ON THE BRAIN

The Best Bad News

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"I'm sorry to have to tell you this," said the man on the phone, "but they found cancer."

"That's the best news I've heard in a year," I replied.

In a year that started with a historic pandemic full of tragedy and surreality, this moment was surreally cathartic. I began 2020 unsure what to make of coronavirus news, skeptical it would change much. Soon, we heard devastating stories from Italian hospitals. My world first changed mid-March 2020, my first emergency department (ED) shift flush with symptomatic patients, new protocols for "testing," and workarounds to deal with the lack of testing. We were in the first COVID-19 wave, reusing off-brand personal protective equipment, never quite overwhelmed but only because we tripled intensive care unit capacity and converted the entire hospital to a COVID-19 hospital. Like many, I didn't want this but was proud to confront the historic challenge.

My biggest fear was bringing COVID-19 home to my family. My life has felt charmed. I grew up in an affluent suburb, and compartmentalizing work came easy; medical school and residency were tough but fulfilling challenges. As the days went by, I found myself with a wonderful wife and daughter and a career I enjoyed that rarely felt like work. Occasionally, I worried that the other shoe would drop—it could be COVID-19. My wife and daughter moved in with my wife's sister across town for the pandemic's first 2 months. Not quite isolated in the countryside like those World War II stories, but "safe" until we felt things quieted down enough.

The Other Shoe

Local COVID-19 cases dwindled and became the new background. In July 2020, I went running and it felt slippery, like it had rained (it hadn't). Maybe my shoes were worn down; I bought a new pair. Walking down stairs felt off, like the banister was on the wrong side. My heels were catching and carrying small items down stairs seemed oddly difficult. It felt like I was losing knee proprioception. Things added up and I made an appointment with a neurologist.

By my appointment, I had some minimal dysarthria—barely enough to register over my lifelong fast speech and mumbling. I'm not sure the neurologist would have ordered imaging if I wasn't a physician. I don't know what I was hoping for. No problem but no explanation would be frustrating; an easily resectable meningioma could be "good." The magnetic resonance imaging was normal.

My thiamine came back low. My wife is a dietitian (and excellent cook); we live near a Whole Foods. I couldn't possibly have beriberi. My wife half joking, half hoping asked if I had a secret drinking problem. At least that would be a known quantity.

My symptoms progressed slowly without answers. My gait gradually developed into a spastic ataxia, worse on the left. Running, stepping sideways or backward, and navigating around objects became difficult. Other than a vague mildly off and wide gait, my examination results only showed mild hyperreflexia. Walking in socks on hard wood floors became unsettling. My speech gradually worsened. As an emergency physician, I described it as dysarthria, and eventually developed "textbook" scanning speech. As with my gait, it was worse at the end of the day or after insufficient sleep. I have never had vertigo or frank dizziness but occasionally I have a vague lightheadedness that lasts a few hours. Certain repetitive movements became difficult.

At this point, the neurologists' leading diagnosis was a progressive genetic disease, like hereditary spastic paraplegia. A positive genetic test result would provide an answer, but a negative test result wouldn't rule it out. In addition to the diagnostic uncertainty, this raised bigger questions. How slow would I progress? Is my daughter at risk? How do we tell her? How long would I be able to continue working clinically? Clinical care and bedside teaching are my main sources of professional fulfillment. I worried I would have to transition out of clinical care decades early. Fortunately, financial security wasn't a concern; I already spend part of my time with a medical journal, but I was not ready to do nonclinical work full time.

I reached out through my professional network and was connected with a neurologist with expertise in difficult-to-diagnose disorders who graciously advised my workup. Being a physician-patient can be tough—balancing when to reach out outside standard channels, how much I can or should dictate my care or pass along recommendations, deciding when to tell those caring for me that I am a physician. Too early risks coming off as entitled, but waiting too long feels like a trap.

Countless tests came back normal: magnetic resonance imaging of my brain and spine, genetic tests for hereditary spastic paraplegia and ataxia disorders, whole-exome sequencing, blood and urine panels too numerous to count. An electromyography and nerve conduction study showed borderline diffuse chronic neurogenic changes that could be seen in a central nervous system disorder. Eventually some clue emerged: mild cerebrospinal fluid pleocytosis and oligoclonal bands. This might be a paraneoplastic syndrome, but imaging and paraneoplastic panels were normal. A mediastinal lymph node lit up on a positron emission scan; interventional radiology or pulmonology might be able to biopsy it. I cannot fathom how normal people navigate this. I called the ED radiology reading room and asked the resident, and a colleague in the medical intensive care unit. Interventional pulmonology seemed to be the best path. The pulmonologist didn't think they could get it; they forwarded me to thoracic surgery, who could biopsy it robotically. There might also be thymus tissue; he suggested maybe this is some variant of myasthenia gravis; he will resect it all if possible.

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By now it's March 2021, and I declined steeply in the winter. Stairs were a challenge; we sold our second-floor walk-up and moved into my wife's other sister's old condo, in the elevator building they lived in when we met, where we watched "American Idol" in medical school. I scheduled my thymectomy between shifts, as I had snuck in empirical intravenous immunoglobulin and intravenous steroid regimens. I could still work; the mask covered up much of my dysarthria and my new cane answered some questions.

The thymus pathology showed nonspecific granulomas, which didn't point directly to sarcoid and the neurologists didn't think neurosarcoid explained my symptoms. Again, I used my professional network to find a sarcoid specialist, and he asked the pathologist he works with to see if my granulomas look "more" like sarcoid or not. She found microscopic seminoma.

It was a whirlwind. A kelch-like protein 11 antibody test, a recently described paraneoplastic syndrome mostly associated with seminoma, came back with positive results.[1] After spiraling for 9 months, I had a diagnosis and we could figure out a plan.

At this point, I had only told close family, friends, and coworkers. Now that we had some answers, I expanded the circle. I lead a somewhat public life; I am active in the medical social media community, with a decent Twitter following, a wide network of colleagues, acquaintances, and many true friendships developed via med Twitter. Until last winter, I hosted a weekly medical journal author interview on YouTube.[2] I started privately telling many of my online friends. I haven't previously shared my story publicly, not for privacy, but I don't want my online persona to be about my paraneoplastic syndrome.

As the situation crystallized, I thought about the fortunate position I have as a physician with a comfortable income and the opportunity to help others through my work; how many others have taken this same privilege and used it for personal enrichment, many taking advantage of the pandemic's markets for doubt. I didn't know if I would be able to return to work or in what capacity—have I squandered my opportunity by arguing about ketamine on Twitter and doing small-scale research about medical education blogs? Has my work in medical journal social media been worthwhile enough?

I began medical leave to start treatment with intravenous cyclophosphamide (I learned using cyclophosphamide for immune suppression was at least partly established by a young Anthony Fauci).[3] Conversations with oncologists were surreal: seminoma is generally easy to treat, but was it in my thymus from early germ cells or metastases? Recurrence is usually easily found, but I'm not worried about dying of cancer like most people with cancer worry about. These symptoms are like a ratchet—even microscopic recurrence would likely trigger symptom progression, meaning lost ground that can't be recovered. Should I get empiric chemotherapy? Would the cyclophosphamide also work as "chemo"? How can anyone navigate this? All while navigating medical bills, insurers, disability insurers, and other bureaucracies? Is this incoming call spam or an important call from an insurer?

Describing this to nonmedical friends is its own challenge. People hear "cancer" and "chemo" and are surprised that I "look" so "healthy." I've appreciated the good in people my experience has brought out. Strangers are generally helpful when they see a 40-ish healthy-appearing man using a walker. I've appreciated how supportive the friendships I've built on Twitter have been, even before friends knew I needed support. Watching my 8-year-old daughter try to hug me while remembering where I recently had surgery to try to not hurt me was the sweetest thing.

I've completed cyclophosphamide and started rituximab/mycophenolate; I've returned to work and am figuring out how to work in the ED with dysarthria and a walker. Questions remain: how long to stay immune suppressed? If I stay immunocompromised, eventually I will get a serious infection, particularly with an ongoing pandemic; if I stop too soon, my symptoms could worsen. In simple terms, I like sushi and undercooked cheeseburgers, but if this experience has taught me anything, it's that I also like walking and talking.

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1. Dubey D, Wilson MR, Clarkson B, et al. Expanded Clinical phenotype, oncological associations, and immunopathologic insights of paraneoplastic Kelch-like protein-11 encephalitis. *JAMA Neurol*. 2020;77(11):1420-1429. doi:10.1001/jamaneurol.2020.2231

2. JAMA Network Open Live. Accessed December 10, 2021. http://ja.ma/jnolive

3. Fauci AS, Wolff SM, Johnson JS. Effect of cyclophosphamide upon the immune response in Wegener's granulomatosis. *N Engl J Med*. 1971;285(27):1493-1496. doi:10.1056/NEJM197112302852701