

Transcript Details

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New Guidelines for TIPS in Portal Hypertension

Dr. Buch:

The procedure of transjugular intrahepatic portosystemic shunt, or TIPS for short, is a crucial therapeutic option to help treat complications of portal hypertension. And new guidelines were developed in an article, titled “*North American Practice-Based Recommendations for Transjugular Intrahepatic Portosystemic Shunts in Portal Hypertension*,” which was published in *Clinical Gastroenterology and Hepatology* in 2022.

You’re listening to *GI Insights* on ReachMD. I’m your host, Dr. Peter Buch. And joining me today to discuss TIPS is the lead author of that article, Dr. Justin Boike, who is an Assistant Professor of Medicine at the Northwestern University Feinberg School of Medicine.

Dr. Boike, welcome to the program.

Dr. Boike:

Thank you so much for having me. I appreciate the invitation.

Dr. Buch:

To get us started, Dr. Boike, what testing is necessary for a patient with portal hypertension prior to a TIPS placement?

Dr. Boike:

Excellent. So the prior testing that should be really considered is a couple of things. So most importantly, a patient should have an echocardiogram of the heart to evaluate for congestive heart failure, severe diastolic dysfunction, as well as severe valvular disease, and sometimes our patients also can exhibit pulmonary hypertension, and this is paramount to rule out, or at least evaluate for, prior to consideration of TIPS. The other components of preoperative testing, if you will, should include some degree of cross-sectional imaging, whether that’s CT or MRI scan, to evaluate both liver parenchyma, as well as the liver vessels, and this is really important for the TIPS operator, the interventional radiologist, so they can have a roadmap, if you will, of the vessels so they can prioritize or plan their TIPS placement.

Dr. Buch:

That’s great. And let’s talk a little bit further about that. Is an echocardiogram still necessary even if a patient has no clinical symptomatology and there’s no murmur present?

Dr. Boike:

Absolutely. So yeah, this is where a preoperative or a pre-TIPS echo is still recommended sometimes because there could be subclinical evidence of pulmonary hypertension or subclinical valvular disease, which can really be exacerbated in the setting of TIPS placement when there’s an increase in venous return specifically to the right side of the heart, so all authorities, including our recommendations, do strongly encourage a pre-TIPS echocardiogram.

We have to acknowledge that there are some instances when patients potentially are undergoing an emergent TIPS placement, particularly in the setting of variceal bleeding. We acknowledge that it might be difficult to obtain this imaging, particularly when someone is having a life-threatening bleeding. In some situations, a limited cardiac echo or a limited 2D echo would be ideal, but again, we have to acknowledge sometimes the constraints of the severity of illness of our patients, too.

Dr. Buch:

And that leads to a further question. So in the midst of an emergency need for a TIPS procedure and we find an echocardiogram that is suboptimal, then there could be problems in our discussion with that patient and the family?

Dr. Boike:

Absolutely. And at that point it does require some degree of risk-benefit discussion, but for example, when we look at it with regards to patients who are undergoing a nonemergent TIPS placement—say for example, for ascites—then it's absolutely paramount. But you're absolutely right. When there is a potentially high-risk variceal bleeding event that has failed endoscopic management and is requiring a salvage TIPS, then yeah, sometimes we have to forego some of the more rigorous preoperative testing.

Dr. Buch:

Thank you for that useful information. And what are the contraindications to TIPS placement?

Dr. Boike:

So we kind of a little bit alluded to this already, but severe left-sided heart dysfunction defined by advanced congestive heart failure, as well as moderate to severe pulmonary hypertension, would be considered contraindications to TIPS placement. Similarly, severe valvular disease, particularly severe aortic stenosis, which has been shown to result in poor outcomes after TIPS, would also be a contraindication. There are other situations too when there might be contraindications to TIPS placement, particularly if there is malignancy inside the liver. That would preclude the operator from placing a TIPS through the liver parenchyma. That's a little bit of a more specific contraindication. But again, that's where cross-sectional imaging does come into play for evaluation of the liver.

Dr. Buch:

That's a wonderful segue into my next question, which is, is a high MELD score an absolute contraindication to TIPS placement?

Dr. Boike:

This is something that was a debatable issue over the last decade or so, and I think as we're all aware, the MELD score was actually originally designed and validated to predict mortality three months after TIPS placement. It's of course, been adopted for liver transplant listing and stratification on the wait list, but the MELD score is something that still has some validity in predicting mortality after TIPS.

More recently, we've published and other groups have demonstrated that a MELD score probably over 20 is somebody who potentially is higher risk for complications related to liver disease and potentially may need a liver transplant further down the road and/or have an increased mortality associated with TIPS placement, but there is an emerging amount of data that a MELD score, particularly below 20 and specifically below 15, has much similar survival after TIPS compared to a patient with a very low MELD score, for example, at six. So I think it's important to think about the context of who your patient is and if they're presenting with ascites versus variceal bleeding, but an absolute MELD score by itself shouldn't necessarily preclude someone from undergoing a TIPS.

Dr. Buch:

Thank you for that. So with that in mind, should coagulopathy be corrected prior to TIPS placement?

Dr. Boike:

That's an interesting question but one that we don't have a lot of randomized controlled data on supporting. However, most authorities

and most interventional radiologists are relatively comfortable placing a TIPS regardless of the degree of coagulopathy, particularly as it pertains to the INR. And this again, is partly related to the fact that in the setting of liver disease and liver dysfunction, the INR might not be representative of true coagulopathy. Many authorities will look at platelet count more closely and rigorously but as far as routine correction of coagulopathy, it is not strongly recommended prior to TIPS placement per se.

Dr. Buch:

For those just tuning in, you're listening to *GI Insights* on ReachMD. I'm Dr. Peter Buch, and I'm speaking with Dr. Justin Boike about treating patients with portal hypertension with transjugular intrahepatic portosystemic shunts, otherwise known as TIPS.

Now, Dr. Boike, would the creation of TIPS interfere with an eventual liver transplant?

Dr. Boike:

So in most cases, placement of a TIPS does not necessarily interfere with liver transplant in the future. Most operators and interventional radiologists who are placing TIPS will ensure that the TIPS does not extend significantly into the portal vein or close to the splenic vein confluence, along with the portal vein, in order to ensure that a patient can remain potentially a transplant candidate in the future. Now there are certain situations, particularly with portal vein thrombosis, where sometimes stenting is required further down into the portal vein, but by and large for routine TIPS placement, particularly for ascites or variceal bleeding, placement of a TIPS necessarily does not preclude a patient from undergoing liver transplantation in the future, particularly in this day and age with more effective stents, as well.

Dr. Buch:

And is there a different technical approach for TIPS when treating ascites as opposed to variceal bleeding?

Dr. Boike:

Absolutely. This is a great question and a significant shift in the paradigm on the use of TIPS. There are different approaches, or at least our group and in our article we recommend different approaches for ascites compared to variceal bleeding, and this has to do with managing the risk of recurrent portal hypertensive complications with the risk of an over dilated or an overextended stent whereby a patient may be at higher risk for hepatic encephalopathy from portosystemic shunting. So for treating ascites, we recommend that a patient have the smallest caliber controlled expansion TIPS placed initially, and then monitor the patient over the course of two to three months after TIPS placement to see if they have an ongoing need for paracentesis and to assess if their ascites is otherwise well-controlled. So for example, if a small-caliber eight millimeter TIPS is placed, that is sufficient enough to control the ascites and reduce the need for future paracentesis in your patient, regardless of what the gradient is across the liver after placement of the TIPS. You could argue that TIPS is now effective at managing the ascites because again, we know that if we further dilate a TIPS stent potentially up to 10 millimeters, that patient might be at higher risk for developing hepatic encephalopathy down the road.

The benefit of controlled expansion stents that are now available is that the operator can dilate the TIPS stent at a later date without the stent actually passively dilating beforehand, so there is a controlled expansion sleeve that exists over the stent, which again like I said, allows the operator to dilate that stent to a larger size—for example, if the patient's ascites is not under control and they're continuing to require large-volume paracentesis.

A little bit of a different approach for variceal bleeding is that once we get a TIPS in, we want to ensure that there's reduced risk for variceal bleeding in the future, and particularly, there has been data that's demonstrating reducing the gradient by below 12 millimeters of mercury across the liver, or reducing the gradient by over 50 percent from the starting gradient is sufficient in order to reduce the risk for future variceal bleeding. Furthermore, we recommend that interventional radiologists embolize potential gastric or esophageal varices at the time of TIPS placement to reduce future risk of bleeding, as well. And so those are the two very kind of different approaches for both TIPS placement for ascites compared to variceal bleeding.

Dr. Buch:

Thanks for making that clear. And before we conclude, Dr. Boike, are there any other thoughts you would like to share with our audience?

Dr. Boike:

So I think the important thing to remember when you're evaluating a patient who might potentially benefit from a TIPS—particularly in the patient with ascites who starts to develop recurrent large-volume ascites who needs more than three paracenteses—that's a patient that's demonstrating to you that they have significant portal hypertension. And there is good data supporting now that use of TIPS after the onset of ascites before the patient becomes more decompensated from a hepatic synthetic function potential to improve overall survival, as well as significantly reduce the risk of ongoing large-volume paracentesis and the sequelae associated with that. So I encourage the audience to consider potential referral for TIPS or at least referral to a gastroenterologist or hepatologist when patients start to experience ongoing recurrent ascites because early action has been shown to be much more beneficial for the patients in the long run.

Dr. Buch:

What a wonderful discussion on the use of TIPS in treating patients with portal hypertension. I want to thank my guest, Dr. Justin Boike, for sharing his insights.

Dr. Boike, thanks so much for joining us today.

Dr. Boike:

Thank you for having me. I really appreciate the invitation.

Dr. Buch:

For ReachMD, I'm Dr. Peter Buch. To access this and other episodes in this series, visit ReachMD.com/GIInsights where you can Be Part of the Knowledge. Thanks for listening and see you next time.