intima a journal of narrative medicine

FIELD NOTES | SPRING 2015

Stuck

By Vik Reddy

I liked Burns. Almost all of the other surgical interns hated the rotation, but I liked it. They hated the Hannibal Lecter-like surgeries, which involved flaying dead skin. They viewed it as coarse surgery without any finesse. It wasn't as elegant as sewing blood vessels together, but, as I was embarking on a career in plastic surgery, I was interested in skin.

I was two weeks into my rotation and beginning my day of call. We began rounds in the Burn ICU. I had thought it would have the smell of rotting flesh, but I was wrong: it was redolent of bleach mixed with blood. Otherwise, it was like all other ICUs with the sounds of ventilators periodically giving breaths, and occasionally setting off an alarm. The intern who was post-call began giving descriptions of the patients and what the plans were for today. The post-call intern, Chad, handed me a patient list. I grabbed a pen, and began writing notes. Chad presented to the team, which consisted of the Burn attendings, the Burn fellow, and the other interns. The Burn fellow, Jason, a large man from Chicago, was in charge of making sure the rounds ran smoothly. Whenever Chad mentioned a task that needed to be done, Jason glanced at me making sure I was writing it down on my list.

We came to a patient who was admitted last night.

Chad stated: "The patient is a 45-year-old male who was in a house fire with 60 percent TBSA [total body surface area] flame burns. He came in this morning and only has peripheral IVs. He'll need a central line.

Jason winced, and looked at me: "Vik, the guy needs that line right away. You got it?"

I nodded. More than the surgeries, what I really liked about the rotation was the opportunity to place central lines. A central line is a large caliber catheter that resides in one of the larger veins of the body. Central lines permit the infusion of a great amount of fluid, whether that was intravenous fluid, blood products, or medications. Central lines also have multiple ports, so a combination of infusions could be given at the same time.

Patients with severe burn injuries require a large amount of intravenous fluid to combat the shock that occurs after a significant burn. Even after learning about the volume requirements in medical school, and spending a few weeks on the rotation, I was awestruck by how we drowned these patients in fluid. As an example, a man who weighed 70 kilograms (154 pounds), with deep burns over 40 percent of his body, would require over 11 liters of fluid in the first 24 hours—that's the equivalent of 3 gallons.

Rounds finished, and Jason and the attendings went to the operating room. Chad handed the pager over to me and went home for the day. I looked at the list. I would place the central line first: always better to get the procedures done early.

No one had ever taught me exactly how to place a central line. I had watched some of my senior residents place them on other rotations, and hoped that pantomiming them would make me more comfortable. The best piece of advice I received was from a resident named

Josh, a tall, lanky resident who hailed from the Pacific Northwest (with a corresponding skin hue). Josh told me the best way to become comfortable with central lines was to take one of the kits to my call room, open it up, and demystify the components by playing with them. I felt sheepish about wasting a kit, but I did as he instructed.

The kit consisted of the central line itself, a guide wire, and two syringes with corresponding needles. The smaller syringe and needle was called the "seeker" needle: it was used to find the large vein, and, if, accidentally, an artery is punctured, the damage would not be severe. The larger syringe and needle, referred to as the "introducer" needle, was used to puncture the vein once the location was determined by the seeker needle, and then the guide wire was threaded through the needle into the vein. Once the guide wire was in place, the needle was removed, and the central line was threaded over the guide wire and, hopefully, lie within the vein. Finally, the wire would be removed, and the central line was secured to the skin with a stitch.

I approached the patient's bed and pulled up one of the portable trays to set up the central line kit. As I donned a sterile gown and gloves, the patient's nurse helped tie my gown and asked if I needed anything. I thanked her, but I told her I would be fine.

"Alone at last," I whispered to myself. I stared at the patient's bare right groin. A common trait among ICU patients was the sheen of sweat on their skin. No matter how hot or cold the room was, and whether they were running a fever or not, all patients had that layer of sweat. I grabbed the antiseptic tube, cracked it, and applied it to the groin. After draping the area with sterile sheets, I felt for the femoral artery. NAVEL. N-nerve; A-artery; V-vein; E-empty space; L-lymphatics. That was the one acronym from Gross Anatomy that actually helped during internship; it described the anatomy of structures in the groin. The trick was remembering which way the NAVEL went. I remembered that if you looked at a patient, you could draw NAVEL on their right groin to get the proper orientation, but this was reversed on the left side. I felt for the femoral artery pulsation. The patient was thin, and the artery seemed so superficial, that I decided to forego the seeker needle and use the introducer needle immediately. The needle broke the skin and I slowly advanced it in. A flash of bright red blood quickly filled the needle. Shit! I had hit the artery. I withdrew the needle and threw it on the sterile tray. I grabbed some gauze and pushed down on the groin. The bleeding from the small hole in the artery could collect in the tissue around the vein, compressing it, and make getting the line all the more difficult. I hoped the pressure would minimize the bleeding.

After waiting five minutes, I released pressure on the groin. I could not feel a mass signifying a large collection of blood. Taking a deep breath, I reached for the needle. I felt a sharp pain in my left hand and looked down at it: I had grabbed the needle rather than the syringe! I tore the surgical glove from my left hand and saw the blood dripping from a small hole in my palm. Sweat began to build beneath my scrubs and I felt my testicles rise up. I removed my gown and ran out of the room to the sink. I washed my hands for three minutes. Strangely, I kept thinking about Macbeth and 'all the perfumes in Arabia.'

After putting a small dressing on my hand, I searched for the patient's nurse, Pat, and informed her of what happened. She had a concerned look on her face, and quickly moved into the room with several blood tubes. A few minutes later, Pat exclaimed to the clerk: "Stat labs: Rapid HIV and Hepatitis panel."

There it was. Her saying it made it real. I stared at the blood specimens she had obtained. There was a chance in that simple motion that I had been exposed to a blood-borne virus. I left the Burn ICU and made my way to Call Room.

This was not the first needle stick of my intern year. The two previous times, the patients had been negative for HIV and Hepatitis C. I had become a bit of an expert on blood exposures in healthcare. My first exposure had occurred while I was trying to close a wound. I was terrified. I remember staring into space after I had done it. The surgical attending in the case noted my paralysis: "Break scrub, go to Employee Health. Don't worry. This won't be the last time." She was right. A month later, I stuck myself with another needle in the operating room when I was trying to suction blood for an attending and he accidentally hit my hand. I was calmer the second time around.

The protocol was the same: the labs Pat had sent down would be processed; the HIV test would come back within 30 minutes, but the Hepatitis C test may take a day or two. I had learned from my previous exposures the risk from getting stuck with a solid needle, like the ones in the operating room, was negligible, but the risk was significant when it was a hollow needle. I kept thinking about the bright red blood from the artery and the blood dripping from my palm.

The Call Room was spartan: a bed, a desk, and a telephone. There were no windows and the illumination was a flickering fluorescent light. I lay down in bed. If the patient was HIV-positive, the odds were still pretty low of becoming seropositive—using the clinical term instead of "catching the virus" was my way of controlling my anxiety. Seropositive was an indication your body had been exposed to the virus, and had developed antibodies against it. Some reports stated the risk was less than 1 percent.

The risk of becoming seropositive for Hepatitis C was higher, with some reports as high as 25 percent. I had met an anesthesia resident who was Hepatitis C when I was in medical school. Ironically, she told me she had been exposed when she was placing a central line. She said with treatment she was doing better, but she was always laconic and I attributed that to a sense of sadness about her exposure.

I should have used the seeker needle. I should have been paying more attention.

I thought that maybe if I looked at the patient's record, I could get a better idea of how high his risk factor might be. No. Outside of not really giving me any comfort, it wasn't right. Was it ethical for a patient to ask a doctor what his or her sexual practices were? If they had ever used drugs?

I looked at my pager, which also functioned as my timepiece. It had been 9 minutes since the labs were sent down.

Intern year had been an experience in involuntary celibacy. While the urge to date and meet someone was strong, the chronic exhaustion was prohibitive. I had gone out with an internal medicine intern once for dinner and a movie—I fell asleep during the movie. She said she understood, but she rebuffed my invitation for a second evening out.

In medical school, I had dated an English graduate student. During our first awkward session of making out, she had stopped and asked me about my "history." Three partners, no herpes or other STDs, I replied. She laughed. She informed me a simple, "I'm ok," would have sufficed. I wondered if I would have to list my exposure as part of my history—one memorable one-night stand.

Fourteen minutes had passed.

It wasn't a lot of blood and I had washed it immediately. Maybe the risk was pretty low.

Inoculum. That was the term the nurse in Employee Health had used when describing why hollow needles were so much riskier in transmitting blood borne diseases. The small bit of blood in the needle was transmitted into the individual like the inoculum in vaccines. I thought about looking up articles on the transmission risk, but that would just get me more amped up.

I should be down in the ICU getting that line in. Jason would be out of the first case soon and he would be upset. He was a good fellow: he demanded a lot, but was fair. He had taken call for the last six months with few days off. He reminded me of a much taller Jon Favreau—barrel chested, but with a large beard. My first night of call, a five-year-old boy from Mexico was in critical condition. He had been burned over 95 percent of his body. As he was about to leave, Jason said, "You call me for anything, alright. I don't care what time it is." When I woke up the next morning, I learned the five-year-old had died. The nurses had called him directly, and he had tried resuscitating him for hours. When I asked him why they hadn't called me, he stated, "You're JV, kid. This is a varsity case. Plus, you could use the beauty sleep."

Seventeen minutes.

I made my way to the Burn ICU. Pat nodded when I grabbed a kit and made my way to the patient's room. She had been nice enough to set aside a set of sterile gloves and a gown—she must have known I'd be back soon. As I steeled myself to try again, Jason bellowed behind me: "One fucking hour and you're just getting to this. I hope you haven't been in the caf getting breakfast!"

I turned and replied, "I'm sorry. I tried earlier and got stuck with a needle."

"Dirty?" Jason queried.

"Yes."

"The big one?"

"Yes."

"Fuck," Jason said quietly.

"I'll do it now, Jason. It won't take me more than 10 minutes," I stated.

"I'll do it. Go take care of the other things on the list."

I thanked him and left the ICU.

Thirty-one minutes.

Pausing by a window, I noted how blue the sky was. A native of the Midwest, I was still struck by how mild California winters were. On Match Day, the day when fourth-year medical students find out where they will be going for residency, I was giddy at the prospect of heading to California. My classmates teased me I was going into plastic surgery because I wanted to make a lot of money. My retort was always the same: if I just wanted make a lot of money, there were a lot easier ways than going through medical school and residency.

The truth was I loved operating, and, moreover, I loved plastic surgery. Unlike other surgical fields, where the dissected portions of the body were hidden by skin, there was no hiding the outcome in plastic surgery. If a young child came in after a dog bite to the face, the parents would see the results immediately. There was no escaping failure, but that made the successful outcomes all the more sweet.

As I stared out the window, I realized I wasn't afraid of becoming sick from HIV or Hepatitis C. I was afraid of not being able to operate.

The pager went off. It was the lab. I grabbed the nearest phone and punched in the numbers.

"Hematology."

"Yes, this is Vik Reddy. I was paged."

"Right. The HIV test on the source patient is negative. Now, you will still need to follow-up with Employee Health for the Hepatitis C results and fill out the requisite documentation. Have a good day."

"Thanks." The only word I focused on was 'negative.'

I went down to the Burn ICU and saw that Jason had placed the line and was chatting with Pat. He saw me approach, and stopped his conversation.

"What's the good word?"

"Negative," I replied.

"Hey, good for you. Don't worry if you get Hep C, I'll do your liver transplant. I'll make sure to screw it up."

"Thanks," I smiled.

"Alright, enough BS. There's a burn coming to the ER in 10 minutes. Meth lab explosion. I'd appreciate your help…that is, if you're free?"

"Yep, I'm good."

We left the ICU for the ER.

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