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Best Practices for Diagnosing & Treating Portal Vein Thrombosis

Dr. Buch:
Welcome to *GI Insights* on ReachMD. I'm your host, Dr. Peter Buch, and today we are joined by returning guest, Dr. Maurizio Bonacini, who will be discussing portal vein thrombosis, or PVT for short. Dr. Bonacini is the CEO of Mission Gastroenterology and Hepatology, and he's also an associate clinical professor of medicine at the University of California, San Francisco.

Dr. Bonacini, welcome back to the program.

Dr. Bonacini:
Good morning, Peter. Thank you very much for having me.

Dr. Buch:
It is a true delight. Let's dive right in. Which patients are most susceptible to PVT?

Dr. Bonacini:
Well, so there are two types of presentation for PVT. When you look at the prevalence, about half of these patients will have something related to gastroenterology, which is my specialty, and about probably 30 percent of those will have cirrhosis. The other half would be more patients that have an underlying coagulation disorder often triggered by neoplasia. It can be solid neoplasia. It could also be bone marrow dysplastic type of conditions, which are typically evaluated and treated by hematologists. So my sort of expertise, if I can call it that, would be more in the patients that had either cirrhosis, and a minority of them have a intraabdominal inflammation/infection, so they are patients with IBD, patients that have acute diverticular disease that lead to an inflammation/infection in the abdominal cavity, and that leads to a hypercoagulable state and portal vein thrombosis.

Dr. Buch:
And following up on that, how common is PVT overall?

Dr. Bonacini:
Well, that's a great question. I basically would separate the prevalence in patients with cirrhosis and patients in the community. There was an interesting Japan autopsy study mentioning that at autopsy they found a clot in the portal vein area. The anatomy is fairly complex. The clot can be in the portal vein, can be in the branches of the portal vein, can be extending into the splenic vein, can be extending in the mesenteric vein; but overall, a clot in that venous system was found in one in 2,000. The issue though that there could be some issues postmortem that lead to clotting, so it's not really clear how common that is, but I would say probably in the community no higher than one in 10,000 cases. The situation in cirrhosis is completely different. About five to 15 percent of patients with cirrhosis have portal vein thrombosis or will develop portal vein thrombosis, and it seems more common in patients that have had decompensated cirrhosis versus patients that are compensated, so the rule of thumb would be in compensated cirrhosis five percent may have portal vein thrombosis versus 15 percent in patients with decompensated cirrhosis.

Dr. Buch:
And the further follow-up on that is how could we possibly tell whether the patient is having an acute PVT or has had it for a long period of time?

Dr. Bonacini:
So the presentation, which is acute, the typical triad is pain, fever, and ascites, but ascites is only present in 40 percent, so this is an uncommon situation, and so the symptoms are not always there, but I would expect an acute presentation more in patients like I was mentioning before with an acute intra-abdominal event. Diverticulitis or surgery, bariatric surgery, for instance has been associated with portal vein thrombosis, and so the classical triad will be pain, fever, ascites, but it's not always there. And the diagnosis of course, is usually with imaging study, which gets done in most patients that present with an acute abdominal pain.

Dr. Buch:
And are there any ideas that you want to share with us with regard to pitfalls in making the diagnosis?

Dr. Bonacini:
Yes. I was reviewing the literature to see what is the sensitivity and specificity of tests? And predictably? Ultrasound is a good tool but not a perfect tool. The sensitivity/specificity is about 90 percent. The CT angiogram is better, around 95 percent. The MRI is the standard, has a better sensitivity overall, near 99 percent, and the specificity also in the neighborhood of 99 percent. The problem with ultrasound with Doppler is that particularly in cirrhosis, the clot can be mistaken by slow flow or rather the other way around, slow flow into the liver, which is typical of patients with cirrhosis, can be mistaken for a clot. That's why I think a CT and MRI are better tools.

Dr. Buch:
Thank you. For those just tuning in, you're listening to *GI Insights* on ReachMD. I'm Dr. Peter Buch, and I'm speaking with Dr. Maurizio Bonacini about portal vein thrombosis.

Now, Dr. Bonacini, can patients with cirrhosis be anticoagulated?

Dr. Bonacini:
So yes. It turns out that patients with cirrhosis can be anticoagulated. And when we think about cirrhosis, we often think about patients that coagulate poorly, but in reality there's some mechanism that overcome, for instance the low platelet levels and increasing the activity of the von Willebrand factor that lead actually to some patients paradoxically to have hypercoagulation. Basically, the flavor that you get from the literature is that even patients with varices, even patients that have bled from varices, can typically be anticoagulated and not lead to a much increased chance of bleeding. So the short answer is, yes, patients with cirrhosis even with portal hypertension can be safely anticoagulated.

Dr. Buch:
So what are some anticoagulant therapies you use for patients to manage PVT?

Dr. Bonacini:
If I have a patient in the hospital, I think we would start with low molecular weight heparin, which is typically given for about five days, twice a day. After that, once you start oral anticoagulants, and there I can say that the literature support the use of the direct oral anticoagulants, so for instance, apixaban, which has been known to be superior to Coumadin in terms of safety and also let less GI bleeds in the long-term. And it's also very easy to give a low dose, then five milligrams a day that can be decreased in patients who may not feel very comfortable, perhaps patients with very large varices. The advantage of apixaban over other DOAC's is that it can be given in patients with a low creatinine clearance down to 15 milliliters per minute—others you cannot give it below 30 or 50, while Coumadin should be the only anticoagulant that is indicated in patients that have a very low creatinine clearance.

Dr. Buch:
And indeed, if we think about apixaban for our patients who perhaps have already varices, what's the chance of a patient bleeding from varices?

Dr. Bonacini:
Well, so the literature suggests that they don't have much more bleeding, not statistically significant over patients that are not anticoagulated, so as long as you pick your patients properly—and I think here I want to mention the AASLD decision tree—if patients have less than 50 percent of clot, so a small clot burden, the recommendation is to observe the patients with say, an ultrasound with Doppler every two or three months. Likewise, patients that have a complete thrombus with actually transformation called cavernous transformation where you basically don't see a real portal vein, there are some channels that go around into the liver and lead to collaterals, those patients are too advanced, and anticoagulation probably would be a moot point. So at least the people in between that have more than 50 percent of clot but they are not becoming cavernous, or cavernoma, that you should treat only if the treatment will lead to a difference in the management; that is liver transplant. So basically, if patients have some clot burden more than 50 percent and they are candidates for liver transplantation, then you could consider anticoagulation. So the guidelines do not say recommend anticoagulation, but they say consider on a case-to-case basis.

And I like to say that this is not a decision that the single hepatologist or gastroenterologist will do on his or her own. Then this would be a multidisciplinary decision with a team, with the surgeons, perhaps a radiologist because a TIPS has been shown also to improve the flow of blood through the portal vein and improve the clot, so I think this has to be decided as a group.

Dr. Buch:
So just taking it a little bit further, Dr. Bonacini, if we have a patient who has a 50 percent clot burden or perhaps a little bit more and we follow them over time, have any studies been done comparing that to using apixaban so we have a clear direction about where to approach this?

Dr. Bonacini:
Well, that's a good question. In the literature there is some data suggesting that a clot in the portal vein will lead to worse prognosis, but that's not been uniformal, sic. Some studies show that the portal vein clot does not really significantly decrease prognosis. I think in the cases of cirrhosis, which is a large minority of cases—maybe up to 50 percent of the cases—I think you have to decide, does the patient have a chance to get a liver transplant? Maybe the surgeons are not comfortable with the clot burden, and I think they should be anticoagulated.

Now there's another thing that we didn't discuss, is that a number of these patients with cirrhosis and a portal vein clot will have a tumor-related portal vein clot, which is basically a completely different ball game in the sense that those patients usually are precluded from having a liver transplant, so anticoagulation would not be indicated. And the typical finding in these patients with a malignant clot is that they have recanalization or revascularization within the clot, which is typical of a malignant clot.

Dr. Buch:
Thank you for that. And what does the success rate look like when we're managing PVT?

Dr. Bonacini:
So that's also an excellent question, and that underscores the difficulty in evaluating the literature. Many of these studies have just been large case series, probably cherry-picked in one way or another, but the flavor you get is what you expect is basically recanalization rate in about 75 percent of cases. And in my review of the literature, that's been the same using either a TIPS or using the typical oral anticoagulation that we just discussed, so the patency will be in the realm of 75 percent or so.

Dr. Buch:

This has been an excellent review of PVT. I want to thank my guest, Dr. Maurizio Bonacini, for sharing his insights. Dr. Bonacini, it was a pleasure speaking with you today.

Dr. Bonacini:
Thank you very much for having me.

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.