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## Easy IJ & Emerging Solutions for Difficult IV Access Cases

Announcer:

This is ReachMD, and you're listening to Vascular Viewpoints, sponsored by Becton Dickinson, advancing the world of health. Here's your host, Dr. Amy Mackey.

Dr. Mackey:

In emergency care settings, confronting difficult intravenous catheter access is a universally common source of frustration for clinicians who are forced to spend valuable time and resources and a significant risk to patients undergoing multiple invasive procedures with little success. While solutions to these challenging cases have evolved over the years, the options in many emergency departments are still often limited to intraosseous or central venous access procedures, neither of which is ideal for stable patients in need for IVs. Another option known as the Easy IJ procedure has gained traction of late as a potentially safe, effective and rapid solution. But what's the evidence supporting this approach? And what are the limitations? These questions and more will be the focus of today's episode.

This is Vascular Viewpoints on ReachMD. I'm Dr. Amy Mackey, and joining me is Dr. Andrew Little, an emergency medicine specialist at OhioHealth Doctors Hospital in Columbus, Ohio.

Dr. Little, welcome to the program.

Dr. Little:

Thanks so much for having me.

Dr. Mackey:

I'd like to start with some added perspective on difficult IV access in emergency department settings. Just how big of a problem is this in your field, and how does it impact patient care both in and beyond the ED?

Dr. Little:

So I think it's important to remember that every patient we admit to the hospital we want to have definitive IV access on, and in the critically ill patient, we spend a lot of time trying to get peripheral IVs that I think could be used in better places in terms of management resources and patient resources and care. So I think it's important to think about the fact that a lot of these people are cardiovascularly compromised, they are vascularly compromised, and they typically have an underlying disorder that makes it hard to get a peripheral IV, and so I spend a lot of time training my residents and my nurses that there are better options to get IVs in patients than spend a large amount of time trying to get a 22-gauge in the hand or an even smaller one in the AC.

Dr. Mackey:

Can you run us through the options that you and your colleagues consider when managing patients with no suitable peripheral veins for IV access?

Dr. Little:

So, I think it's important when we resuscitate patients to think of all the options available for vascular access. The first one that typically comes to mind is IOs, intraosseous lines. It's something that can be placed easily, and then it's something that you can bridge until a better line. I think then the next step is to think about peripheral IVs. I don't particularly like these because they typically fail in the first 24 hours, and so, in somebody who's going to require resuscitation, I think it's easy to think about better options. Some of the options that are available is traditionally we jump straight to central venous catheters, whether it was in the femoral vein, the subclavian vein or in the internal jugular vein, but there are some other really cool options that have come into play in the last couple years, one being the Easy IJ—that we'll talk a little more about later—and then things like midline catheters and then even quick PICC lines that can be placed in the

emergency department.

Dr. Mackey:

Let's turn to this Easy IJ procedure I mentioned earlier. When did it come on to the scene in the emergency settings? And what problems or unmet needs was it intended to address?

Dr. Little:

So, I think it's something that we've been doing inadvertently in emergency medicine for years. It's been well-documented in the anesthesia and the critical care literature but oddly has been kind of seen with concern for it being a new thing in emergency medicine when in reality it's just a central venous catheter but stopping at cannulation. So, for me, it's a great idea to think that a central venous catheter is a 10- to 12-step process, and the first one is, of course, identifying the vessel, but then it's just cannulating the vein, and rather than doing a full central line where you cannulate the vein and then dilate and put in a guide wire, you're done.

And so, for me, I think an Easy IJ is something that I have inadvertently done for years in terms of I couldn't cannulate with a guide wire or a dilate so I would just leave an Easy IJ in never really knowing exactly what I was doing. And so, I think it's something that in emergency medicine offers us a great access to the patient's veins and to give them medicine and fluids, and it's something that we've been doing and something we've been trained to do. We have just never thought of just stopping at the point of cannulation.

Dr. Mackey:

Have you and your colleagues implemented this procedure in the ED? And if so, what's been your experience so far as to the benefits and limitations you've come across?

Dr. Little:

So, here at our emergency department, we did a QI project where we looked at all the central lines placed in the last year. We looked at ones that were successful, and then we looked at ones that were not successful and the ones that we had complications with. So, the ones that were successful were people with great anatomy, younger patients, probably had been cannulated before. Ones that we weren't successful on were the sicker patients, lower blood pressures, more likely to be septic or to be in cardiogenic shock. And then complications were related to guide wire placement, whether it went down and accidentally went through the posterior aspect of the vein, whether it went up towards their brain, so various number of complications. So, in this process we kind of just decided: Where is the pivot point? And we found that it's typically at cannulation. So, once you cannulate the vein and get flash in your syringe, we decided: Why don't we just leave that cannulation there and then just treat them from there?

And so, for one of those things where we started doing Easy IJs until the concept was actually introduced to myself as its own procedure to where I think now it's something that we do on a regular basis where we just cannulate, stop there, resuscitate the patient, and then the benefit of an Easy IJ is that by the fact that you cannulated them with an 18-gauge needle or an 18-gauge catheter, you can then swap that out to a central line if needed, cases being patients that need blood, pressor, multiple antibiotics that aren't compatible for the same line, or you can just take it out when it's done. And so, to me, I think it's something that we inadvertently started doing not knowing that we were initially doing Easy IJs, and it's something that's definitely dropped our failure rate and also dropped our complication rate.

Dr. Mackey:

For those just tuning in, you're listening to Vascular Viewpoints on ReachMD. I'm Dr. Amy Mackey, and today I'm speaking with Dr. Andrew Little about novel solutions to difficult IV access cases.

So, Dr. Little, staying with this Easy IJ procedure for a moment, can you speak to the literature behind this approach thus far and whether the evidence supports its safety and efficacy?

Dr. Little:

So, I think, like I previously mentioned, Easy IJ's safety and efficiency have been found in the critical care and anesthesia literature for some time. If you look at their studies, again, the safety in it all is because it stops at cannulation. You're not cutting the patient's neck. You're not dilating down to the vessel. You're not putting in a guide wire 15–30 centimeters into somebody's neck that can lead to valve damage and other vascular damage within the actual vein, so that leads to decreased trauma to the vein, decreased complications in terms of clotting of the vessel. So, overall, it's been shown to be significantly more safe for the patient. In terms of efficiency, again, it's the idea that when you place a central line, in the first minute you cannulate, and over the next 4 to 5 minutes you place the rest of the central line, so you're stopping 3 to 5 minutes sooner. So I think the literature shows it's very, very safe and is something we can do in the emergency department setting despite there being any actual studies done in the emergency department.

Dr. Mackey:

So, who can or should be performing this procedure in emergency department settings? And does that introduce any unique problems or solutions from a staffing perspective?

Dr. Little:

So, I think that this procedure can be safely done by emergency physicians and trained advanced practice procedures, whether that be an NP or a physician assistant. I think it could possibly be done by vascular access nursing, but to be honest, the IJ is not something that they have currently been taught how to do, and so I think with proper education and quality review or quality control, it could be done. So I think from a staffing perspective, it's easier just to say, "Hey, somebody who's not the physician do it," but I think as it currently stands, it's either a physician or an advanced practice provider that should be doing this procedure.

Dr. Mackey:

Are there any particular challenges or contraindications that warrant another approach all together? And what other options are still available to you in these cases?

Dr. Little:

So, I think the contraindications for placing in an Easy IJ are the same for placing a central line in that area. Whether it's an expanding hematoma, concern for carotid dissection, if the patient's a trauma patient and wearing a C collar, those are all indications to go to either subclavian or to a femoral central line—which, by the way, you can also place the same single lumen catheter in those places as well.

Dr. Mackey:

Before we close, let's look ahead and consider the next opportunities to advance vascular access care for difficult IV cases. What new or emerging avenues are you excited about to better address these unmet needs?

Dr. Little:

So, I think the Easy IJ is a great option for your future central line needs. I think the next step will be moving from having to use parts of current kits or get large 18-gauge needles and then having a single kit specific for this procedure. I see that as one of the current problems, is you have to go to a couple different areas to get the tools needed for this procedure. And then I think another really good option down the road is placing larger single lumen catheters in different parts of the patient's body other than just the IJ—in their arm and in other parts of their lower extremities.

Dr. Mackey:

Well, on that note, I'd like to thank my guest, Dr. Andrew Little, for joining me to explore current and emerging methods addressing difficult IV access. Dr. Little, it was great having you with us.

Dr. Little:

Thanks again.

Announcer:

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