

Transcript Details

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Vascular Access Patient Case: Reinforcing the Right Device at the Right Time

Dr. Cawcutt:

Hello, I'm Kelly Cawcutt. I am an infectious disease and critical care physician at the University of Nebraska Medical Center. I'm also an Associate Director of Infection Prevention and Hospital Epidemiology, and I am here to share a patient story regarding the choice of vascular access for the patient, talk through the decision-making process, the risks and benefits of different types of vascular devices, and ultimately what the final choice our team came to in conjunction with the patient was for the vascular access device.

The patient story I want to share today is an older gentleman who was admitted to the hospital with a prosthetic joint infection. This was a gentleman who had developed pain and swelling in his knee years after having an artificial knee put in place. He was evaluated by the infectious disease team and their orthopedic surgeons and through a series of diagnostic testing was determined to have an infection in the joint. The standard of care for this type of infection is to bring the patient into the hospital, remove the infected joint surgically and replace it with a temporary one while we treat the patient with intravenous antibiotics for several weeks. In this setting the patient was admitted to the hospital essentially the day of surgery, went right into the pre-op area, and then was admitted to the main part of the hospital postoperatively where initially he had a peripheral IV placed. Our team was not involved with the decision early for what type of vascular access he needed, but a peripheral IV in this patient who had really no other medical problems and no renal failure, was an acceptable option early on, but we did know that he was going to require longer-term access for up to approximately 6 weeks, potentially longer depending on what type of infection was identified from the surgery.

As we think about decision-making for vascular access device, it's very important to consider the patient and if they have risk factors for vein depletion, if there are particular reasons that we can't put a vascular access device in certain locations, like having lymph edema or paresis from a stroke or like having a shoulder replacement or other surgical requirement on an upper extremity particularly when we think about longer-term vascular access. A peripheral IV in this case is not going to have the longevity to maintain vascular access through the completion of therapy, and it's not going to allow us to do the blood draws required for monitoring of infection and therapeutic monitoring for many of our antibiotics that we use intravenously. In considering options for this patient, we know that the short-term vascular access devices were not going to be appropriate. The long-term ones, such as a port or tunneled line, may not necessarily always be appropriate either because we were looking at an intermediate duration of time, again of approximately 6 weeks.

In many of these cases, we're talking about a midline or a peripherally inserted central catheter, both of which are placed in the arm generally just above the antecubital fossa. Midlines do not have the recommended longevity to maintain 6 weeks of access; therefore, most commonly we would choose a PICC line or that peripherally inserted central catheter. However, with patients, we consider their long-term overall holistic health. This is a gentleman who plans to be up on crutches. He wanted to be active and able to move, and a PICC line would actually get caught persistently on the crutches. The PICC line catching there leads to more compression of the vein, potentially increasing the risk of development of thrombosis or clots, increasing the risk of mechanical damage to the vessel, and that can also predispose the patient to other adverse events, such as developing an infection at the site of insertion or in the blood related to the catheter. So, in this case for this patient, the ideal vascular access was to actually tunnel a line that we normally consider more of a long-term catheter into the chest to allow for the intravenous administration of antibiotics, to allow for the blood draws that were needed for monitoring, but to also avoid an increased risk of complications.

If the team did not consider the long-term course, the potential risk of a vascular access device or talk to the patient about the patient's goals and plans after he left the hospital, it is very likely that the wrong line would have been chosen, and that is part of why thinking through some of the beginning through the end of the need of vascular access is so important as we try to choose the best lines for our

patients at the right time for the needs they have for minimizing the risks of vascular access.

I'm Kelly Cawcutt. Thank you again for listening to this case review on ReachMD.