Responsible Compassionate Care: Meeting the Needs of Patients with a History of Intravenous Drug Abuse

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Abstract

Vascular access specialists are brought into many difficult situations that stretch their ability to provide appropriate care to patients who have complicated medical and personal histories. In the following case, a hospital was challenged to provide appropriate care while remaining responsible and compassionate throughout the duration of infusate delivery.
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Introduction

A 51-year-old man arrived at the outpatient center of a rural, 143-bed hospital for 42 doses of 2 g/day ceftriaxone to be administered through a peripheral intravenous (PIV) device placed and removed daily secondary to a history of intravenous (IV) drug abuse (IVDA). The patient was transferred to this facility from a larger hospital and is being treated for an abscess in the lumbar area. Spinal surgery had been performed at a large hospital 1 month prior. Upon admission to the outpatient center on Day 1, a vascular access specialist was called after 4 failed attempts for peripheral access. An assessment with ultrasound of the venous pathways from hands to midupper arms revealed minimal viable venous options. Color power Doppler was employed and showed minimal blood flow through the few vessels large enough to cannulate. The basilic and brachial veins 6 cm above the antecubital fossa show adequate size and flow for a 4F peripherally inserted central catheter (PICC). A call was made to the primary physician to change the ceftriaxone dose to intramuscular injection until a plan could be made for further treatment.

It became obvious very quickly that a plan to place and remove a PIV for 42 days in a row was not a viable option and would not be considered for a patient with healthy veins and no history of IVDA. The information about this patient's history of IVDA was delivered by the physician ordering the antibiotic therapy and was confirmed by the patient. The patient reported that he had not used intravenous (IV) drugs for 11 months and his daughter was with him explaining the hard work he had been doing to stay clean. Both the patient and his daughter explained that the physician did not offer an alternative to daily IV placement when it was stated that the 42 PIV plan would not work. This is the policy of most facilities that assume the risk is too great to allow consideration of options reserved for patients with no, or an unknown, history of IVDA.

Options

1. Place a PIV each day and remove for 42 days.
   a. Pros
      i. Patient receives prescribed medication through the preferred route, and
      ii. No IV device in place, which eliminates risk of inappropriate use outside of the hospital.
   b. Cons
      i. Limited venous availability at Day 1,
      ii. Repeated damage to available veins is a higher risk than potential benefit, and
      iii. Repeated opportunities for bacterial invasion secondary to >42 holes in the patient's skin.

2. Default to daily intramuscular injections for 42 doses.
   a. Pros
      i. Eliminates need to find 42 viable vein sites, and
      ii. Eliminates potential misuse of IV device left in place.
   b. Cons
      i. Additional pain from multiple injections, and
      ii. Forty-two potential sites for infection.

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3. Switch to oral medication
    a. Pros
        i. Eliminates need to utilize outpatient services,
        ii. Least invasive option, and
        iii. Eliminates potential misuse of IV device left in place.
    b. Cons
        i. Physician reports there is no oral equivalent for the isolated bacteria, and
        ii. Continued growth of the abscess would impair mobility and risk infection of the heart valves.

4. Place PICC and admit to Skilled Care Unit with continuous observation
    a. Pros
        i. Allows consistent site for 42 infusions and lab draws,
        ii. Eliminates repeated IV or intramuscular trauma, and
        iii. Decreases likelihood of misuse.
    b. Cons
        i. Cost-prohibitive,
        ii. May not stop tampering, and
        iii. Places all responsibility on staff members and none on the patient.

5. Place PICC with tamper-evident technology (TET)
    a. Pros
        i. Allows consistent site for 42 infusions and lab draws,
        ii. Eliminates repeated IV or intramuscular trauma,
        iii. Decreased cost with each infusion compared with 42 daily PIVs or inpatient status with observation, and
        iv. Allows patient to assist in his own health care.
    b. Cons
        i. History of IVDA,
        ii. Easy access to venous system,
        iii. Infection and overdose risk, and
        iv. Program has not been developed at this facility.

After discussing with the primary physician, option 5 was chosen and a new program was developed and implemented in 4 days to meet this patient's unique needs.

TET

At the 2015 Association for Vascular Access Scientific Meeting held in Dallas, TX, 2 speakers presented a breakout session discussing IVDA and efforts to keep the lines tamper-resistant in the context of an outpatient infusion program.[1] After contacting one of the speakers a similar system was set up at our facility to accommodate our current patient situation and develop a plan to care for future patients with similarly complicated histories.

Process

According to the Infusion Therapy Standards of Practice, "Infusion therapy is provided with attention to patient safety and quality. Care is individualized, collaborative, culturally sensitive and age appropriate."[2] In collaboration with risk management experts, the patient safety officer, the outpatient director, the outpatient nursing staff, the postsurgical director, the postsurgical nursing staff, the Vascular Access Department staff and director, the primary physician, the Behavioral Health Department staff, security, the Emergency Department, house supervisors, and the patient a process was initiated to care for this patient while being realistic, responsible, and compassionate in our approach.

Phase 1: Risk Assessment

At the beginning of this plan we needed to ensure that the patient was getting his required medication on schedule. In this case, switching to intramuscular ceftriaxone for a few days was the option that was chosen by the patient and physician. The primary physician was given the option of allowing a PICC to be placed if TET could be connected to the device to monitor inappropriate use of the line between doses. Without a guarantee that the program could be implemented, the patient was asked if he would agree to a PICC placement with TET applied to the device. Both the physician and the patient agreed to move forward with the plan.

During the next 4 days the risk management and Legal Department personnel reviewed the risks to the hospital and to the patient vs the benefit completing the prescribed therapy. The patient safety officer and directors of the involved units were included in this early planning. A contract for the patient to sign that would include his responsibilities while the PICC was in place and the consequences of failure to comply was quickly developed. (See Appendix 1.)

A blank space was left at the bottom of the contract for the patient to write in his statement of when he last used IV drugs. This was not intended to be a declaration that the patient would not use any drugs not prescribed to him, but simply that he would not use, and had not used, IV drugs for the duration of his prescribed IV therapy. We do not require other ambulatory patients to declare they will remain drug-and-alcohol free during treatment. The goal in the short term is to successfully manage the IV therapy and that the PICC remaining in place and unsupervised would cause no harm. The hope in the long term would be to help the patient eliminate drug abuse of any kind, but that is true for all patients.

Signature lines were available for the patient and the witness. This agreement was in addition to the standard PICC informed consent document. An advantage of a small, independent hospital is the ability to swiftly adapt to patient needs. Quickly developing something like this within a large facility would be extremely difficult.

Phase 2: TET Development

In this phase the TET was developed and tested. A large sticker was adapted to fit over the needleless connector and a

portion of the external segment. This is by no means a way to stop a person from utilizing the PICC inappropriately, but simply makes it obvious if the venous access device has been tampered with between infusions. This was a "1 strike and your PICC is out" policy. Several options were tested. Important characteristics included ease of placement by staff, ease of removal, limited adhesive residue, obvious indications of tampering (unavoidable tearing), durability through activities of daily living (avoiding accidental tearing and false accusations), low cost, and discrete enough to not draw unnecessary attention to the patient's situation.

Phase 3: Implementation

Before placing the PICC the patient read the contract for the TET program and the standard PICC informed consent. After agreeing to the program and signing both the contract and the consent, the PICC was placed and the ceftriaxone dose was given—by now 38 more days to go. After the dose and appropriate flush the TET was placed over the needleless connector and part of the external segment, secured, signed, and dated. The TET was then flipped up, secured under elastic net, and covered by the patient's sleeve. This was no more obvious than in any other patient with a PICC. Outpatient nursing staff members were educated on placement and removal of the TET and what to do if they suspected tampering. This was also conveyed to the postsurgical nursing staff members who are responsible for care of ambulatory patients on Sundays when outpatient services are closed.

Security personnel were informed that if suspected tampering was discovered they might be called. The PICC would be removed if suspicions were verified by the house supervisor or a vascular access specialist. We did not want the patient to leave with the PICC in place while we were calling a second person to verify a suspicion of tampering. The security officer's job would be to keep the patient in his room if necessary. The patient and staff were aware that if he failed to show up for an appointment, and did not call, that police would be sent to his home for a well check to make sure he was complying with the contract and not in need of additional medical attention.

Phase 4: Completion

An additional week of ceftriaxone was added to the end of this patient's therapy and he completed all doses without incident. The PICC was removed after the final dose.

Discussion

Illegal use of drugs continues to be a major public health issue.[3] Internationally, nearly 16 million people inject illegal drugs, according to the World Health Organization.[4] Prevalence assessments of injection drug use in the United States are challenging to determine because most federally conducted national health surveys do not consistently measure it. In 2009, the Substance Abuse and Mental Health Services Administration offered national assessments of injection drug use by blending data from the 2006, 2007, and 2008 National Survey on Drug Use and Health (NSDUH). The findings from these data indicated that, nationally, there were almost 425,000 persons aged 12 years or older who had injected drugs at least 1 time within the preceding year. However, to corroborate a more current estimate of injection drug use, Kooreman and Greene[3] repeated the Substance Abuse and Mental Health Services Administration estimation approach utilizing data from the years 2011, 2012, and 2013. From these data, it was established that 1.6% of our nation's population aged 12 years or older had participated in injection drug use at least once during their life. Of note, analyses of additional sources of data show a continual rise in injection drug use by young persons between ages 15 and 29 years.[5] Additionally, it was determined that an average of 580,000 individuals aged 12 years or older injected at least 1 of the following illegal drugs: methamphetamine, heroin, cocaine, or a different stimulant drug during the past year.[3]

In the state of Indiana, the 2013 NSDUH assessed that almost 9% of the population aged 12 years and older (477,000 Indiana residents) abused and/or were drug or alcohol dependent. There were almost 25,000 substance abuse treatment occurrences documented in 2012. In 2,247 of these occurrences, intramuscular or IV injection was described as the usual route of administration for the main substance abused. Furthermore, the percentage of treatment occurrences that specified injection of the main substance of abuse has more than tripled since 2002.[3]

Injection drug use is a well-acknowledged cause of a number of significant health disorders, including cellulitis, abscesses, and other integumentary infections. These infections, if left untreated, can bring about abscesses affecting internal organs, septicemia, and bacterial endocarditis. Nonetheless, the most substantial and most predominant consequences of injection drug use are drug overdose and blood-borne infections such as HIV. In the United States, there are approximately 915,000 people who are living with HIV, of whom 20.2% were infected with the disease through injection drug use. In 2013, there were a total of 506 Indiana residents who were newly diagnosed with HIV, 4.5% of these cases were exclusively a consequence of injection drug use.[3]

With patient populations and trends of injection drug use, it is likely that this will not be the last opportunity to utilize the TET program. Patients with a history of IVDA should not be eliminated from PICC or midline placement without investigation into their unique situation. It is true that the temptation to use the PICC inappropriately may be strong for a person with injection drug use or IVDA history, but history alone should not eliminate these people from options available to other patients as long as some safeguards can be put in place to protect them and the clinicians in charge of their care. There is an unfortunate dismissal of IVDA individuals as being at fault for their own health issues. However, cannot the same be said for every noncompliant diabetic or a lung cancer patient who has a 50-year history of smoking? Yet, at the time of their health crisis we focus on the presenting problem and then attempt to help the patient modify his or her lifestyle to avoid future issues. The same should be true for patients with a history of IVDA.

During the implementation and completion of this first TET program some gaps in our current system were discovered. First, at that time we had no screening tool for outpatient PICC or midline placement. The vascular access specialist would check the standard information before line placement, but unless informed by an outside source or directly from the patient, no question of IVDA or other addiction issues were discussed. The only reason we knew about this patient was that the primary physician informed the facility as to why he requested the PIV be placed and removed daily. While instructing the outpatient nursing staff on the use and reasons behind TET they commented that there were at least 2 other patients who would benefit from the program.

Next, in developing a screening tool we need to make patients aware that honest answers to the screening questions will not eliminate them from being able to receive IV therapy, but will simply allow the hospital to properly support them through the process. There is an enormous amount of fear in admitting to an addiction problem, and it is not the goal of the TET program to label and blame the patient for his or her health situation. Education for the staff and the patient as it relates to addiction and health care issues is lacking in most facilities. The new screening tool that we are in the process of implementing can be found in Appendix 2. This will eventually be built into our computer system so that all the answers will print to the secure printer in the Vascular Access Department for review.

Although this process is being implemented and refined in our Outpatient Services Department, applying this screening tool to every patient who leaves our facility with vascular access in place is a project for the future. Our cancer care center currently does not screen for IVDA routinely and unfortunately cancer does not avoid people with a history of addiction. A cancer diagnosis could push even the most resolute recovering addict beyond his or he ability to cope without the pull of familiar, dangerous coping strategies.

Last, we must verify the rumor, or reality, of addiction. During our process we began early discussions with Behavioral Health Department personnel about identifying patients in need of TET and how to offer additional assistance during a health crisis. In the case presented here, our only initial indication that the patient had a history of IVDA was a mention by the primary physician during a telephone call to our facility. No written diagnosis was found or sent. Our patient willingly admitted his history because he knew that he was venous depleted and unlikely to be able to have a new PIV placed daily. Our challenge will be in identifying other patients in a similar situation without drawing unnecessary attention to their history. Our goal is not to identify and tag patients as unworthy of care but instead to realistically and compassionately meet them where they are and offer them an opportunity to manage their own health issues successfully with the support they need. In the initial discussion prompted by the new screening tool we hope to offer anything a patient is willing to accept—from a simple sheet of paper with resources to a complete workup by the Behavioral Health Department.

Conclusions

In developing this program for our patient we discovered not only gaps, but also opportunities to serve the whole patient by effectively treating his immediate issue and offering hope to address an underlying issue. In our mission of healing we do not want to automatically remove options from a certain patient population simply because there are both physical and mental components to care.

For too long patients with a history of IVDA have been unable to receive ambulatory IV-related care due to a no-tolerance policy and a risk assessment that takes no time to assess a patient's immediate health concerns and underlying mental health issues. We acknowledge the risks involved in placing a vascular access device in a patient with such a history and are aware of the reality that some patients will not make it through their IV therapy without incident. At our hospital we have chosen to meet each individual patient at that moment in time; give each patient an opportunity to succeed; and treat every patient with responsible, compassionate care.

Disclosures

The authors have no conflicts of interest to disclose.

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