The Language of Touch

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"Gingerly. Feel it between your fingers. Let the tissue tell you where the plane is." My first day in the operating room as a surgery resident was memorable in ways I did not expect. What I assumed would be a gruesome exercise in anatomy ended up being an intricate lesson in tactile feedback. While my mind was overwhelmed by the dozens of instruments that had suddenly become extensions of my fingers, my sensory cortex was slowly awakening to an awareness of texture, architecture, weight, firmness, wetness, and temperature. An inexperienced intern, blinded by the textbook knowledge methodically catalogued in my brain, I was suddenly discovering the operative world through a Braille-like language. With time, my fingertips exuded a near-magical power that allowed me to distinguish induration from an abscess, a lymph node from a fat lump, cancer from healthy tissue. Using my eyes and fingers, I learned a new language of sensation accompanied by a rich tactile vocabulary. As a ballroom dancer, I intuitively followed the rhythm of traction-countertraction and grasp of the tissue with my attending and operating partner. My hands, my eyes, and my mind were closely joined in a perfect trinity. What once seemed a mush of tissue was now a fountain of information. Experience, I realized, was more than simply doing and seeing; it was about *feeling*.

"Pull. Pull. Pull harder. Well, not that hard. Now you're ripping." Soon enough, my seasoned fingertips and proficient sensorial cortex were at a complete loss, 10 feet away from the patient, facing a wall and isolated in a cold robotic console. What had once been a tactile sensorial experience was now a fervent visual workout. My brain could tell me what the tissue *should* feel like, but my fingers felt nothing. Instead, I relied on translating the response of the flesh, tightly clenched by a distant robotic grasp, into what would otherwise have been tactile feedback. Proprioception was my new Braille. While my hands danced in the air like chaotic choreiform movements, my visual cortex struggled to invent a new language. I have always had my eyes, but never experienced the humbling impotence caused by the inability to integrate sight with touch. I clutched incessantly in an attempt to recreate the trinity that I had experienced up to that point. Surely, as a multilingual writer and surgeon, I could quickly master a new language. Yet the adjectives seemed to be missing, and this unfamiliar vocabulary lacked sensorial richness. What was once a graceful tango for two, now seemed like a solo performance in the dark.

Transposed still again, as warm, fresh blood trickled over my cold hands in the under-lit cath lab, I regained a sense of familiarity. Although my fingertips were numb from the cold water bathing the serpentine wires, I could again feel resistance. It was a type of haptic feedback transmitted through the pressure of a balloon and the twisting of a device that provided warm reassurance. Yet another language, one in which my thumbnail dug deeply into the cushion of my index finger as I held onto a cool metal wire with every part of my being. A pulsatile black and white movie, projected onto large plasma screens, unveiled the bright and winding pathway with each push of contrast. For the first time, the movement of my hands did not translate onto the tissue. Rather, several iterations were needed for a roll to result in a twist. The operating table, in a constant jerking motion, swung along with the camera in a desperate attempt to provide clear views of the aorta and allow my brain to reconstruct its sumptuous 3-dimensionality. As with learning a new vocabulary, I stuttered. I lost grip of the wire. I bent it. I coiled it, at times too gentle, at times too forceful. Slowly, I regained some of the elegance of rhythm and coordination that allowed me to unify my senses into one fluent language.

Surgical residency has transformed me into a sensory polyglot, imparting upon me a wisdom that I have found to be both transient and naive. Yet, as with most things in medicine, triumphs are ephemeral, as time and again, that perfect trinity of eyes, hands, and mind that surgeons strive to achieve is so conspicuously disrupted by the latest technological advances. Nevertheless, as today's practices risk becoming obsolete with time, what ultimately endures is the ability to learn, grow, and adapt. In the end, the exhilaration and dismay of discovering new vocabularies is a

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fundamental part of the training process. Surgical training is, and always will be, in a never-ending flux. It is both the beauty and the frustration of a field that keeps challenging the standard and pushing the boundaries of what is humanly possible. And so, I continue to learn and *feel* my way through residency. Eagerly. Zealously. Gingerly.

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