#08 How to prevent, identify & manage thrombotic complications

Transcript:

00:00:00 **Servane Pelle-Lombardy**

Hello, everyone, and welcome or welcome back to the BD IV News podcast series and more specifically to our special series, the Vascular Access Insights.

This is where we explore the science strategy and real-life stories behind effective vascular access management.

Whether you're a nurse, a clinician, or a healthcare leader, this series is your go-to resource for best practices and practical solutions that improve outcomes and reduce complications.

So we are here to support and empower your practice, one episode at a time.

And in today's episode, we are going to tackle a crucial topic in patient care, how to prevent, identify, and manage thrombotic complications related to catheters.

I'm your host, Servane Pelle-Lombardy, Associate Director of Medical Affairs for BDs Medication Delivery Solution in EMEA.

And today's conversation is thanks with the insights of my 2 exceptional guests, Dr. Martin Jonczyk.

Hello, Martin.

00:01:08 **Dr. Martin Jonczyk**

Hello Servane, thank you for invitation.

00:01:10 **Servane Pelle-Lombardy**

My pleasure.

So, Martin, you're a board-certified radiologist at La Charite Universiteit Medicine in Berlin, and you're specialized in diagnostic and interventional radiology with a focus on vascular and percutaneous procedures.

And I want to warmly welcome also Doctor Fulvio Pinelli.

Hello, Fulvio.

00:01:32 **Dr. Fulvio Pinelli**

Hi, Servane.

Thank you for having me.

00:01:34 **Servane Pelle-Lombardy**

Welcome.

Happy.

You're the consultant in anesthesia and intensive care medicine and the director of the Vascular Access Center at Careggi University Hospital in Firenze in Italy.

So on the topic of today, if symptomatic thromboembolic complications of CBCs occur in around 5 % of general oncology patients, it seems like asymptomatic CBC-related thrombi are even more common.

And in that regard, I would like to get started and learn on how we can better prevent and manage those catheter-related thrombosis.

So I hand over to you both.

00:02:20 **Dr. Martin Jonczyk**

Thank you, Servane.

So, speaking about catheter-related thrombosis, we have to make sure that we are speaking the same language.

#08 How to prevent, identify & manage thrombotic complications

There are lots of variations on thrombosis, and so I would like to ask you, Fulvio, what's your definition and your main causes from your point of view.

00:02:42 **Dr. Fulvio Pinelli**

Well, I agree.

I think there's a much, much confusion around the definition of catheter-related thrombosis and in very high impacted journal as well.

So we have to make clear that catheter-related thrombosis, fibroblastic sleeves, and occlusion are totally different phenomena.

In particular, the fibroblastic sleeve is a connective tissue done by fibroblasts, most muscle cells, collagen, slowly wrapping the catheter.

On the other hand, a catheter-erated thrombosis is a rapidly growing repair tissue, a thrombus triggered by an endothelial damage.

And they basically, they do not have nothing else in common.

Also, the the treatment is completely different.

The prevention is possible in part for thrombosis, but it's not possible for the fibroblastic sleeve, which is basically a foreign body reaction of the body, and it's basically inevitable.

And we don't know really why in some vascular access device, devices or in some patients is more relevant, but is a basically inevitable actually.

00:04:09 **Dr. Martin Jonczyk**

And if we have a fibroblastic sleeve, we try to control this in terms of we want to maintain the catheter and sometimes we take a loop and just take the fibroblast sleeve from the tip of the catheter, which then usually goes to the lung and will resolve there.

If we have PICC lines, for instance, we try to exchange them over wire and place the catheter tip a little bit deeper so that we avoid the tip of the catheter, which would come back to the same position and then is occluded by the fibroblastic sleeve.

But are there any other tips you can give us for the thrombosis?

00:04:55 **Dr. Fulvio Pinelli**

First of all, I would add to what you said, which is very, very correct, that actually the only clinical impact of a fibroblastic sleeve, as you were saying, is the occlusion of the catheter.

So no other risks, no risk of thromboembolism.

So the only thing is the occlusion risk.

And the other thing, the other impact which we have from this condition is that it is invariably misdiagnosed as a catheter related thrombosis and treated as a catheter related thrombosis with anticoagulants, which have no effects at all on a fibroblastic sleeve because it's, as we said, just fibroblasts and collagen, exposing the patient to an unacceptable risk of hemorrhage.

Yeah.

00:05:56 **Dr. Martin Jonczyk**

That's a good point.

And if you're dealing with a catheter where you can, where you are able to flush the catheter, but you can't pull blood back from the catheter, then a fibrostic sleeve is very likely to cure.

But if you have a complete occlusion of the catheter or thrombosis, that's something different.

Do you want to share with us your expert tips to prevent any thrombosis of the vein?

00:06:29 **Dr. Fulvio Pinelli**

Well, there are some, there are very few strategies that we can we can follow.

#08 How to prevent, identify & manage thrombotic complications

First of all, we the very, very important thing probably is the most important thing is to match the to check the catalyst to vein ratio that must have that must be one to three.

So the vein must be three times bigger than the catheter.

The other thing is to choose an appropriate exit site. So we should avoid the very, the flexible areas.

So in that area, the catheter makes like a, the so-called pistoning movement, so in and out movement.

And then another very, very important issue is the use of ultrasound guidance.

This is a very, very important point.

And last but not least, the proper tip location.

And so basically we use intracavitary EKG all the time and ultrasound as well in some cases.

I don't know which are your, these are mine, which are your tips and tricks for preventing thrombosis?

00:07:53 **Dr. Martin Jonczyk**

For me, it's also important to have the ultrasound guidance for the vein puncture so that you make sure that you puncture the vein just one time so that you don't have any hematoma of the vessel wall, for instance.

And what you said already has to be highlighted, the catheter to vein ratio 1 to 3 is very important.

00:08:16 **Dr. Fulvio Pinelli**

I agree.

00:08:17 **Dr. Martin Jonczyk**

I agree.

00:08:19 **Servane Pelle-Lombardy**

Thank you so much.

Thank you both for sharing your strong expertise in that matter and your very important experience.

So indeed, there is a wealth of information here from these invaluable insights for those working to prevent catheter-related thrombosis.

And so some key takeaways from your discussion here.

Indeed, it's crucial to accurately diagnose what constitutes a thrombosis and what doesn't.

So we very well understood from you that especially fibroblastic sleeves, occlusion and thrombosis are not to be mixed up.

They are completely different complications and it's pivotal to make the right diagnosis in the 1st place so as to make sure that the appropriate management comes next.

But more than managing, obviously we want to prevent so as to prevent those complications to cure.

One of the key elements is to choose the appropriate vascular access device, but also follow an insertion bundle, making sure that the exit site is appropriate, the right vein is selected, the proper tip location is ensured.

You've been highlighting very much the appropriate catheter to vein ratio, the one on three, one third, which is also very important in that prevention bundle.

One of the golden standards from your perspective is clearly the placement thanks to ultrasound-guided technologies.

And moving forward, following the best practice for catheter maintenance once inserted, including also proper flushing, dressing and securing is pivotal to prevent these complications.

So, maybe one thing additional, last but not least, when it's occurring, removing the VAD isn't always the best option.

#08 How to prevent, identify & manage thrombotic complications

So alternative management strategies could be considered, but for that, it's very important to identify, again, that it's that thrombotic complication and then have a multidisciplinary approach.

So by focusing on these areas, it's probably possible to move from managing the risk to actively prevent those catheter-related thrombotic complications.

I want to thank all of you for tuning in today.

And please don't miss our next and final episode of this series, where we will deep dive into how to prevent, identify, and manage infectious catheter-related complications.

But until then, you take care and remember, you're the VAMbassadors and good access saves lives.

Stay connected.