



Piece *of* MIND

There are mental illnesses
so terrifying that
victims will do anything to
set themselves free—
even submit to a
medical practice once
considered barbaric

BY SARAH SCOTT

ILLUSTRATION BY DEREK LEA

Kathleen

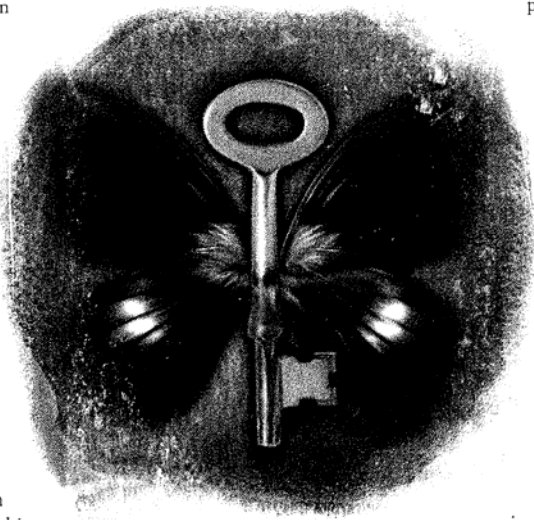
BENNETT KNOWS THAT THIS IS going to be a strange morning. For one thing, her head is encased in a steel cage, a contraption used to stabilize her during brain surgery. She is in a giant Boston hospital, on a stretcher being wheeled through a maze of corridors toward Operating Room 27, where she will undergo an operation that's a little out of the ordinary, and more than a little controversial.

Operating Room 27 is located in one of the world's most sophisticated research hospitals, the Massachusetts General Hospital, which is affiliated with Harvard Medical School. In the minutes before her surgery, Bennett allows herself one self-deprecating quip: "Do I look weird?" she says, her slightly bloated face peering out of the cage. "I feel like the guy in *Silence of the Lambs!*"

Bennett smiles weakly. She isn't quite as cavalier as she makes out. In fact, she desperately wants this operation, and for the past couple of years, she has lobbied to be one of the handful of patients chosen each year by the Harvard team for this brand of psychosurgery. She'll try anything to escape from her mental prison, where for most of her 35 years she's been consumed by the tyranny of doubt.

On most days she's on the lookout for anything remotely connected to Carbondale, Pa., a small coal-mining town where she spent an unhappy couple of years at school. It wasn't anything in particular; she was only in Grade 8 at the time, and she remembers being picked on by a group of boys. But in the irrational universe that is mental illness, a seemingly trivial place or event can often assume a disproportionate importance. For most of her adult life, anything that seems connected with Carbondale or even Pennsylvania has been contaminat-

ed, and if she touches it, she gets anxious and shaky. Her only relief is to wash. She has to wash anything the contaminated object may have touched – and that includes outdoor stairs, the walls of her apartment, money, the washing machine. She has to wash in a ritualistic way, according to an exacting set of rules. It is a mental sickness, called obsessive-com-



pulsive disorder (OCD), and it has taken over her life. Until recently she couldn't touch money or the mail, ride public transit or sit in a chair outside her home. She is confined pretty much all of the time to an apartment, hoping that no pieces of paper will fly onto her porch.

Bennett is eager for this operation, which she hopes will help free her from this mental prison, although she knows some people find the procedure barbaric. This is psychosurgery, a procedure called cingulotomy, but it is a modern-day version of an operation with a much more sinister name: lobotomy. As she is being wheeled into the operating room, she says two private prayers to herself. The first one: "Please, Lord, let this work."

The second prayer that goes through her mind: "Don't let him make a mistake." She's thinking about a man she has only just met, a 43-year-old neurosurgeon from Montreal who's about to bore two holes in her brain. Dr. Rees Cosgrove is a medical hotshot who trained at the Montreal Neurological Institute and came to Boston in 1986 to be at the forefront of research into the science of the brain and the mapping of its functions. Now he's about to perform an operation that's technically easy but socially and medically contentious. He's going to burn two holes the size of a dime in the part of her frontal lobes that is supposed to have something to do with emotional response.

The cingulotomy may relieve Bennett of her strange obsession with contamination and her compulsion to wash (the operation is used today mainly to treat OCD and clinical depression). But stranger still is the fact that Cosgrove doesn't know how the procedure works, or why. The human brain is still far too mysterious. He only knows that about 30 per cent of the people who have this surgery experience "significant improvement," and 60 per cent notice "mild to moderate improvement." He doesn't know if Bennett will be one of the lucky ones.

BEING WHEELED INTO an operating room is a vulnerable and peculiar moment in anyone's life, all the more so when both surgeon and patient know that the operation in question has such a notorious past. The field of psychosurgery was launched half a century ago by the lobotomy, a crude operation inflicted upon tens of thousands of mental patients in the 1940s and 1950s before the appearance of a new wave of drugs relegated more invasive surgical practices to the basement. During that period, the surgery left an indelible impression, not only on the

Patients have been followed for years after the operation; no decline in intellect or unwanted changes in behaviour have been detected.

patients but on the general public: Think of the vacant stare that came over Jack Nicholson's eyes after he was put under the knife in *One Flew Over the Cuckoo's Nest*. Yet the real impact of lobotomies in their heyday varied according to the patient and the operation. Many agitated patients did get considerably better, and sometimes even returned to normal life, says Elliot Valenstein, a professor of neuroscience and psychology at the University of Michigan and the author of one book and numerous articles critical of the practice of lobotomy. The worst cases, however, became prone to impulsive acts or inert. Some became sloven-



Most of us know about lobotomies only from the movies: (above) Jack Nicholson in *One Flew Over the Cuckoo's Nest* (1975); (right) Elizabeth Taylor in *Suddenly, Last Summer* (1959).



ly; many lost their drive, their ability to plan ahead, their insight. Patients often lost the ability to grasp abstract concepts, like the patient who was interviewed during his operation by Dr. Walter Freeman, the American neuropsychiatrist who made lobotomy his personal crusade. "What's going through your mind?" Freeman asked. The patient's answer: "A knife." Freeman was lambasted for robbing patients of a key part of their intellect, but he responded in typically blunt fashion: "Even if a patient is no longer able to paint pictures, write poetry or compose music, he is on the other hand no longer ashamed to fetch and carry, to wait on tables or make beds or empty cans."

Cosgrove knows the history well. He even has slides of the early lobotomists

and their tools, slides he uses at scientific conferences to explain the strange evolution of the operation he now performs. The lobotomy was invented in 1936 by Portuguese neurologist Dr. Egas Moniz, who won the Nobel Prize for the discovery. Freeman brought it to the United

States and became its most enthusiastic salesman. It was used to treat a wide variety of mental illnesses, including schizophrenia, depression and anxiety disorders. The flagship operation was the prefrontal lobotomy. The surgeon would insert a flat knife into the frontal lobes, just in front of the ears, and jiggle it around. It caused massive destruction to the frontal lobes, the seat of the brain's executive function, which is important for planning, creative thinking and control of behaviour. Freeman said it would help the patient because it would sever the thinking part of the brain from the feeling part. Then he invented a gruesome twist on the classic procedure. Following a round of electroconvulsive therapy, he took an ice pick and shoved it just above the eye under the lid, where the skull is paper thin, into the frontal lobes. He didn't even administer anaesthetic. "He went nuts," says Cosgrove. "He would do it on anybody willing to sit still, and he did it for a price, feeding his pocketbook and his ego." As a surgeon obsessed with precision, Cosgrove is still appalled as he remembers seeing the operation on a TV documentary: "It was the most gruesome thing."

The 6-per-cent death rate plus the dreadful side effects, including seizures and profound personality changes, induced American doctors to come up with a more refined procedure that targeted the cingulate gyrus, a thin ribbon of grey matter that's believed to play a role in our emotional response to ideas or events. The rationale was based on a 1937 paper, "Proposed Mechanism of Emotion." The author, James Papez, speculated that a circuit in the brain, which includes the cingulate gyrus, is "nothing less than the means by which emotions are expressed and felt."

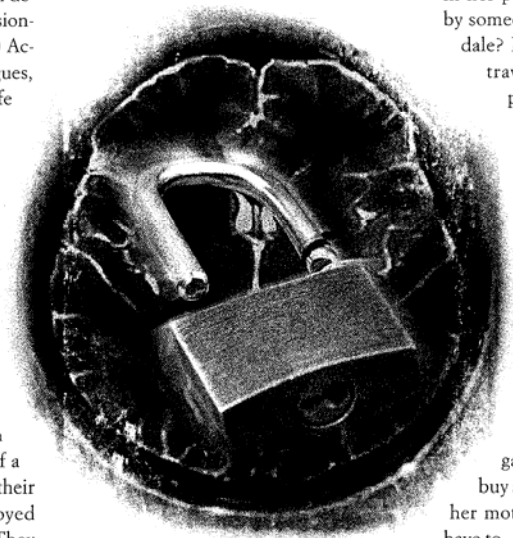
Cosgrove quotes that paper as he explains the rationale for today's cingulotomy. It's based on the same premise as

Of the 50 who apply each year, one-third are accepted. The candidates an Oliver Sacks book: the poet who banged her head against the wall,

the one for lobotomies – that destroying part of the brain may relieve mental sickness. Thanks to advances in medical technology and research, it's now far more precise and safe. Even so, the procedure is performed rarely in the US and Canada. Mass General is the hospital that has done the largest number of these operations in the United States – more than 900 cingulotomies since 1962, about 75 of them by Cosgrove. (Cosgrove's predecessor, the late Dr. Thomas Ballantine, insisted on continuing the operation despite widespread public and professional revulsion against psychosurgery.) According to Cosgrove and his colleagues, cingulotomy has a surprisingly safe track record. No one has died from it. Patients have been followed for years after the operation, and no decline in intellect or unwanted changes in behaviour have been detected as a result of the surgery. But Dr. Peter Breggin, a Washington-based psychiatrist and author, dismisses that reassuring claim. "It's a form of lobotomy" which has never been proven effective and is very dangerous, he says. In the 1980s, Breggin says, he saw half a dozen of Ballantine's patients after their cingulotomies: "They were destroyed – apathetic, blunted, indifferent. They couldn't think ahead. They were very badly injured human beings." Yet these cases, Breggin says, were never included in the outcome studies.

Another question is whether psychosurgery works as a remedy for mental illnesses such as OCD. Dr. Michael Jenike, a Boston-based authority on the disorder, says psychosurgery is "pretty much oversold" as a cure for OCD. He believes that most practitioners around the world exaggerate its benefits and underplay the side effects. A lot of the published results are questionable, Jenike says, partly because there are no studies comparing patients who had surgery with those who didn't.

FOR BENNETT, THERE is no choice: Surgery is the last hope. She and her mother are sitting on a park bench, watching sailboats catch a brisk wind on the Charles River. Kathleen has chosen her name for this article; she doesn't want people to know that she's had psychosurgery. She's taking a break from three solid days of tests designed to confirm her diagno-



sis and assess her mental functions before the operation. Her hands fidget as she and her mother talk about trying to avoid the contamination that springs from Carbondale but moves so easily – with money, envelopes, even people. She makes elaborate plans to avoid contamination, but they are frequently crushed by doubt: Did she accidentally brush against something contaminated? Might she have? If she did and washed it off, did she wash the correct number of times, and in the correct way? The slightest doubt means starting all over again, even if it means washing well after the hot water has run out. Bennett and her

mother tell a string of anecdotes that sometimes make the two of them laugh at the absurdity of it all. Like the time that Bennett kept her family waiting for two hours while she carefully washed each stair leading from her apartment. Or the time she made her mother literally launder money. A psychologist in Pennsylvania tried behaviour therapy on Bennett but it only made things worse. The psychologist had challenged her: How did she know that the coins in her pocket had never been touched by someone who had been in Carbondale? From then on, Bennett used traveller's cheques and avoided public seating.

In 1995, Bennett moved to Georgia to escape, but it was no use. She still couldn't touch money or anything else that might have travelled through Pennsylvania. One day she discovered she'd been reading a book that had been printed in that state. She had a cleaning fit and threw out all of her clothes. She had to dress herself in curtains and garbage bags to go to the store to buy something to wear. Bennett and her mother laugh at the image. They have to.

IT IS COUNTERINTUITIVE to think that destroying part of the brain, even just a little bit of it, would cure a patient like Bennett of her obsession with Carbondale and her compulsion to wash. Freud would have said that her obsession stems from childhood, possibly from early toilet training. Today's sophisticated scans, however, suggest otherwise. They reinforce the view that those with OCD are tortured by a reverberating circuit in

sound like chapter headings from the man who plucked his eye out.

their brains, a circuit of cells linked by electrical impulses and chemical reactions. Some of the most revealing scans show the brain in action as its cells consume sugar.

After examining Bennett, Scott Rauch, a psychiatrist and a member of Cosgrove's cingulotomy committee, uses positron-emission tomography (PET) scans to explain the latest findings. The scans show, in vivid colour, a circuit that lights up in OCD patients. When OCD patients are provoked and get anxious, this circuit jumps into high gear; after treatment, it becomes less active. Part of this loop is the cingulate gyrus, the target of Cosgrove's surgery, although it may not even be the most significant part. So why does Cosgrove target the cingulate gyrus rather than other parts of the worry circuit that may, according to the PET scans, be more directly involved in OCD? "Even though we still don't understand why these lesions help," says Rauch, "there's empirical evidence to suggest that they are both clinically effective and relatively safe."

In other words, Cosgrove and his team don't really know. Which makes you wonder how this Montrealer, the son of a prominent neurologist who worked with the great neurosurgeon Wilder Penfield (the first to map out the brain according to function), got into this business. Cosgrove is articulate and thoughtful, a sandy-haired man with clear blue eyes who always knew he'd be a doctor or a teacher and chose neurosurgery because it is so demanding. In this business, mistakes cannot be made; errors cannot be corrected. Cosgrove is gentle with patients, passionate about his work, eager and serious in the operating room. But he still likes to joke with colleagues to lighten the tone as he marches through a typical lunchless 12- to 14-hour day. He's no salesman for psychosurgery. He started doing the operation when he joined Mass General because Ballantine had retired and no one else wanted to take his place. It took a lot of guts, more than he anticipated. Driving to work in his Alfa Romeo, Cosgrove could hardly avoid the protest banners put up by the Church of Scientology just outside the hospital: "50,000 Destroyed by Lobotomies and Mass General Still Does It!" the signs screamed, with a big arrow pointing in the hospital's direction. Cosgrove dismisses the complaint as leftover antagonism against the old lobotomies, not the modern-day cingulotomies that he does. But he still has to contend with threatening e-mails and letters accusing him of doing something barbaric. It's so unsettling that he didn't want to be photographed for this article. And when cingulotomies are less than 5 per cent of his practice, Cosgrove can't help but ask himself why he should do it: "Why do something that puts you or your family at risk?"

Cosgrove doesn't pretend that cingulotomies are the magic cure for mental illness, especially when only 30 per cent of patients improve significantly: "I have many doubts. I never like doing something if I'm not sure how it works and I don't know why it works. I have enough doubts to think it shouldn't

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Dr. Cosgrove is chatting about the operation with Kathleen, who by hand-operated instrument to drill two small holes into her skull.

be adopted widely." He continues to perform the surgery because it seems to be the only hope remaining for patients like Bennett, who have failed to respond to everything modern psychiatry can offer. "Either you abandon them, or you say: We can salvage one-third."

Cosgrove is cautious, even wary, in his approach. In order to ensure only those who might benefit from surgery are accepted, Cosgrove and his colleagues have devised an elaborate system to select patients. A cingulotomy assessment committee, made up of Cosgrove, three psychiatrists and a neurologist, assesses all prospects. Of the approximately 50 who apply each year for the procedure, only one-third are accepted. Three days before Bennett's surgery, the team met in a conference room decorated with butterflies and pictures of sailboats to discuss the prospective cases. They sounded like the chapter headings of a book by Oliver Sacks: the poet who banged her head against the wall, the man who plucked his eye out. Cosgrove listens intently. "As a neurosurgeon, you learn the art of detachment," he had said before the meeting started. "But in 20 years, I've never experienced the suffering these people have. It's an internal suffering, a horrible loss of control." As the stories are told, the physicians around the table are sympathetic but cautious. There are always people desperate for the surgery who do not qualify to receive it. The committee accepts only patients who have tried the appropriate drugs and behaviour therapy – the treatments of choice for OCD – and who are still chronically sick: people like Kathleen Bennett.

THE DAY BEFORE SURGERY, Bennett, her parents, and one of her sisters finally meet Cosgrove. They're sitting in his office, a small room decorated with a drawing of Wilder Penfield, the usual certificates, pictures of his family and a small human

tomy because the first one "had only temporary benefit."

Cosgrove doesn't wait for the questions about safety: "I think it's safe. She's an intelligent, beautiful person and we don't want to make her worse."

"I hope not," says Bennett, scrunching up her face.

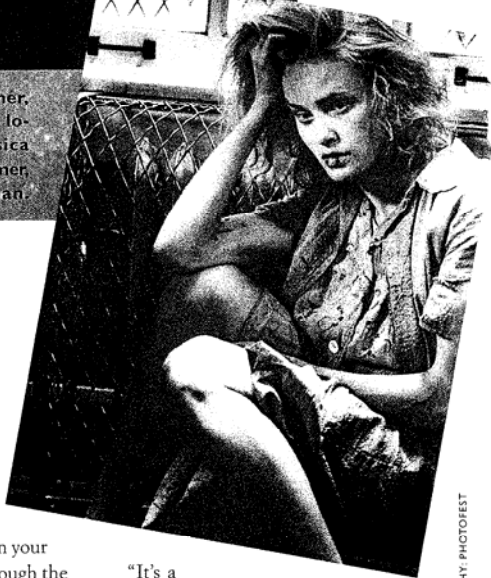


(Above) Rosemary Kennedy, here with her father, Joseph, patriarch of the political clan, had a lobotomy in 1941; (right) In *Frances* (1982), Jessica Lange played actor and activist Frances Farmer, who was lobotomized by Dr. Walter Freeman.

skull. "The surgery is straightforward," says Cosgrove. "Nothing complicated, only mildly painful when we freeze your scalp."

Bennett will be only slightly sedated and may remain awake during the operation. "It's no worse than going to the dentist," he says, "but you can talk because I won't have my hands in your mouth." He walks the family through the operation and warns them not to expect immediate results; in fact, nearly half of the patients need a second cingulo-

"It's a bloodless operation," Cosgrove continues. "The risk of intellectual cognitive impairment or personality



PHOTOGRAPHY: PHOTOEST

now has fallen asleep, as he's handed a simple, "Another little grinding sound," he tells her.

change is exceedingly small for craniotomy." Five per cent of patients suffer seizures, but these can be controlled with medication. Bennett does not seem concerned: Compared with a life trapped by OCD, brain surgery looks like a snap.

There is a mirror in Operating Room 27, and beside it is a sign where someone has scrawled a little ditty for Cosgrove:

The daily Cos affirmation mirror:

I'm good enough

Strong enough

Smart enough

Gosh darn it, I can respect that lobe

And speak Creole to boot.

It's wiped off by the time Bennett is wheeled into the operating room where Cosgrove usually works. Her head is stuck in the steel frame. This contraption, along with pictures of the brain, taken in a giant magnetic resonance imaging machine and then loaded into a computer, will ensure that Cosgrove hits the target with extraordinary precision. Cosgrove is waving his hands in the air to dry them after carefully washing from elbow to fingernails. "You'll see a lot of obsessive-compulsive behaviour in everything we do," he says.

"The surgery is the easiest part," he says, as he shaves a band just behind the hairline on top of Bennett's head. "But take that with a grain of salt. It comes from a neurosurgeon."

Cosgrove is chatting about the operation and talking to Bennett, who by now has fallen asleep, as he's handed a simple, hand-operated instrument to drill two small holes in her skull. "Another little grinding sound," he tells her.

"This looks archaic," he tells me, "but it's much better for the patients than an electric drill that resonates in their head."

"That's all the funny sounds, Kathleen." He hooks a long, blunt, needlelike electrode to the steel frame and slides it into the right hole. "All right, Kathleen?" She's still sleeping. The tip of the electrode is heated to 85°C for 60 seconds to gently cook a tiny part of the brain.

That's it. "No bells, no whistles," says Cosgrove. He does it two more times to enlarge the hole slightly before moving to the left side. "We're doing something pretty crude when you think about it," he says. Especially when you consider the awesome complexity of the human brain. "It is much more complex than even we think it is."

When it's all over, Bennett wakes up. "You did very well," Cosgrove says.

"How did you do?" she asks.

"I think we did OK."

Moments later in the recovery room, Bennett has a small smile on her face. Sometimes patients feel more relaxed after the operation, "maybe because they're so happy it's over," says Cosgrove. But they can't expect to see any real change for at least six weeks, and then sometimes only with more behaviour therapy. He can hear Bennett telling the nurse her story about Carbondale.

"No one can say we altered her mind and her personality."

POSTSCRIPT: It's three months after the surgery, and the phone rings. Bennett is calling. Her voice sounds strong, even relaxed. She's better. She isn't sure if it's because of the operation, but she does know that she's on less medication now and that it's easier to do the things she practised in behaviour therapy: "I can pick things up from the floor, and shake hands," she says. She can use a public telephone and pay for things with money, without worrying about whether the coins or paper passed through Carbondale. Bennett says she can even see the day when the town that used to haunt her will be just another name on the map, and she's taken a big step in that direction. She's moved back to Pennsylvania. 🍷

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