

CHAPTER I

SEPTEMBER 1936

THE UNCONSCIOUS PATIENT was wheeled from an operating room at the George Washington University Hospital in Washington, D.C., to her bed. Nurses elevated her head to reduce bleeding in her brain. They monitored her temperature, blood pressure, and pulse; they noted that the patient had vomited after surgery and could not control her bladder.

Walter Jackson Freeman, a neurologist and a psychiatrist, stood by her at a critically important moment in his career. He leaned over the patient and began a neurological examination. The patient's pupils were responsive and of equal size. Her face showed no asymmetry or other signs of paralysis. Her knee reflex was normal, and she curled her toes inward when Freeman stroked the soles of her feet. So far, the patient appeared to be doing well.

Four hours later, her anesthesia wore off. Alice Hood Hammatt, sixty-three years old, opened her eyes and focused on Freeman. He was then forty, slightly over six feet tall, solidly built, with a receding hairline and a trim goatee that some of his psychiatric patients enjoyed pulling—and Freeman liked having it pulled. His eyeglasses were scratched from frequent contact with the eyepieces of microscopes. Hammatt offered her hand to him in greeting.

Freeman, speaking in a resonant and slightly nasal voice, asked Hammatt how she felt. Her expression placid, she replied that she felt much better. She appeared better, Freeman thought. That evening, Hammatt was able to name her husband, describe his line of work, recite her address, and identify objects in the room.

Freeman returned to Hammatt's bedside the next day and found her alert and sitting up. Again, she greeted him by offering her hand. Curious

about her emotional state, he asked if she still felt her old fears. No, she replied. Was she sad or happy? Happy, she declared. Did she remember what exactly had caused her such anxiety in the past? "I seem to have forgotten," she said. "It doesn't seem important now." As she spoke, she "continually rolled a paper handkerchief about in her hands, rubbing it about her face and arms as though drying herself," Freeman observed.

Over several days, Freeman watched Hammatt steadily grow more alert and active. She read magazines and could discuss what she had read. Her appetite was good, and she slept well. Most strikingly, she suffered from little anxiety. This, Freeman believed, represented a substantial improvement over her previous condition. Weeks earlier, Hammatt had come to Freeman's examining room to seek help for insomnia, anxiety, and debilitating depression. Emotional problems and nervous breakdowns had plagued her for most of her life. Freeman diagnosed her with agitated depression and checked her into George Washington University Hospital for observation. Her condition deteriorated. She "showed uncontrollable apprehension, was unable to sleep, laughed and wept hysterically," Freeman noted. Under other circumstances, permanent institutionalization in a mental hospital would have been Alice Hammatt's fate. As a patient of Walter Freeman in September 1936, however, she could choose one other course of treatment.

Now the treatment was over. During his visits to Hammatt's bedside, Freeman closely watched her recovery. She did not care about the shaved areas of her scalp and even showed off her bare patches, when previously the thought of having her hair shorn for surgery drove her to distress. The appearance of her anesthetist, which had made her cry out in fear a few days earlier, produced no apprehension now. When her husband entered her hospital room, Hammatt welcomed him with calmness; when he left, she did not panic.

These responses were exactly what her doctors had hoped to see. Freeman and his partner in Hammatt's treatment, neurosurgeon James Winston Watts, "were congratulating ourselves upon a brilliant result," Freeman declared. What they had just accomplished was the first attempt in American medical history to treat a psychiatric disorder by means of surgery on the frontal lobes of the brain. At their hands, Alice Hammatt had received the first lobotomy in the United States.

In Freeman's eyes, Hammatt's case history had made her an ideal candidate for the experimental procedure. A native of Emporia, Kansas, she

was the youngest daughter of pioneer settlers of that state. Her parents spoiled her, and she learned to make her needs known by crying and throwing tantrums. Anxiety and depression left her incapacitated with stomach ulcers and emotional breakdowns.

In her mid-twenties, she married Theodore Dudley Hammatt, an even-keeled and patient man who worked in the Kansas State Department of Agriculture. Her first pregnancy was a nightmare of depression, agitation, and suicidal feelings. The child died at age two, but her next two pregnancies were more bearable, and the children survived. In time, the Hammatts moved to Washington, where her husband accepted a position in the Grain Futures Administration of the U.S. Department of Agriculture. Hammatt's emotional troubles grew worse. A perfectionist as a housekeeper, she distressed her husband and children with her fussiness. The murder-suicide of her sister- and brother-in-law in 1933 added to her stress. She developed a crush on another man, told her husband about it, and became miserable from revealing the infatuation to him. Sometimes she would grimace at herself before a mirror, urinate on the floor, and, standing nude at the windows, expose herself to the neighborhood. In addition, she was a "master at bitching and really led her husband a dog's life," Freeman noted. "She worried if he was a few minutes late in coming from the office and raised the roof when things did not suit her. She was a typical insecure, rigid, emotional, claustrophrenic individual throughout her mature existence." Freeman also found her to be vain, afraid of growing old, and overly concerned about her thinning hair. Alice Hammatt would soon show him how protective of her hair she could be.

For ten years, Hammatt had regularly used strong bromide sedatives to help her sleep. But her insomnia had worsened in 1935 after she and her husband lost their way while driving around New York City. Immediately afterward, "she was highly keyed up and unable to sleep and she had been troubled with sleeping ever since," Freeman noted. Hammatt continued to entertain thoughts of suicide.

In his initial examination of Hammatt, Freeman judged her "rather thin and flabby" but appearing younger than her actual age. She seemed scared and anxious; she wrung her hands and thrashed her limbs during the exam. In a loud and high-pitched voice, she demanded that Freeman explain the purpose of his questions about her general health. After registering her in the hospital for observation, Freeman reexamined a medical journal article written several months before by a physician in

Portugal. The Portuguese doctor, Egas Moniz, described a new treatment he had used on psychiatric patients—and many of those patients had shown symptoms of agitated depression similar to Hammatt's.

The previous year, Moniz and Almeida Lima, a neurosurgeon, had started a series of operations on mentally ill patients in Lisbon. The procedure, which Moniz called leucotomy, involved cutting the neural connections in the prefrontal regions of the brain. Moniz hypothesized that in severing these connections, he was disrupting detrimental emotional responses that had grown habitual in the patients during the course of their disease. Leucotomy, he speculated, forced their brains to develop new neural pathways and more beneficial emotional responses. Freeman, who had read Moniz's descriptions of the procedure in medical journals and corresponded with him, believed that the validity of Moniz's hypothesis "hardly seems to matter since this procedure is reported by Moniz to have cured five out of six patients with agitated depression and to have relieved the sixth to some degree." The results, not the theory, were what counted. Freeman knew that patients with agitated depression—those with the same diagnosis as Alice Hammatt—had in Moniz's account responded better to leucotomy than had patients with other diagnoses.

Since the spring of 1936, when Moniz began publishing his results, Freeman and Watts had been preparing themselves to perform the first leucotomy in the United States. From Paris they had ordered several leucotomes, the surgical tool that Moniz and Lima had used to perform their operations. They had acquired preserved brains from the bodies of cadavers and used the leucotomes to practice cutting the nerve fibers of the prefrontal lobes. Finally, with the appearance of Alice Hammatt, they had a suitable candidate for the surgery. They asked Hammatt and her husband for their consent.

Before making a decision, the Hammatts sought an opinion from their son-in-law, Archibald J. Brier, a physician in Topeka. He, in turn, asked for advice from Karl A. Menninger, soon to become the most famous psychiatrist in the United States. Freeman had known Menninger—as well as his father and brother, psychiatrists who both practiced at the Menninger Clinic in Topeka—for years. "Of course," Menninger later wrote to Freeman, "I was glad to tell him how well we knew you and how highly we regarded you."

With this stamp of approval, the Hammatts agreed to proceed. On the evening before surgery, Alice Hammatt received a preparatory enema. At

the last minute, however, she abruptly withdrew her consent to be operated on. It was her hair. She wanted to keep it and balked at having her scalp shaved. "We got around her objection by promising to spare the curls if we could," Freeman wrote. He knew that sparing her hair would be impossible. The next morning, September 14, an anesthetist arrived to give her a dose of Avertin, a common anesthetic that produced unconsciousness. Her anxiety spiked once again. "Who is that man?" she cried. "What does he want here? What's he going to do to me? Tell him to go away." She struggled in bed so wildly, Freeman reported, that the staff "was scarcely able to control her sufficiently to administer the Avertin by rectum." The anesthetist bolstered the Avertin with a dosage of nitrous oxide gas. Then her head was shaved back to the ears.

Meanwhile, Freeman and Watts grappled with the significance of the step they were about to take. "I realized when I did the first operation that I was taking a big risk," Watts recalled. "In other words, . . . I'd been considered by people to be conservative. I knew as soon as I operated on a mental patient and cut into a physically normal brain, I'd be considered radical by some people." But a radical image appealed to his partner. The grandson of a famous surgical innovator, Freeman rushed toward controversy with the enthusiasm of a man determined to make his name as the slayer of a millennia-old scourge to humanity.

Freeman and Watts went to work on Hammatt. Behind their surgical masks, they made an unusual pair: Freeman, whose intent movements and unflagging energy revealed his determination to break new ground in medicine, and Watts, a baby-faced and laconic surgeon whose conservative orientation made him cautious of undertaking a radical operation. Taking turns performing the surgical duties, they closely followed the procedure that Moniz had described. They first cleaned the scalp. Using gentian violet, they daubed the scalp to show the location of the two holes they would cut in the skull. They made incisions 3 centimeters in length into the violet markings, stopped the bleeding with mastoid self-retaining retractors, and, using an auger, made holes in the skull over the left and right frontal lobes. They then inserted a leucotome 4 centimeters straight down through the hole on the left side into the exposed surface of the brain. The tissue had the consistency of warm butter. Pressing a stylet at the top of the instrument caused a wire loop to protrude from the other end. They rotated the loop a full circle and cut a round core of white neural fibers. Next they withdrew the loop back into the leucotome, pulled

out the instrument a single centimeter, and cut another core. A third core was scooped at a depth of 2 centimeters.

After removing the leucotome from the brain, they reinserted it into the same hole but at a different angle and cut three more cores. They withdrew the leucotome and inserted the instrument into the hole over the right hemisphere, cutting three more cores, followed by another three at a different angle. The last cut, however, sliced a blood vessel that had been caught in the loop. A hose sucked away the surging blood as they untangled the vessel from the leucotome. After a total of twelve cores had been made, the operation was over. The patient's vital signs showed no indication of distress. The doctors washed the incisions with saline solution, used black silk sutures to seal them up, and bandaged the site. The operation had lasted about an hour.

Freeman felt confident in his diagnosis and selection of Hammatt as the first leucotomy patient. He had faith in their mastery of the technical aspects of the surgery and, most of all, in the outcome. As she lay in bed postsurgery, Alice Hammatt was calm, not obviously impaired mentally, and recovering rapidly. Word got back to Menninger in Topeka that "visitors have found her much improved immediately following the operation." He asked Freeman to fill him in on the details of this new treatment.

Six days after the operation, however, Freeman received an unpleasant jolt when Hammatt suddenly became disoriented and excited, and began stuttering. Although she seemed to understand what others said, words came to her with difficulty. Freeman's examinations showed "symptoms indicative of frontal lobe deficit but no paralysis or disturbance of sensibility." A few days later she was able to page through magazines and draw pictures—she misspelled words in her labels of her drawings—"but she cannot yet write legibly or carry on a conversation." Freeman was concerned that Hammatt seemed "almost too placid," and she resumed the odd "rubbing and rolling movements" she had shown soon after the surgery.

Freeman speculated that swelling or hemorrhage in the areas of the severed fibers were responsible for this setback, and with relief he noted that Hammatt gradually returned to normal with the passage of several more days. He believed it was too soon to determine whether she would show any permanent changes in her personality or brain function, "but the agitation and depression that the patient evinced previous to her operation are relieved," he declared. A quarter-century later, Alice Hammatt's

operation still shone brightly in his memory. "The result was spectacular," he wrote.

She soon could speak normally and walk without difficulty. She said she looked forward to leaving the hospital. When Hammatt at last did go home, she was able to sleep without medication and live without a nurse's care. Freeman found that Hammatt could direct the operation of her household, "although her husband and her maid did most of the work. She was rather shrewish and demanding with her husband, outspoken with her friends, and unselfconscious." But Hammatt noticed a distinct change in her level of anxiety. "I can go to the theatre now and not think whether my shoes pinch or what my back hair looks like, but can really concentrate on the show and enjoy it," she said. She worried little, could think without distraction from anxiety, gained enough patience to spend time with a friend whose energy formerly exasperated her, and "was content to grow old gracefully," Freeman observed in her examinations after she left the hospital. "She was well dressed, talked in a low natural tone, volunteered relatively little, but upon questioning showed excellent appreciation of her changed condition." The changes were also noticeable to her husband, who thought she behaved more normally than ever before. He called the next five years the happiest of his wife's life, and they may have been the best of his own, as well.

Freeman and Watts lost little time in reporting Hammatt's treatment to their colleagues. Just a week after her discharge from the hospital, seventeen days after the surgery, they recounted the details of her case to members of the District of Columbia Medical Society. The meeting was one of the most raucous in the organization's history. When Freeman implied that the operation had relieved Hammatt of her symptoms, cries of protest arose from the audience. "Walter, you can't say that!" exclaimed Dexter Bullard, the director of a nearby psychiatric hospital. Others, roaring their agreement with Bullard, thought that the trauma of surgery, not the cutting of neural fibers, might have shocked Hammatt into a temporary remission. But Freeman and Watts were certain of their conclusions. Within a few weeks, their paper on this use of prefrontal lobotomy appeared in the *Medical Annals of the District of Columbia*.

Freeman, speaking later to a meeting of his colleagues in the medical school at George Washington University, explained the effectiveness of the surgery in terms that excluded the possibility of surgical shock and in terms different from those Moniz had used. Relief came to Hammatt, he

thought, because the disruption of neural activity left her less distracted by her anxiety and the pressure of her disturbing thoughts. The anxiety was still there, he speculated, but Hammatt simply noticed it less and was thus allowed to direct her thinking along more useful lines. He acknowledged certain side effects resulting from the surgery, most noticeably the disappearance of the patient's spontaneity and an absence of initiative in starting conversations and taking physical action. But Freeman declared that the benefits of the new operation far outweighed any detrimental consequences.

In the seven decades since Alice Hammatt's surgery, research on the brain has shown that Freeman's explanation of the role of the frontal lobes in amplifying anxiety was not far off the mark. Today's neuroscientists see the frontal lobes as a gatekeeper of sensation and a regulator of emotion, the hub of decision making and planning. Humans have the most fully developed frontal lobes in the animal kingdom, and recent studies have demonstrated that people with frontal lobe damage suffer harm to their insight and their recognition of their own defects. By disrupting the links between Hammatt's frontal lobes and other regions of her brain, Freeman and Watts may very well have succeeded in reducing her ability to feel and act upon her anxieties. Unable to develop her anxious feelings into a conscious sensation that demanded socially unacceptable responses, Hammatt may have simply let them drift and fade.

Some months after surgery, Hammatt suffered a convulsion likely related to her surgery, fell, and broke her wrist. Her injury darkened her contentment. For a time, "she became more indolent and sometimes abusive," Freeman noted. But she continued to live with reduced anxiety, and she stayed out of mental hospitals. Five years after her lobotomy—the term Freeman and Watts eventually applied to their psychosurgeries—she contracted pneumonia and died at age sixty-eight on September 28, 1941.

By the time of her death, hundreds of other patients around the world had undergone lobotomies and similar operations. Alice Hammatt's lobotomy was the opening shot of a battle that would convulse the world of psychiatric medicine in the years to come. For a time, Walter Freeman and his allies—a prestigious coalition of psychiatrists, neurologists, and neurosurgeons—would appear victorious in pulling lobotomy into the mainstream of medical practice. In the United States alone, the number of lobotomized patients would soar to about forty thousand over the next four decades, and Freeman would take part in nearly thirty-five hundred

of these surgeries. Many patients would receive discharges from psychiatric hospitals, and on their return home would either elate or annoy their families with their changed behavior. Some operations failed and left patients to grapple with profound inertia, debilitatingly childish behavior, convulsions, and incontinence, all on top of their previous psychiatric disorders. In other cases, patients felt relieved of their symptoms and returned to places of responsibility in their families and careers. Eventually, however, the development of new forms of treatment would send lobotomy into a precipitous decline. Throughout it all, Walter Freeman remained a forceful proponent of the procedure. A lover of battle and controversy, he advanced the cause in fights against hospital administrators, Freudian psychoanalysts, and even his closest partner. Only Freeman's own death silenced his advocacy of lobotomy, long after the operation had acquired an overpowering array of opponents.

In September 1936 and the weeks that immediately followed, Freeman merely knew that lobotomy held great promise. Others agreed, sensing that the ground had just shifted in the treatment of mental illness. "I felt somehow that we were in the presence of one of the milestones of modern medicine; I have seldom been more stirred," John Farquhar Fulton, a renowned Yale physiologist who knew both Freeman and Watts, noted in his diary after hearing an account of the operation. He hoped that the two men would "keep their feet on the ground and stay away as far as possible from the publicity the procedure is almost certain to bring. It will throw the psychiatrists into a convulsion and I am sure there are very few open-minded enough to accept the procedure in the spirit in which it is being proposed."

If Fulton ever directly expressed his cautions to Freeman, the neurologist ignored them. By disposition, Freeman felt compelled to work in solitude and to disregard the warnings of others. His upbringing and childhood experiences had taught him to act boldly with little concern for the consequences.