

## Joy Smile

By Clara Baselga-Garriga

I was working with the Neurology team in the Emergency Department on the day I met Isabelle, a woman in her young forties with an aggressive tumor on the left side of her brain. Before walking into her room with the rest of the team, I reviewed the map of the brain I had etched into my memory over the course of the rotation. The brain, I had discovered after hours of looking at its sulci, flipped everything around. The right side of the brain controls the left side of the body. The right frontal lobe, for example, controls movement in the left side of the body. The left frontal lobe, in addition to controlling movement in the right side of the body, is also responsible for production of speech.

“Ok,” I noted to myself, “so this patient will probably have some sort of difficulty talking and moving the right side of her body.”

As a second-year medical student, I felt unsynchronized with the song of the hospital, despite spending hundreds of hours submersed in its enthralling rhythm. On most days, I sweated through my scrubs, got lost getting from the cafeteria to the workroom, and developed calf pain from being on my feet for too long during rounds. On most days, I simply aimed to be on time, learn one new thing, and make at least one patient smile.

I held onto my mental diagram of the brain as the attending opened the glass door, drew the pale brown curtains with mustard and grey stripes, and walked into Isabelle’s sterile cubicle. He entered the room with confidence, disinfecting his hands reflexively by tapping one of the many Purell dispensers glued to the wall. The fellow, resident, another medical student and I followed. The room’s back wall was lined with a blood pressure cuff, otoscope, and oxygen outlets. Isabelle’s bed was lined with our bodies and stethoscopes.

The first thing I noticed about Isabelle was that she didn’t have grey roots. Rather, her hair was a shower of greys, not unlike the ones I tried to hide every morning, on a base of otherwise dark, brown hair. I fixated on those strands of grey and felt my throat close as I processed her youth and the severity of her illness.

The second thing I noticed about Isabelle was that she could understand us but she couldn’t find the words to really express herself. She’d start a sentence, stop, look around as if the term were hidden somewhere in the room, and then give up in frustration. During the physical exam, when we asked her to smile, the left side of her mouth hiked up her face, and the right side of her face lagged behind. When we asked Isabelle to resist our weight against her raised arms, her right arm faltered under our touch.

I scribbled these findings in my notes: “right upper limb weakness, right facial weakness expressive aphasia, mild facial asymmetry.” I felt a fleeting surge of pride at my ability to predict her symptoms based on the location of her brain tumor, followed by an immediate wave of guilt for deriving fulfillment from her symptoms. I often felt this tension in the wards;

the satisfaction of understanding how physiology applied to patients clashed against the pain these diseases inflicted on them.

As we were about to leave the room, the attending saw Isabelle's iPhone screensaver, which featured a cute blonde five-year-old girl reaching towards the person behind the camera with a toothy smile, and asked:

"And who is that?"

"My daughter," she replied, smiling from ear to ear. Her facial asymmetry was gone. I didn't know how to fit that into my mental brain diagram.

Once outside of the room, the attending asked whether we'd noticed the difference in Isabelle's smiles. Did we know why our patient had partial facial paralysis when asked to smile, but could smile symmetrically when she was genuinely happy?

As it turns out, we have two mechanisms for smiling. Our voluntary smile, the one we use in social situations or when someone asks us to "say cheese" for a picture, is controlled by the outer part of the frontal lobe, where Isabelle's tumor was located. By invading that area, her cancer had taken her voluntary or "social smile" away. But we have another smile, the one that we use when we are genuinely happy, the one we don't have to think about putting on, the one that makes our eyes wrinkle. This second "joy smile" is controlled by the limbic system in the brain, which is a much deeper structure.

Isabelle's tumor couldn't reach her joy smile.

Isabelle has been on my mind almost every day since I met her on that frigid November morning. How beautiful it is to have our genuine smile, the one that truthfully captures the essence of our happiness, protected deep within our brain.

At the same time, Isabelle made me start thinking about how much I use my social smile or my joy smile on any given day. The path to becoming a physician, though a dream come true in many ways, is long and, when I let myself admit it, exhausting.

Every day, I snooze my alarm at 4:30 am, and brush my teeth with one hand while I pour Trader Joes' coffee into my cheap Mr. Coffee machine with the other. I walk 25 minutes in the dark to the hospital, feeling my nose go numb against Boston's morning. I step into the residents' workroom and I smile a greeting. I go on rounds and an intern teaches me about platelets. I smile thank you. I walk into a patient's room and I smile good morning. The attending gives me constructive feedback on the hallway outside a patient's room, and I smile in gratitude, promising improvement. On my way out at the end of the day, I walk past the security guard and I smile see you tomorrow. I do not have enough fingers to count the number of times I exercise my frontal lobe to smile politely at everyone and everything. Then, I think of Isabelle. When was the last time my joy wrinkled my eyes and made my face hurt? I remember an old version of myself, bent over in laughter listening to my older brother tell childhood stories in our living room. I remember my face hurting at comedy night with my

best friends in a poor-lit bar in Brooklyn. I remember the genuine joy of wrapping myself in a blanket with a book and a glass of dry red wine.

Though I have enjoyed the weeks spent in the hospital and the weekends immersed in scribbles at the Boston Public Library, on my walk home from the hospital on a Friday afternoon, I realize I miss my joy smile.

“Hey guys,” I text in my roommate group chat, “anyone want to go dancing tonight?” In the Uber on the way there, I thank Isabelle, and feel my eyes wrinkle to the sound of my roommates’ laughter.

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