The Journal of Emergency Medicine, Vol. 57, No. 4, pp. 587–588, 2019
Published by Elsevier Inc.
0736-4679/$ - see front matter

https://doi.org/10.1016/j.jemermed.2019.06.046

Humanities and Medicine

KETAMINE: SAFE UNTIL IT'S NOT - A TERRIFYING TRIP TO THE K-HOLE

Erica Simon, DO, MPH, MHA

Department of Emergency Medicine, San Antonio Uniformed Services Health Education Consortium, San Antonio, Texas and Department of Military and Emergency Medicine, Uniformed Services University of the Health Sciences, Bethesda, Maryland
Corresponding Address: Erica Simon, DO, MPH, MHA, San Antonio Uniformed Services Health Education Consortium, MCHE-EMR, 3551 Roger Brooke Dr., JBSA, Fort Sam Houston, TX 78234-6200.

On a daily basis we, as emergency medicine providers, discuss drugs and their side effect profiles. We often survey our colleagues regarding rare reported phenomena that have not been previously encountered. In my short emergency medicine career, I've heard the praises of ketamine thousands of times over: "Ketamine is safe and effective." "You can never give too much ketamine." "You can theoretically get an emergence reaction, but I haven't seen it." I will be the first to admit that I used ketamine for nearly every procedural sedation that I performed—until my little adventure to the K-hole. What you're about to read acutely magnifies a mantra that I'm sure many of us heard throughout medical school: "The right patient, the right medication, the right dose, the right route." Of the many lessons to be learned, mine was in my approach to resident education regarding sedation. All drugs can be unsafe. The rare side effects that "we'll never see" certainly happen—we know this.

I glance at the clock, "Thirty more minutes," I tell myself. Three weeks of arduous military training are coming to an end. I'm beyond exhausted, my body aches, but only one round of grappling stands between me and a coveted completion certificate. I square up to my opponent. Within minutes, I have gained a position of dominance. Suddenly, I feel my body careening toward the floor. I attempt to brace my fall, but I know it's too late. A surge of fire streams through left my arm. Lifting my head from the floor, I find an appendage oddly reminiscent of that of my childhood Stretch Armstrong's. Nausea overwhelms me. I scream in pain. My elbow is dislocated.

After what I can only describe as an eternity, an ambulance arrives to transport me to the nearest satellite emergency department. Sobbing and shaking, I am wheeled into a room. I watch the clock on the wall; the minutes sweep by. As 4-letter expletives stream from my mouth, my rational mind begins to fail me. Although I recognize that other patients may be requiring more acute treatment—my arm is neurovascularly intact—my frustration grows. The hour hand makes yet another revolution. I realize that it has been nearly 2 hours and I have not received pain medication. As I press my call light, a female voice responds. With all of the authority that I can muster, I forcefully explain that I am an emergency medicine doctor with a dislocated left elbow, and that I need pain medicine, x-rays, and a reduction. Minutes later a nurse enters with ketorolac because "that's the doctor's policy…she starts with ketorolac." I feel the waterworks coming as I bow my head and timidly beg for morphine. "Don't worry, your x-rays will be done soon."

The view(s) expressed herein are those of the author(s) and do not reflect the official policy or position of Brooke Army Medical Center, the U.S. Army Medical Department, the U.S. Army Office of the Surgeon General, the Department of the Army and Department of Defense or the U.S. Government.

Reprints are not available from the author.

Received: 23 June 2019;
Accepted: 30 June 2019

Fast forward to hour 3 postinjury; x-rays note my posterior elbow dislocation. By this point, I am sick with pain, coming up for air from the emesis bag. “Dr. Simon, we’re going to reduce your elbow with ketamine now. We just need your consent.” “Do it already,” I angrily reply. My treating physician directs the nurse to draw up the ketamine. “Doctor, I can’t do that, the policy here is that the physician draws and administers ketamine.” Immediately, my heart sinks…why doesn’t this physician know that? “How much ketamine are you giving me?” I ask. “100 milligrams.” I lay my head back for the nurse to place an end-tidal nasal cannula. Seconds later, I glance down at an empty 10-mL syringe.

My mouth burns. As I drift away, I feel a dull ache behind my teeth and at the front of my chest. “Breathe, Erica, take a breath” whispers a quiet voice, far in the distance. I plummet to the depths of my consciousness. My mind bounces from a 1980s television screen, black and white with snow, to a kaleidoscope of colors. I feel myself slipping away. I can no longer remember my name. I search my memories for clues to my identity. I do not know where I am. I become oddly fixated on my breathing. I watch my chest rise and fall, but in my dissociated state I cannot understand what I am seeing. My body parts grow mouths that begin to hum, to sing. As I will my eyes open, I scream. A little girl who is on fire is grabbing my arms, holding me down. She reeks of smoke and burnt flesh. I resist with every fiber of my being. I need to stand, to help her, to stop the burning. I begin to recognize moisture on my skin. I can only make sense of the word “vomiting”; it’s yelled repeatedly. As my conscious mind finds itself, I let out a long sob. My first lucid thoughts are of my Uncle Danny, someone who I knew only through pictures…a severely autistic child, who at the age of 16 died while strapped to a hospital bed. He had aspirated after a seizure. Hours pass. My orientation waxes and wanes.

I sit up in bed and am being changed into a hospital gown. A male nurse looks down at me. “Dr. Simon, you were transferred to this hospital for admission. We should talk about what happened.” “Okay, what time is it?” “Ma’am, it’s 3 o’clock in the morning.” “That doesn’t make sense. I was seen yesterday around 2 o’clock in the afternoon.” “In the nursing report they told me that you were mistakenly given 500 mg of intravenous ketamine. The ketamine was pushed, you stopped breathing. You were sedated for nearly 8 hours and had a severe emergence reaction. The medical director from the satellite emergency department will be in this morning to talk to you, but here’s the package from the transferring facility, you should read it.” “Ketamine administered: patient apneic, SpO2 77% despite jaw thrust and sternal rub. Patient bagged until apnea resolved, SpO2 95%. Transitioned to nonrebreather and then nasal cannula. Hypotension: blood pressure 63/44 (automatic), 71/50 (manual). Total fluid resuscitation: 5 L normal saline. Blood pressure improved to 99/68. Left posterior elbow dislocation: reduced. Reduction confirmed by x-ray. Recurrent emesis: odansetron (16 mg), metoclopramide (20 mg). Emergence reaction: lorazepam (1 mg).”

I stop the nurse before he leaves the room. “This is going to sound odd, but I remember something about someone being on fire.” “Ma’am, I’m not sure. Your nurse at the satellite emergency department mentioned that you were fighting the restraints and screaming about something like that.” Hours later the hospital medical director apologized for my physician’s error. “The doc is new, and the situation is being dealt with harshly. At least it was only ketamine and not something more dangerous.” “Sir, I appreciate you coming. I know that there’s likely concern regarding medical liability, but I’m sure that the physician who treated me already recognizes the severity of the situation…giving me the wrong dose of this medication was unsafe. Pushing a drug that was not designed to be pushed was unsafe—even though it was ‘just ketamine.’”