Reply to: Tips for portal vein thrombosis (PVT) in cirrhosis: Not only unblocking a pipe

To the Editor:

Portal vein thrombosis (PVT) has changed the natural history of liver cirrhosis [1] because it increases the incidence of variceal re-bleeding and mortality [2,3]. Several case series have demonstrated a relatively high re-canalization rate in cirrhotic patients receiving anticoagulation for PVT [4,5]. However, it is important to note that in these studies the patients with portal cavernoma were excluded from anticoagulation therapy and a high proportion of the patients with partial portal vein occlusion were included [6]. In addition, it should not be neglected that anticoagulation may aggravate the risk of bleeding in cirrhotic patients with symptomatic portal hypertension. In contrast, transjugular intrahepatic portosystemic shunt (TIPS) is advantageous in that it both deals with complications of portal hypertension and recanalizes the thrombosed portal vein [7]. But TIPS is severely restricted in the setting of PVT because of its heterogeneous stage, degree, and extension. In a recently published study, we retrospectively collected the data of 57 cirrhotic patients with PVT, who underwent TIPS in our department between December 2001 and September 2008 [8]. Compared with the conclusions of the previous work that “an element of serendipity was required if a hydrophilic wire was to find the way through a thrombus or area of cavernous transformation” [9], the most prominent significance of our study was to explore the predictors of TIPS failure and the prognostic factors of cirrhotic patients with PVT receiving TIPS in a relatively large sample size. In the letter by Senzolo et al., several details about our paper are discussed [10]. Herein, we are very glad to kindly discuss these points with them.

Is an estimation of age of PVT really helpful to identify the stage?

As we previously mentioned, no uniform definitions regarding the stage of PVT have been postulated [11]. As far as the stage of non-cirrhotic PVT is concerned, acute PVT is often identified according to the interval between the onset of abdominal pain and diagnosis of PVT. However, “various time frames for the acute stage have been proposed in different studies, including less than 14, 40, 60, or 90 days since the onset of abdominal pain or so-called ‘recent’ abdominal pain” [8]. In addition, portal cavernoma, a sign of chronic PVT, could rapidly develop within only a few days since the formation of fresh PVT [12]. Accordingly, it does not seem that an estimation of age of PVT is applicable to identify the stage.

Remarkably, all included patients in our study were cirrhotic and presented severe complications of portal hypertension. PVT is often an incidental finding in these patients. Only four patients presented with abdominal pain caused by portal vein obstruction. Three of them were diagnosed with portal cavernoma before TIPS procedures.

Is TIPS insertion really indispensable as thrombus is extended to SMV?

As Riggio et al. previously proposed, the major benefit of TIPS in the treatment of PVT is that the TIPS-induced acceleration of the portal blood flow may prevent the extension of thrombosis into the portal venous system [13]. Similarly, our clinical observations indicated that residual SMV thrombus would naturally disappear after a shunt was successfully created, if there was blood flow from the SMV into the shunt (Fig. 1). This phenomenon might result from the so-called “scouring effect” from the persistent portal vein inflow. In this case, it might be unnecessary to place another stent in the SMV.

If there was no or little blood flow from the SMV into the shunt, balloon dilatation or another stent placement would be performed to maintain the shunt patency. Stent placement into the SMV is preferential in the patients with splenectomy. In this case, the transplant surgery does become more complicated. But if the stent was not extended to the SMV, it would be difficult to maintain shunt patency. On the other hand, SMV thrombosis will greatly preclude the possibility of liver transplantation.

In contrast, we did not recommend TIPS placement in the presence of diffuse thrombosis within SMV branches, as one case of failed TIPS was reported by Bauer et al. [14]. It is primarily because the absence of adequate blood flow into shunt may cause an invalid TIPS insertion.

Are percutaneous transhepatic or transsplenic approaches really necessary to facilitate the difficulty of TIPS procedure?

A major difficulty of creating a TIPS in patients with PVT is how to access the intrahepatic portal vein branch. Undoubtedly, a conventional transjugular approach alone is safer. But it is difficult to target a landing site in cases of no patent intrahepatic portal vein branch. In our center, if indirect portography demonstrates poor or no visualization of the portal vein and its branches, a percutaneous transhepatic approach could provide more direct access to the intrahepatic portal vein branch, a better angle for endovascular manipulations and an easier handle for probing a thrombus [15], thereby increasing TIPS success rate. If puncture of the intrahepatic portal vein branch is impossible using a transhepatic approach, a percutaneous transsplenic approach could be attempted in the patients without splenectomy or splenic venous occlusion. Additionally, we emphasized that both the transhepatic and transsplenic tracts should be carefully embolized with coils after TIPS to decrease the risk of intraperitoneal bleeding caused by percutaneous approaches.

With the advance of TIPS technique, more and more centers have attempted to use TIPS for PVT. These works have made a substantial contribution toward wider application of this technique. But given the retrospective nature and the absence of the control group, we have to acknowledge that these studies are of low quality. These data only illustrate who are eligible to receive a successful TIPS creation, but do not accurately clarify the beneficial effect of TIPS, especially as TIPS is compared with other conventional treatment modalities. Therefore, it is very important to perform two formidable tasks: (1) prospective cohort studies to confirm these present conclusions; and (2) randomized controlled trials to investigate whether TIPS should be a first-line therapy modality for the prevention of variceal re-bleeding in cirrhotic patients with PVT. In the future, we do
look forward to more and more communications with others regarding this topic!

Conflict of interests

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References


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