

The neurological exam

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i. Mental status

I meet B—unbeknownst to him—under the fluorescent buzz of the intensive care unit, around 3 AM in the middle of a busy call shift. *He had a seizure earlier and now he's GCS 3*, the ICU resident had said on the phone. *We're intubating him for airway protection*. On inspection, I can see the tip of the endotracheal tube emerging from his lips, his chest rising and falling mechanically with the ventilator, the slight catch and hiss of plastic tubing providing familiar white noise in the background.

Examining an unconscious patient is technically simple, but undeniably strange: there's an awkwardness that comes with an entirely one-sided interaction, a vague sense of intrusiveness behind every encounter. Standing over B, I can see the faint indent left by the bridge of his glasses, an angular scar bisecting his collarbone. Dried blood printed in the corner of his mouth.

I say his name out loud, as if testing a microphone; then a bit louder, as if summoning him from across a crowded room. No response—only the rhythmic beep of the pulse oximeter, the whirring click of the infusion pump. I clap my hands above his face, a sudden snap of noise that makes the bedside nurse jerk her head in my direction. *No response to voice*. I take 2 latex-gloved knuckles and burrow them deep into his sternum with steadily increasing force, feeling my own jaw tighten; only then does he react, grimacing, eyelids flickering open to reveal a shock of blue irises. *Responsive to pain*.

His wakefulness is short-lived; before I can ask anything else of him, he has drifted back into a sedative-induced haze. I tally up the coma score in my head, wondering how it is that we still rely on these vague, grasping definitions: awake, drowsy, stuporous. How we speak about consciousness but settle for alertness, using numbers to define some vast, unknowable state; like using crayons to reproduce a brilliant sunset, all the texture of light and blazing colors reduced to wax marks on a page.

ii. Cranial nerves

In the fall there is T, a young woman who, several months postpartum, develops bilateral optic neuritis and is reduced to severe and complete blindness within the space of several days. We meet on the ward; her husband is at the bedside, stoic and white-knuckled, describing their surroundings in low whispers. “The doctor's here,” he murmurs, smiling faintly at me.

I ask her to tell me what she can see. “It's all black,” she answers, voice scratchy. My penlight darts across her face, illuminating huge, disc-like pupils, trying to elicit the expected response. They stare back, yawning, impassive. *Pupils fixed and dilated*.

Finding an unreactive pupil in neurology must be similar to how a fireman feels looking at a still-lit cigarette on the ground: a jolt of alarm, a prickly unease. (In our minds, images of aneurysms bursting, optic nerves ablaze, impending brain herniation: something about the windows to the soul being open too wide.)

We start treatment immediately: 10 sessions of plasma exchange, an extracorporeal cleansing. Every morning I search her eyes, documenting my findings. *No light perception* for the first few days, then *HM* for hand motion; *counts fingers at 2 feet*; then 5 feet, then 10. My penlight makes its daily inquiry and is met with surer answers; tea-colored irises blooming new life. She starts seeing colors again: I hold up neon-bright markers, Granny Smith apples, lavender-topped test tubes. I learn that red is the last color to come back. I am in the room when she sees her newborn son again and it's as if I, too, am seeing for the first time, the way a mother looks at her child: a face slackened with relief, the sounds of laughter blurred with tears, a lump in my own throat.

iii. Motor

Just before the holidays we admit S, a 20-year-old engineering student who wakes up from a nap one afternoon unable to move his legs—a swift, senseless thing that offers up no explanation despite multiple rounds of tests. He is young in a way that seems especially unfathomable: T-shirts adorned with video game characters, an assortment of plush toys and flowers dotting his windowsill. The way his head turns automatically to look for his parents even when they aren't in the room. (They, too, seem to live in the hospital, wandering the corridors like ghosts; late one evening I walk past them folded together outside his room, covering their mouths so he won't hear them crying.)

He stays on our ward for a month and I examine him daily, which is how I learn what flaccid weakness is, the way limbs start to look plastic and floppy when they have been immobilized for weeks; seeing muscles atrophy as if in real time, realizing why they call it *wasting*. I swallow the urge to apologize when I test the strength in his legs, looking so hard for even a flicker of activation so that I can avoid having to write, as I have been doing for weeks, *0/5 power in the lower extremities*. My gaze drifts across his face, and I find myself wishing that we could grade for effort on our exams, that we could document the way a patient's eyebrows knit together, jaw clenched with such fury I wonder if it could crack in two.

iv. Sensory

Dr. N, a retired physician, presents one evening with rapidly progressive sensory loss in his legs. A few weeks ago he had gone to bed with a vague tickling in the soles of his feet; by the time we meet, he is wheelchair-bound, unable to walk. I examine him in the emergency department where he used to work, neither one of us acknowledging the strangeness of the situation.

My Tromner swings expectantly, but elicits no reflexes in the arms or legs—only the dull thud of rubber on skin. On sensory testing, he cannot feel the vibration of a tuning fork held

against his great toe, nor at the bony prominence of his ankle. I strike it again and hold it against his knee, reverberating so hard I can practically feel it humming in my sternum. Still he shakes his head.

“Close your eyes,” I tell him, and when he does I begin to see clearly. I watch his outstretched fingers make slow, writhing movements, as if caught in a trance. He stands, swaying violently, unable to put his feet together without toppling over. He walks with exaggerated width, leaning carefully into each step, testing the surface beneath him as one would a fresh rink of ice. *Profound proprioceptive loss*: a body that has no awareness of itself in space, all understanding of position and movement gone, every action now a speculation. Four limbs disembodied. A finding so startling that its recognition strikes a dissonant chord somewhere deep within me: a pulse of excitement, followed by a pinprick of dread.

Our eyes meet at the end of the exam and his expression is plain: *don't B.S. me*. I wonder how many times he has been in my position, sitting in front of a patient, wondering how to translate a finding into a hypothesis. I propose a litany of tests: MRI, lumbar puncture, nerve conduction studies. “We'll sort this out,” I hear myself say. (What we don't say: he doesn't ask if it will get better, and I don't try to tell him it will.)

v. Coordination

In midwinter I meet K, a 43-year-old piano teacher, admitted with several months of worsening imbalance and falls. I introduce myself. Her son sits in a chair by the window, fidgeting with the drawstring on his sweatpants.

I hold up my index finger in front of her and observe her outstretched arm as she reaches for it: wobbling perilously, sailing into the air as if independent of her, missing the tip of my finger by several inches. She moves to touch her nose and overshoots suddenly, hitting the lens of her glasses. *Dysmetria*, from the Greek *metron*, to measure: an inability to judge distance, rhythm, scale. She claps her hands together but cannot achieve a steady tempo; instead it comes out *staccato*, rushing forward, then holding back. A pianist. She laughs in disbelief, staring down at her mutinous fingers, tears pooling in the corners of her eyes.

There is a feeling in medicine, an instinct that develops with experience, something an attending of mine once described as our “sixth sense for badness”: that vague persistent gnawing that signals something is wrong—seriously, irreversibly wrong—with your patient. Inevitably, the diagnosis reveals itself: something advanced, degenerative, inoperable. I am perched on the edge of a hospital bed, trying to explain what seems inexplicable, when my attending's words return to me. *It's always the nice ones*, he had said, shaking his head—a sweeping, if inadequate, attempt to explain a wholly

unscientific phenomenon. I don't think I understood what he meant until I met her.

vi. Gait

I watch M walk, the same way I do every time he comes to the clinic. "Time for the sobriety test," he jokes, getting up from his chair with noticeably more effort than he did at the last visit. Genteel, with heavy-lidded eyes and a hand tremor that has worsened over time, he is the first patient I have followed over years rather than days, someone I have come to think of as *mine* in the same way I am *his*: doctor, patient. An easy, unspoken kind of ownership.

I watch as he shuffles down the corridor, noting the way his shoulders hunch forward, one arm frozen at his side, the other swinging freely. We inch up the dose of his medications, hoping to ease the stiffness on his twice-daily walks. At the end of the visit, I ask how his book is coming along. "Just needs a good ending," he says. He shakes my hand and wishes me good health—our own private joke, laced with his signature irony. *Stable and functioning well*, my scribbled note says. *Follow-up in 6 months*.

This is the way the story ends: M doesn't return for his follow-up appointment. He's been admitted to hospital, the clinic assistant tells me. Some kind of respiratory problem. His chart sits in the slot outside my door, untouched.

(This is the way the story ends: I don't go visit him on the ward. I want to—even looking up which floor he's on, which

bed he's in—but I don't go. Instead I click guiltily through the medical record, searching for fragments to piece together: a fever, positive blood cultures, a haze of white on his chest x-ray. He moves to the ICU one morning, then to another unit, one I've never been to. More x-rays—a nasogastric tube appearing, then disappearing—white cells climbing. Then, abruptly, nothing.)

A discharge summary appears in the record a few weeks later, all events of his hospital admission sanitized into a few sparse lines. *He passed away peacefully*, the report reads, *surrounded by his family*. (That detail—so incongruous, so vital—stays with me for a long time.)

This is the way stories end, I know: suddenly, incomprehensibly, without our knowledge or permission. I have been a doctor long enough to understand that we aren't always afforded closure, but not for so long that I have given up trying to find it; a measure of naiveté, or a mechanism for survival, I'm not sure.

Still, M's story deserves a good ending, and I try to give him one. I picture him in a sun-drenched room, head propped up by pillows, his wife reading to him in a chair beside a big window. His family is gathered all around the bed, knees and elbows touching, a brightness visible in their eyes and on their cheeks. They stay together like this on his last day, one of those warm Saturdays in early spring when it feels like the entire city is awakening from a long slumber, everyone breathing a collective sigh of relief, as if telling themselves, *you made it, the worst part is over, it will all be better from here*.

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