjugular intrahepatic portosystemic shunt (TIPS) [3] is indicated, but data regarding pregnant cirrhotic women are scarce. We describe the case of a pregnant woman at 14 weeks of gestation who underwent management of acute variceal bleeding by TIPS. Both measured and calculated foetal radiation exposure were negligible, therefore it did not justify abortion for medical reasons. TIPS is still contraindicated during pregnancy, but it may represent a rescue treatment for failed attempts of band ligation or sclerotherapy.

## 2. Case report

A 33-year-old woman at 14 weeks gestation with cryptogenic cirrhosis was admitted to the hospital for haematemesis due to acute bleeding from gastrooesophageal varices. The haemoglobin (Hb) was 8.5 g/dL, the platelet count (PLT) was  $56 \times 10^3$  mL, arterial pressure (AP) 100/70 mmHg and the heart rate was 100 per min. The blood screening test showed the features of advanced liver disease with prolonged INR, hypoalbuminemia (albumin 2.2 g/dL) and mild hypertransaminasemia (GOT 124 U/L, GPT 55 U/L). Esophagogastroduodenoscopy (EGDS) showed active bleeding from oesophageal varices which was stopped by an atroxisclerol injection (10 mL perivariceal and 20 mL intravariceal). During the procedure the patient received concentrated red cells (CRC) and fresh frozen plasma (FFP). Gynaecological examination and ultrasonography (US) did not reveal complications for the foetus. The patient was informed about the potential risks of carrying the pregnancy to term and the potential risks for the foetus of using drugs to treat bleeding varices. She confirmed, by informed written consent, her wish to carry the pregnancy to term even if potentially toxic

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drugs for the foetus were used; she was therefore treated by i.v. betablockers, octreotide and ceftazidime. Ten hours after sclerotherapy, she had a relapsing episode of massive haematemesis and the active variceal bleeding was again arrested by an atoxisclerol injection (20 mL perivariceal and 20 mL intravariceal) and an infusion of 5 units of CRC and 4 units of FFP. The procedure was complicated by acute respiratory distress syndrome, which was treated. There were no complications for the foetus at gynaecological examination and US. In view of a possible further episode of variceal bleeding, a rescue TIPS was considered after multidisciplinary consensus with obstetricians and radiologists. The patient was informed of the potential risk of the foetus developing oncohaematological diseases after birth from X-ray exposure and of the potential impairment of her liver function [1], and she gave written consent. In particular, the radiation dose exposure for the mother and the foetus was evaluated using an anthropomorphic phantom to perform a simulation of the procedure. Magnetic resonance (MR) abdominal examination and a Doppler-US were performed to document the patency of the portal vein, intrahepatic portal branches and hepatic veins.

Five days after the second bleeding episode, a third EGDS documented the presence of large varices and several eschars in the distal oesophagus. After this EGDS, a third massive bleeding episode occurred and the TIPS procedure was then initiated after having shielded the pelvic region by a 0.5 mm lead equivalent apron to make the irradiated abdominal field as small as possible (an undercouch X-ray tube was positioned at a focal spot-to-skin distance (FSD) of 70 cm). The patient was lightly sedated and assisted by an anaesthesiologist during the whole procedure. The hepatic vein portal gradient (HVPG) was calculated to be 31 mmHg while the measured portal pressure was 41 mmHg. The sagittal hepatic vein to portal vein path was dilated using a balloon dilator (to 12 mm of calibre), and an expandable metal stent (12 mm of calibre, 9 cm of length, Wallstent Boston Scientific®) was inserted to maintain the patency of the shunt. In spite of good flow through the TIPS, the creation of the intrahepatic shunt did not lead to a reduced variceal size; therefore selective embolization of the varices by coils was performed (Fig. 1). At the end of the procedure, the portal vein pressure decreased to 26 mmHg. The total time of fluoroscopy was 21 min, the

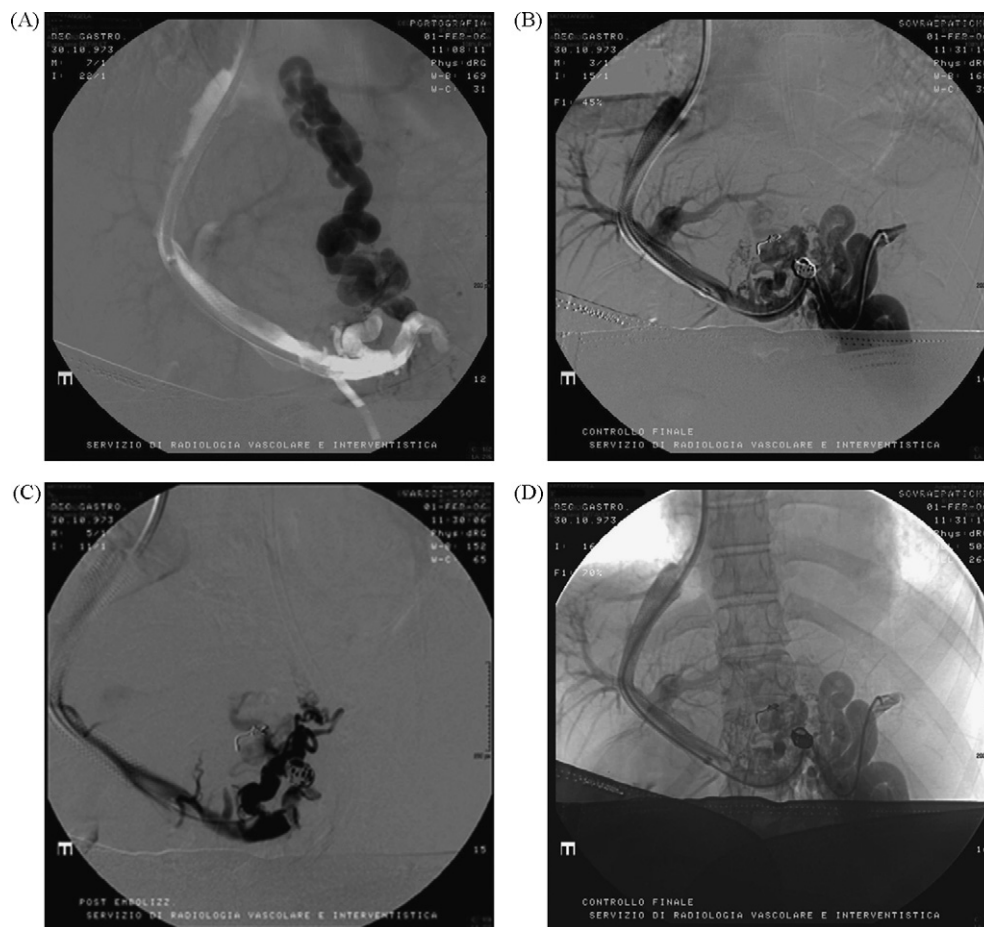


Fig. 1. (A) despite TIPS placement there was a persistent variceal perfusion from left gastric vein; (B, C) left gastric vein embolization by coils; (D) at the end of there procedure varices were completely devascularized.

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