#04 How to prevent, identify and manage device-related mechanical complications dislodgement, occlusion

Transcript:

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

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

Remember, 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 an healthcare leader, this series is your go-to resource for best practices and practical solutions that improve outcomes and reduce complications.

We're here to support and empower your practice one episode at a time.

In today's episode, we take indeed a closer look at two of the most common and preventable mechanical complications, catheter dislodgement on one side and catheter occlusion on the other end.

These complications are not only disruptive, but they are also often avoidable with the right protocols, vigilance, and clinical judgment.

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

And today's conversation is enriched by the insights of two exceptional professionals.

So it's my great pleasure to welcome Dr. Martin Johnzik.

Hello, Martin.

00:01:13 **Dr. Martin Jonczyk**

Hello, Servane.

Thank you for invitation.

00:01:16 **Servane Pelle-Lombardy**

Thanks for joining.

You're a board-certified radiologist at Charite Universitat Medicine, Berlin, and specialize in diagnostic and interventional radiology with a specific focus on vascular and percutaneous procedures.

And it's also my great pleasure to welcome Dr. Fulvio Pinelli.

Hi, Fulvio.

00:01:39 **Dr. Fulvio Pinelli**

Hello, Servane.

Thank you for having me.

00:01:42 **Servane Pelle-Lombardy**

Thank you for joining.

Welcome, your consultant in anesthesia and intensive care medicine and the director of the Vascular Access Center at Carigi University Hospital in beautiful Firenze in Italy.

So to start with, we have some numbers and apparently catheter dislodgement and occlusion remain amongst the most frequent mechanical complications of vascular access.

Overall, and in that regards, Martin, Fulvio, could you share with us how we can transition from simply managing risks to actively preventing these mechanical complications?

And what are your tips, basically, that you can share with our listeners?

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00:02:30 **Dr. Fulvio Pinelli**

Yeah, thank you, Servane.

I want to say that I completely agree with you.

Those are two very important complications and sometimes they are quite overlooked.

But, and the other thing is that they are totally preventable.

Also, you said that they are disruptive and it's true because they actually determine delays in treatments that determine unnecessary valve replacement, which means delays, well, a lot of increased workload for the professionals, increased risk and so on.

So I think these are really two complications that we have to pay attention to and try to identify all those strategies to reduce them.

In terms of strategies, what do you think, Martin, we can do to reduce the impact of these complications, which are very, very, again, very, very disruptive for our clinical practice.

00:03:42 **Dr. Martin Jonczyk**

Thanks, Fulvio.

First, I would like to clarify a little bit more on the definitions.

If we speak about dislodgement, we mean that the catheter physically moved away from the place it was originally placed.

On the other hand, we have the occlusions, of course, the catheters, and we mean by that the catheter is not injectable and cannot be aspirated.

So that can have many courses, and we can divide these courses into occlusions within the catheter and into the extraluminar and intravascular regions.

So what do you think about it Fulvio?

00:04:19 **Dr. Fulvio Pinelli**

Yeah, absolutely.

Regarding the extraluminal causes of the occlusion, that it may be a catheter kinking or it might be a pinch-off syndrome, which is quite rare now since we use the ultrasound to positioning axillary veins catheters, or it can be due to a malpositioning of the tip of the catheter, or even, and this is quite more frequent, a fibroblastic sleeve on the tip of the catheter.

And regarding the endoluminal causes, they, to clotting, to drugs, and especially to precipitation of non-compatible drugs, but also it can be due to lipids or radiological contrast media.

So it's very important to know the causes so that we can try to prevent these causes.

Regarding the endoluminal causes, we have to remember that there are some strategies which are very useful to prevent them, which are basically the adequate flushing and locking of the catheter.

We don't use heparin. We don't have to use heparin anymore.

We use just saline.

We just have to use power injectable catheters so that we can flush them with a smaller than 10 mL syringe.

And in general, avoiding blood reflux using the inadequate needle-free connector and do not use a cocktail of drugs which can precipitate, so I think these are the main strategies to prevent the occlusion by endoluminal causes.

00:06:26 **Servane Pelle-Lombardy**

Thank you.

Thank you, dear both Martin and Fulvio.

Thank you so much.

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With your extensive clinical and academic experience, you've brought really such valuable insight.

And I believe plenty to take away here for those on the front lines of preventing those mechanical risks, and especially in that case, catheter dislodgement and catheter occlusion, some of which from today's discussions could be.

So indeed, making sure that the characteristics and compatibility of infused drugs are well understood, that has to be very, very clear.

It's critical in order to prevent catheter occlusion.

The strict compliance, I think Fulvio and Martin both, you've been highlighting that, the strict compliance to best practice flushing policies, is also pivotal to prevent catheter occlusion, the volume frequency, the pulsatile technique, and so on.

Those best practices make the difference.

When it comes to dislodgement as well as occlusion, complication prevention strategies, it's required in the 1st place to select the appropriate vascular access device.

And also, you've been highlighting that very clearly to follow insertion bundles, as well as care and maintenance bundles.

It's critical.

And in regard to dislodgement, you've been highlighting the importance for the right catheter tip location and the usage, especially of sutureless devices to secure the vascular access device.

And last but not least, training and education for both, of course, the health care professionals, but also the patients.

So as to help prevent and manage those catheter-related mechanical complications.

So I think it's clear that prevention is not just a checklist, it's a whole mindset from flushing protocols to the patient education.

All those steps matters because when the lines are protected, the patients are protected.

Thanks again to all for tuning in and don't miss the next episode where we'll deep dive into how to prevent, identify and manage infiltration and extravasation complications.

Until then, take care and remember you are VAMbassadors and good access saves lives.

Stay connected.