

Of Mothers and Monkeys

Caitlin Kuehn

In the morning I rush past the early shift nurses and the acrid chemical scent of burnt coffee in Styrofoam cups, towards the locked doors near the cafeteria of our city's largest teaching hospital. There are other student research assistants, but I have been here the longest, nearly three years, so I am the most trusted to self-manage the hustle and flow of laboratory life. By the time I layer on the second pair of gray plastic booties over the first set, and steal a look at the clock perched above another layer of locked doors, my mother is already halfway through surgery at the other end of the hospital. I pinch the metal at the bridge of my facemask onto my nose, take a hard breath in, and enter the lab in search of Domingo.

The trick with Domingo is outwitting his speed. He is small enough and jittery enough—and clever enough—that even with the back of the cage slid forward, pressing him with his flank against mesh, he manages to spin himself around until he is spread-eagled facing me. From this position it is impossible to safely administer the ketamine into his quadriceps. Intramuscular injections are a delicate process, a quick and confident plunge through the skin into the muscle tissue before the leg is instinctively jerked away. If the aim is off or I am too self-conscious in my movements, too tenuous, shaky, sluggish, or scared, I risk hitting major arteries or the sciatic nerve that runs deceptively close to the surface in primate thighs. Acute neuropathy, localized necrosis, lameness, and atrophy can all be the permanent fallout of a poorly aimed injection.

Beyond the walls of the lab, and outside the confines of this hospital, it is one of those disconcertingly perfect early October days—all sunshine and light breeze. In here the air is cool and motionless. My supervisors need an early start, so I reach in with

my double-gloved hand and tickle gently at the skin between Domingo's leg and pelvis hoping that perhaps he'll flash me a moment of that sacred thigh. Instead he pees.

Domingo is a slender cynomologous macaque, only about 4.5kg. The rule of thumb is 0.1ml of the sedative per kg but I draw up 0.6ml of ketamine into my syringe. Domingo is an addict baby and so requires more. Before he was born—and before I worked for the lab—Domingo had a mother nicknamed Big Mama because she was particularly large for a female cyno and sometimes researchers are not so creative. Domingo was only discovered when Big Mama was scheduled for euthanasia. She was spared from death by her pregnancy, but Domingo had not been spared from the ketamine he had been exposed to while in utero.

Domingo plopped into the world a wind-up toy. He bounced from one end the enclosure to another, frantically shaking at the metal doors and the enrichment mirror hanging in the corner. He chewed up his neon-orange toys, tossed them violently across the cage, and smacked and rattled at his mother's head until Big Mama bit his hand off.

This is an image I hold, despite my not being there to witness it—Big Mama in all her imposing girth staring calmly at her caretakers while her tiny anxious child lies on the floor bleeding out. They never did find the hand. She likely ate it. And so, Big Mama was once again scheduled for a large pink syringe of pentobarbital.

This is what came into my mind earlier this morning, just before rushing to work, as I held my own mother's hand while she was prepped for her lumpectomy. She was scared. But I couldn't stay long enough to wait with her and my stepfather until she fell asleep. I had my own anesthetizing to do.

Once my mother begins chemo a few weeks later, it becomes logistically easier for me to rotate between the animal ward and the human ward. When her hCG levels come back slightly positive on the tests prior to her first session, we joke about how—after needing to adopt her two kids—she somehow managed to get pregnant now, at age 53. But still, they delay the first treatment until they are sure.

Her second chemotherapy run, four weeks later at the end of a strangely mild November, does not go well. Sweating and gasping, my mother tells us she can taste tin in her mouth, that her throat is swelling and she can't breathe. My stepfather holds her hand tight as her face goes red in pain and panic. A physician storms in to turn off the chemotherapy cocktail that is flowing too quickly into her body. I so badly want to touch my mother, but I am crammed in the opposite corner of the curtained-off cubicle. I pick at the skin on the top of my hands and make a quiet mantra out of *You're going to be okay* instead.

When she has recovered enough, the drip is restarted, at a much slower rate so that her body can adjust to the onslaught of docetaxel and cyclophosphamide. The therapy is now paired with intravenous Benadryl in hopes that it will stave off the overzealous defensive mechanisms of her own body. I have to leave, so I tell my stepfather to call, then head to the other end of the hospital.

I'm supposed to be assisting with weekly feline IOPs—a painless tap of the eyeball to measure intraocular pressure, with a fish-flavored treat for good behavior. Even though I am technically allergic to cats, I let Sebastian sit on my lap for a half an hour after the test. But even his rumbling chest against my thigh, the persistent press of his head into my palm, does not calm the palpitations kneading, clawing under my sternum.

Sebastian crawls up the front of my scrub shirt until his face is up against mine. I knock my head against the wall trying to avoid his abrasive kitten tongue. There is no phone service within the cinderblock of the Lab Animal Resources Center, and so I will not receive my stepfather's update until the day's job is complete. There are seven monkeys on the schedule who will need to be sedated for their medical checkups, and then carefully watched during their recoveries, before I'll be able to leave the lab.

As I sit here now, with Sebastian on my lap and a useless phone in my scrub pocket, I wonder what animal first shared with my mother that sudden fear of a throat closing in. But this is probably impossible to know—the history of animal research is too long

and labyrinthine to trace. I realize that I—as a student, with very little power but a whole lot of responsibility—am complicit in a moral choice I have still not taken the time to make. Some days it is hard to remind myself that medical research has a purpose. Some days it is as clear as cancer. Some days I just do not know.

Toward the end of December, it has finally snowed, and my mother has her third round of chemotherapy. Today a cat is scheduled for a pattern electro-retinogram. We anesthetize the cat and then flash different-sized stripes of black and white through an ancient computer and record her optical activity. I am responsible for making sure she is breathing appropriately, that her heart rate is okay and blood oxygen levels sufficient. When she is done, I apply a stripe of triple antibiotic ointment to each eye and then softly pinch the skin at the back of her neck. This is the same patch that mother cats gather into their mouths to calm and carry their young. It stretches easily so that I am able to effortlessly inject 60ml of Lactated Ringers Solution underneath her skin from a comically large syringe. The fluid rehydrates her and quickens her recovery from the anesthesia. But even so, she takes longer than most cats to return to the upright position, to return to walking without a drunken slur to her gait.

I wait alone at the hospital cafeteria, checking in on the cat every half hour until 9:00 p.m. The cafeteria is officially closed, but handfuls of families and late night staff sit at the tables eating ice cream purchased from the kiosk across from the doors to where my cat is attempting to be herself again. My mother is probably at home pecking slowly away at another tray of lasagna left by well-intentioned neighbors.

I stay with my parents for Christmas, which is lovely. The day after is not. I wake up to a Post-it note on the counter informing me that my mother and stepfather rushed to the hospital at 4:00 a.m. because of a sudden 104° fever. When I call, I am told that my mother has been placed in isolation. The chemotherapy has inadvertently killed off her immune system and now she's fighting

off unregulated bacterial growth on top of her own cells' chaotic attempt at manifest destiny. While my mother is trapped alone in a room where people can enter only if dressed in paper suits and those damn plastic booties, I run around the house trying to make things clean and healthy and perfect.

After this, my mother is required to take Neulasta, a medication designed to jump start the bone marrow's production of white blood cells in order to compensate for the ones she's lost to the chemotherapy. Her doctors hope that taking these injections at home will prevent another sepsis incident. Neulasta is injected subcutaneously, and while my mother is perfectly capable of administering the treatment herself, she is too nervous and cannot manage the syringe. She hands me the refrigerator-chilled box with the pre-measured dose and asks me to do it. I have done this five thousand times, after every cat and monkey procedure. I could do a subcutaneous injection in the dark, and often have, but now I am shatteringly nervous. My mother trusts me, and more than anything I do not want to fuck this up.

Since her diagnosis in October ("Breast Cancer Awareness Month," my mother grumbled at the Packers' pink-outlined shoulder pads. "I am plenty aware."), she has been asking me questions. I mutter what I can about stages, metastasis, faulty cellular junctions, apoptosis, and genetics, but most of it—nearly everything she asks me—I do not know. My medical knowledge is limited to what I have learned in my undergraduate science classes, or here at the lab. All of it applicable only to non-human mammals, or else too theoretical to be of any use for as intimate a need as this. I have no good answers. Instead, I breathe in roughly through my nose, tent the skin of her lower abdomen exactly as I have done for the past three years to the soft maternal carrying space of felines and primates, and quick as faked confidence prick the needle in.

I take my time before giving the ketamine to Domingo for today's fundus photography session. The last time I was with him was months ago during my mother's lumpectomy. He is exactly the

same. I bring Nutri-Grain fig bars from the monkeys' private kitchen and give some to everyone but Domingo. He will have to wait until after his procedure so as not to upset his stomach, though he tries to snatch his neighbor's treat with his one feisty hand. Domingo requires so much ketamine to sedate and he metabolizes it in strange ways. We'll give him more and more, and there's no effect, no effect, then suddenly he's sound asleep, and then just as suddenly he is wracked with seizures. His hand will clench and his back will arch, his jaw opened like a yawn, or a scream. I'll hold him like an infant, cradled in my arms, as his body tightens in convulsions. "You're going to be okay," I whisper through my mask. "You're going to be okay."

I don't remember when precisely in my mother's treatment she spoke to me of why she was fighting—a term she uses but I, like Susan Sontag, am wary of. The body is not a battlefield, I want to say, and disease and chemotherapy are not soldiers struggling for ownership. We are in my tiny apartment near the hospital. Or maybe we are in the car separated by the console between the front seats. In either case she is wearing one of the three tracksuits she has been alternating for months—today it's the powder blue corduroy.

She adjusts the lay of her stretch cotton cap. "I was trying to think of why I am doing this," she says. She is crying while she speaks. I've swallowed everything into a sock ball stuck in my throat as I always do during these conversations. "It's for you guys," she says. My mother does not cry pretty—no gentle tears, just pink patches of skin and watery eyes. "Your sister and you are why I need to keep fighting. I love you both so much."

It is easily the worst thing she could have said. I almost hate her for it, for mutating this disease into an opportunity for selfless parenting. I want to tell her that mothers aren't meant to be martyrs, that it's... it's *selfish*. She's pushed her will to persevere off onto my sister and me. It's too much pressure to be somebody else's reason. But it's impossible to find the words to tell this to someone you love, especially in a moment of mutual vulnerability. It's impossible

to ask them to remove you from the calculations. And frankly, it's presumptuous to tell someone how to rationalize their own animal fragility, how to frame their own survival.

In any case, that sock ball has unraveled, that thick ribbed cotton clogging up the drain of my throat. I cough instead. I probably shake my head "no" and hug her. She probably continues to cry into that embrace, with my arms looped awkwardly around her neck, my chest kept carefully two inches away so as not to rub at the sunburn spots of radiation. Or perhaps her hand interlocks painfully tight with mine, balancing on top of the gearshift between us.

By the early spring, my mother is well into her radiation, and I've planned out a tattoo. I too, apparently, want experience at the other end of a needle. It's a Golden Snitch, a childhood symbol of perseverance from my Harry Potter days, with one of those damn ubiquitous ribbons inlaid. Once it's done I'll have to figure out how to bandage the healing skin carefully with tape and gauze before gently tugging down the tight neoprene wrists of my gloves. But today it's just a crudely penned outline that I look at quickly for encouragement. It is going to be a tough day and I don't really want to go in. We have to put down a monkey. I rarely know why.

That's a lie—I do know. Occasionally a lucky cat will be adopted out, fat and happy, to a former student, but this is not the tale for the majority of the cats or monkeys here who have nothing to remedy the ultimate obsolescence of their bodies. For these, euthanasia is written into the end-term of their research protocols. It would be too easy to say that death is a condition of life, but there it is in 12-point font.

What I do in times like these is shave their forearm, to make it easier for my supervisor to see. When I hold the cyno's arm down this morning, his fingers instinctively curl around mine, as my supervisor injects that which will halt his trusting simian heart. My supervisor looks as sad as I am as she waits—watching the cyno's grasp relax from mine, listening for the last faint beat. When she finally pulls the stethoscope from her ears and says it is over,

we quietly perfuse the body with a fixative that trickles slowly from two separate IV bags. She soberly cuts off his head with a steel-bladed hacksaw, then settles the body into the double-layered black bags I am holding open. With a more delicate electrical bone saw she carefully chips open his skull to remove the brain, which I place in a jar of buffered 4% paraformaldehyde to be donated to another lab in Japan. Death is a simple science.

My first day on the job, three years ago at age 19, my supervisor tossed me a live monkey. On the second day, a dead one. They try to get you used to these things early. Distance is a necessary technique in medical research, one with the potential to succeed as often as it fails.

When you're balancing with a garbage bag of dead weight, your sense of space narrowed to a whitewashed room that smells of bodily fluids, paraformaldehyde, and antiseptic, it's hard to remember you're still just a kid. At home though, the image is my mother lying on top of the homemade quilt on her bed. Her tracksuit jacket—velveteen gray this time—is rolled up past her navel, her stomach tipping out of the pants' elastic waistband. She crunches her face and looks away as I inject. It is here I am most desperate to conjure the practiced adulthood I've learned from the lab.

I wasn't aware until that conversation in the car—or in my apartment—that my mother worries she might die. In my empirical brain she is fine. Stage 1, little evidence of metastasis to the lymph nodes. Diagnosis and prognosis are beyond wonderful. I know the treatment is draining and demoralizing, but I have never actually considered her dying. There is no serious threat—it's Stage 1, right?—and besides, she is my mother. She, more than anyone in my life, has always been there. Separation is not only impossible, it's unimaginable.

My mother's own father died before she was my age now (colon cancer, likely genetic). She understands and accepts the tender unanswerable realities. I, on the other hand, am desperate

to know things that I cannot comprehend. Cats and monkeys keep being put down while I watch and hold their hands, because that is what is written. It is supposed to be my job, as a researcher and a daughter, to confidently understand and explain. Yet, for months, I have been consulting Wikipedia and Google Scholar, hunting for everything I can find on infiltrating ductal carcinoma and Taxotere, certain I can figure it out, until it is so late into the night I might as well wake up again to return to the secret paths of the hospital, the absorbent liners full of monkey pee, the vials of sedative, the aluminum tubes of ointment, the double-layered everything. I'll meet my mother for lunch after her checkup, if she is feeling up to it. Sometimes she comes even if she isn't.

There are days I wish I was raised by Big Mama. My mother would be grumpy and large and not give a shit. Instead of struggling through the conflicting emotions of her own fears and mine, Big Mama would unabashedly claim the space for herself. When I, in my malignant desire to make her body justify itself, or my own self, become too Domingo-like—frantically running back and forth in our enclosure, scratching and fussing at my mother's scalp with its uneven patches of post-chemotherapy soft hair—she would simply bite my hand off. Easy as that. In this story, Big Mama's life is not defined by her maternal moniker and she is not put down for failing to devote herself to her child. In this story, cancer is not entangled with such sacrificial definitions of motherhood. And in this story, perhaps, Big Mama's anxious bouncing baby would forgive itself all its messy not knowing.

Of course this is a terrible metaphor, one my human mother would ache to hear. I do not truly prefer her as an ornery, old-world primate. What I prefer is the only thing I can properly conceptualize—her *here-ness*. And selfishly, despite all my anger towards her need to center her motivation for survival on me and my sister rather than on herself, what I prefer is a mother who is bright and healthy, who will still place sliced bananas on a plate drizzled with chocolate when I am nervous and unsure. But it does not matter how long your mother saved to purchase you your first

microscope, how thinly she sliced the onions for your slides, or how gently she smiled as you settled your head upon her chest and rambled on about topics she didn't understand, mothers—and daughters—are not immortal. I can no longer presume us invulnerable. ४