

# Successful treatment with transjugular intrahepatic portosystemic shunt (TIPS) of recurrent massive rectal bleeding due to portal hypertension: Case report

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*Bleeding from anorectal varices can be massive and life-threatening. Punctual separation between hemorrhoids and anorectal varices is important. Numerous treatment options are available for management of bleeding anorectal varices, but none of them has demonstrated definitive efficacy. We report a case of successful transjugular intrahepatic portosystemic shunt in controlling massive recurrent rectal variceal bleeding in an elderly male patient.*

**Key words:** Transjugular intrahepatic portosystemic shunt, anorectal varices, massive lower gastrointestinal bleeding, elderly patient

## Portal hipertansiyona bağlı tekrarlayan masif rektal kanamanın transjuguler intrahepatik portosistemik şant (TIPS) ile başarılı tedavisi

*Anorektal varislerden kaynaklı kanamalar masif ve hayatı tehdit edici olabilir. Anorektal varislerle hemoroidin zamanında ayırt edilmesi önemlidir. Anorektal varis kanamalarında çeşitli tedavi seçenekleri vardır fakat bu tedavilerle ilgili kesin sonuçlar belirsizdir. Biz bu olguda yaşlı bir erkek hastada tekrarlayan masif rektal variseal kanamanın transjugular intrahepatik portosistemik şantla etkin tedavisini sunacağız.*

**Anahtar kelimeler:** Transjugular intrahepatik portosistemik şant, anorektal varis, masif alt gastrointestinal kanama, yaşlı hasta

### INTRODUCTION

Portal hypertension leads to the development of collaterals at the sites of portal and systemic venous anastomosis (1, 2). In portal hypertension, varices can occur in the distal esophagus and in the gastric fundus or cardia but can also develop in other sites such as the umbilical and rectal plexuses. Esophageal and gastric varices are the most common causes of portal hypertension-related hemorrhage, but anorectal varices may also bleed (3). In patients with portal hypertension and variceal hemorrhage, the transjugular intrahepatic

portosystemic shunt (TIPS) is indicated when drug therapy or endoscopic treatment do not succeed to control bleeding. TIPS procedure can be considered as an alternative treatment of recurrent bleeding from anorectal varices in patients with decompensated portal hypertension with cirrhosis.

### CASE REPORT

A 70-year-old male patient with alcoholic liver cirrhosis was referred to our tertiary hospital from an

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outside hospital for assessment and further treatment of recurrent life-threatening anorectal variceal bleedings. He had been in good life condition until 2007, when he was admitted to the outside hospital with ascites. A clinical diagnosis of liver cirrhosis resulting from alcohol intake was made in gastroenterology unit. Other signs of portal hypertension such as non-bleeding esophageal varices and splenomegaly were present. The patient was well for the following three years. Liver/renal function and another laboratory tests remained normal. In 2010, recurrent mild rectal bleeding occurred without a need for transfusion. In late 2010, the bleedings became more severe and the patient was readmitted to the same hospital. Emergency and conservative measures such as intravenous fluids and blood transfusions were used to control the rectal bleeding. After recovering within a few days, the patient was transferred to our institution. On admission, physical examination revealed a pale patient with normal vital signs. He was noted to have splenomegaly with mild ascites and lower extremity edema. Laboratory analysis revealed a hemoglobin level of 11.4 g/dL, alkaline phosphatase level of 148 U/L (normal 30-120 U/L), albumin level of 3,6 g/dL (normal, 3,5-5 g/dL), total bilirubin value of 0,9 mg/dL (normal, 0.2-1.0 mg/dl), aspartate aminotransferase level of 23 U/L (normal, 0-35 U/L), alanin aminotransferase value of 18 U/L (0-35 U/L), and prothrombin time of 1.22 seconds (normal 0,8-1,2 seconds). On sonographic examination of the abdomen, cirrhotic liver and a large amount of ascites was noted. Abdominal computed tomography (CT) scan showed engorged veins along the wall of the rectum (Figure 1A). Coronal three-dimensional reformatted multi-detector row CT scan better showed the engorged veins (Figure 1B). Additionally, CT showed a cirrhotic liver, splenomegaly, ascites, and moderate gastro-esophageal varices. Flexible sigmoidoscopy showed rectal varices and esophagogastroduodenoscopy showed multiple esophageal and gastric varices. For portal decompression, TIPS seemed to be the most appropriate procedure. Under sedation and sterile conditions using the right internal jugular vein a 18G Seldinger needle was advanced through a 9 F introducer sheath under fluoroscopic guidance into the right portal vein close to the portal venous bifurcation. Once the portal vein was entered, a 5 F catheter was introduced over a 0,035 inch guidewire into the portal vein. Pressure measurements and a portal venogram were performed to permit calculation of the por-

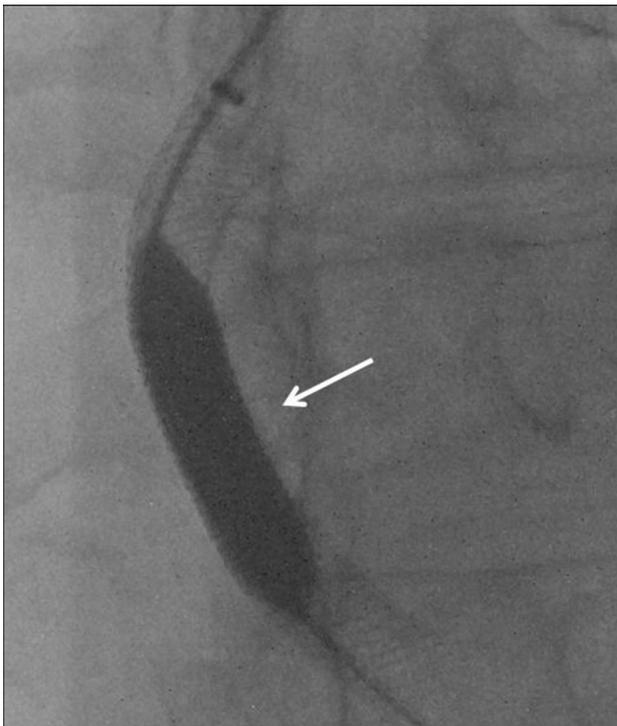


**Figure 1.** (A) Portal phase computed tomography of lower abdomen showing engorged veins (white arrow) along the wall of the rectum and ascites (star). (B) Coronal three-dimensional multi-detector row CT scan showing engorged rectal veins (white arrows) along the wall of the rectum.

tosystemic gradient and to identify the hepatofugal flow both in the superior and inferior mesenteric veins, filling the large serpiginous anorectal varices. Then, a 10mm x 94 mm self-expandable Wallstent (Boston Scientific, Watertown, MA) was inserted between the right hepatic and portal veins (Figure 2) and then dilated with an 10 mm balloon catheter (Figure 3). The portal venogram and pressure measurement were repeated. The pretreatment portosystemic gradient of 20 mm Hg was reduced to 8 mm Hg. No procedure-related complications occurred. Liver function tests remained normal and signs of encephalopathy were absent.



**Figure 2.** Successful transjugular intrahepatic placement of a self-expanding metal stent from the right hepatic vein to the right portal vein (white arrow).



**Figure 3.** TIPS stent and inflated balloon catheter (white arrow) under fluoroscopy.

Repeated transabdominal sonography with Doppler ultrasound showed a patent stent with hepatopetal flow and an almost complete regression of ascitic fluid. The subsequent course of the patient

was uneventful. He was discharged 10 days after admission. Regular follow-up controls (clinical examination, laboratory studies, duplex-sonographic investigations of stent patency, and function) at 2, 6, and 12 months after discharge confirmed that the patient was well with functioning TIPS. No further rectal bleeding episodes and no signs of hepatic encephalopathy have been noted during this period.

## DISCUSSION

Ectopic varices are defined as dilated portosystemic collaterals occurring in sites other than the gastroesophageal region, such as the small bowel, stomach, and the rectum. In a prospective study of 100 patients with cirrhosis, Hosking et al. reported the presence of anorectal varices in 44% of the patients, particularly in patients with long-standing portal hypertension (4, 5). Bleeding anorectal varices are a less frequent complication than gastroesophageal variceal hemorrhage, but it may be massive and life-threatening. Bleeding rates in patients with confirmed anorectal varices are reported to range from 0.5 to 5% (3). The cause of bleeding from varices still remains uncertain (5). External trauma and internal hydrostatic pressure may be contributing factors to bleeding anorectal varices. There are only few data of portosystemic pressure gradients in patients with bleeding anorectal varices (6,8). It has been shown that the portosystemic gradient of 12 mmHg appears to be the threshold for the appearance of esophageal varices. A portosystemic gradient less than 12 mmHg does not pose a risk for bleeding (7). Although similar data for bleeding anorectal varices does not exist, our patient had successful control of bleeding with a post-TIPS reduction of portosystemic gradient from 20 mmHg to 8 mmHg.

Anorectal varices and hemorrhoids are different entities, although they may coexist. Anorectal varices are dilated portosystemic collaterals present in the rectum and anal canal connecting the superior hemorrhoidal veins of portal origin to the inferior hemorrhoidal veins draining into the systemic circulation (9). Rectosigmoidoscopy is helpful in differentiating anorectal varices from hemorrhoids. Varices are blue to gray, serpiginous, generally measure 3-6 mm in diameter, and easily deflate with digital pressure. In contrast, hemorrhoids have a purple color and do not extend proximally to the dentate line into the rectum (1, 4, 5). There is no common consensus regarding the the-

therapeutic management of bleeding anorectal varices (2). Control of a hemorrhage has been documented with endoscopic sclerosant injection (10), band ligation (11), inferior mesenteric vein ligation (12), and variceal embolization therapy (13). However, anorectal varices seem to re-bleed in most patients unless a definite reduction of the portal venous pressure is achieved. Surgical portocaval shunt is effective in treating bleeding anorectal varices, but this procedure is restricted to patients with adequate hepatic reserve. TIPS has demonstrated to be an effective alternative in the management of esophageal and gastric variceal bleeding and is associated with significantly less morbidity and mortality than the surgical shunt procedure (14, 15). Especially in Child-Pugh class

B and C patients, the use of TIPS is a preferred option, as it does not require laparotomy. Although long-term results of patients with TIPS is limited, we advocate portosystemic shunting as the first-line therapeutic option in patients with portal hypertension and bleeding anorectal varices (14). Compared with local treatment including sclerotherapy, rubber banding, and surgical suture, TIPS is a safe and effective alternative therapeutic option with a low complication rate even in older patients, as shown in our report.

Even though numerous treatment options are available for portal decompression, we believe that this minimally invasive nonsurgical technique can be successfully used in the management of ectopic, including rectal, varices in elderly patients especially.

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