

In a patient with active variceal bleeding brought on by Systemic Lupus Erythematosus-induced Cirrhosis, a transjugular intrahepatic portosystemic shunt revision and embolization of an arteriportal fistula were performed simultaneously.

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Abstract

Based on the type and severity of the shunt failure, transjugular intrahepatic portosystemic shunt (TIPS) occlusion is a frequent event that can be addressed. Arteriportal fistulas (APFs) are uncommon connections between the systemic artery and portal venous systems that can cause symptomatic portal hypertension. In this instance, we go over how to treat a patient who has variceal bleeding brought on by TIPS dysfunction that has been made more difficult by the existence of an APF.

Keywords : Transjugular intrahepatic portosystemic shunt, Arteriportal fistula, Embolization, Endovascular intervention, Portal hypertension

INTRODUCTION

Occlusion of transjugular intrahepatic portosystemic shunts (TIPS) is a common issue despite improvements in the techniques for TIPS creation. Failure is usually evidenced by remanifestation of symptoms of portal hypertension.[1,2] It has been shown that covered stents have a dysfunction rate of up to 44% at 2 years.[3] Arteriportal fistulas (APFs) are rare communications between systemic arteries and the portal venous system. APFs can present with symptoms

of portal hypertension due to the systemic blood pressure being transmitted to the portal system. Here, we report the management of a case of TIPS dysfunction which was complicated by the presence of an incidentally detected APF.

CASE REPORT

A 61-year-old Hispanic woman with cirrhosis brought on by systemic lupus erythematosus (SLE) underwent straightforward TIPS creation. She developed ascites symptoms around a year later, and it was discovered that she had TIPS stenosis of 67% in the proximal end. As a result, the stent had to be extended by 2 cm toward the hepatic venous-inferior vena cava (IVC) junction, followed by venoplasty.

Three years later, the patient's haemoglobin level had dropped from 10 mg/dL to 7.3 mg/dL, and she had bleeding stomach and esophageal varices. Ultrasonography predicted imminent TIPS failure with an 86 cm/s peak TIPS velocity. The TIPS stenosis was verified by computed tomographic angiography, which also revealed an accidental high flow APF between a branch of the superior mesenteric artery (SMA) and the superior mesenteric vein (SMV), which caused the SMV to dilate significantly.

DISCUSSION

Despite scientific advancements in the development of TIPS, shunts are thought to malfunction at a rate of 44% after two years. [3] According to recommendations made by the American Association for the Study of Liver Diseases, the best sign of shunt dysfunction is the recurrence of pH symptoms. [1] Monitoring with close ultrasound follow-up is successful. a 20–50% decrease in conduit flow, TIPS velocity of 50–250 cm/s, or a change in the direction of flow in the intrahepatic portal branches are all indications of TIPS malfunction. [4,5] Overt occlusion, a portosystemic pressure gradient larger than 12 to 15 mmHg, or a greater than 50% loss in shunt diameter are angiographic indicators of TIPS failure. [6] Depending on the timing, TIPS failure could be bile- or non-bile-related. It could also be the result of stent movement (migration, shortening, and displacement), which causes pseudointimal hyperplasia.

All of these complications could lead to thrombosis and/or stenosis, which would then cause occlusion and shunt failure. In this instance, a 61-year-old woman with chronic liver disease required numerous TIPS adjustments and constant monitoring, follow-up imaging without intervention.

Her occlusion was primarily at the proximal end, close to the junction of the hepatic vein and IVC, which highlights a common characteristic of TIPS failure. Pereira et al. thoroughly investigated TIPS dysfunction and proposed a practical clinical practice algorithm to choose a management course, including comprehensive descriptions of available treatments. [2] Stratification determines the type of failure (stenosis vs. occlusion), then moves on to anatomical considerations (proximal, mid, and distal), and finally offers therapy recommendations based on the underlying problem. Angioplasty, stent revision, and new shunt development are just a few of the interventional methods that might be used as treatment alternatives. Rescue therapy using splenic artery embolization or balloon transvenous obliteration techniques (balloon-occluded retrograde) may be necessary in cases that are resistant to treatment.

CONCLUSION

Both the TIPS occlusion and the APF needed to be fixed in order to get rid of the symptoms in this patient. The difficulty to access the TIPS through the jugular approach, which required direct percutaneous access of the TIPS and a body floss wire procedure for access into the TIPS, further complicated the situation. In this unusual situation, our paper illustrates a successful managerial approach.

References

1. Boyer TD, Haskal ZJ, American Association for the Study of Liver Diseases. The role of transjugular intrahepatic portosystemic shunt (TIPS) in the management of portal hypertension: Update 2009. *Hepatology* 2010;51:306.
2. Pereira K, Baker R, Salsamendi J, Doshi M, Kably I, Bhatia S. An approach to endovascular and percutaneous management of transjugular intrahepatic portosystemic shunt (TIPS) dysfunction: A pictorial essay and clinical practice algorithm. *Cardiovasc Intervent Radiol* 2016;39:639-51.
3. Perarnau JM, Le Gouge A, Nicolas C, d'Alteroche L, Borentain P, Saliba F, et al. Covered vs. uncovered stents for transjugular intrahepatic portosystemic shunt: A randomized controlled trial. *J Hepatol* 2014;60:962-8.
4. Darcy M. Evaluation and management of transjugular intrahepatic portosystemic shunts. *AJR Am J Roentgenol* 2012;199:730-6.
5. Keller FS, Farsad K, Rösch J. The transjugular intrahepatic portosystemic shunt: Technique and instruments. *Tech Vasc Interv Radiol* 2016;19:2-9.
6. Nicolas C, d'Alteroche L, Perarnau JM. Reply to: Shunt dysfunction: Is it suitable as the primary end point in transjugular intrahepatic portosystemic shunt trials? *J Hepatol* 2015;62:247-8.
7. Takahashi A, Abe K, Saito R, Iwadate H, Okai K, Katsushima F, et al. Liver dysfunction in patients with systemic lupus erythematosus. *Intern Med* 2013;52:1461-5.
8. Yang QB, He YL, Peng CM, Qing YF, He Q, Zhou JG. Systemic lupus erythematosus complicated by noncirrhotic portal hypertension: A case report and review of literature. *World J Clin Cases* 2018;6:688-93.
9. Guzman EA, McCahill LE, Rogers FB. Arterioportal fistulas: Introduction of a novel classification with therapeutic implications. *J Gastrointest Surg* 2006;10:543-50.
10. Barile-Fabris L, Hernández-Cabrera MF, Barragan-Garfias JA. Vasculitis in systemic lupus erythematosus. *Curr Rheumatol Rep* 2014;16:440.