

Doctors perform life-changing surgery on woman plagued by internal sounds of her body

September 2 2015



UCLA patient Rachel Pyne listens to her surgeons Dr. Quinton Gopen and Dr. Isaac Yang discuss her second surgery to patch a small hole in her inner ear.

The sounds in Rachel Pyne's ears were deafening and inescapable. Her

footsteps rumbled through her head like thunder. She could hear the thump of her heartbeat, her food digesting, and even the shifting of her eyes.

"It was crazy," said Pyne, who started hearing her body's internal sounds in March of last year. "I could hear my eyes swoosh around as I moved them back and forth, like moving your hand in water."

Pyne also began to lose her balance and suffer debilitating dizziness and nausea. It wasn't long until her symptoms affected every aspect of her life. "I couldn't fall asleep. I would lie there and wish that my head would stop spinning," she said. "It was chaos in my ears."

At 27, Pyne, a photographer from Merrillville, Indiana, had developed a rare condition known as superior semicircular canal dehiscence, or SSCD.

"Basically, it's a hole that develops between the inner ear and the brain," said Dr. Quinton Gopen, an ear surgeon in the department of head and neck surgery at Ronald Reagan UCLA Medical Center. "That region of the inner ear has sealed compartments with little fluid chambers, and occasionally a hole will develop in the bone and allow for these problems to arise."

Because SSCD is such a rare condition, affecting an estimated one person per half million, patients often see several doctors before receiving a correct diagnosis, if ever. Pyne was examined by at least nine doctors and specialists all over the country, most of whom attributed her symptoms to migraines.

"One doctor told me I was just going to have to live with it," Pyne said. "That was devastating."

According to Gopen, this type of misdiagnosis is common. "A lot of these patients are seeking psychiatric help because they're just mentally worn out," he said. "They can't escape the condition and it really kind of grinds them down."

After seven months, Pyne had almost given up until she came across an online support group launched by a former patient of Gopen and his colleague, Dr. Isaac Yang, and learned about their approach to cases like hers. Last September, Pyne flew to Los Angeles to be examined by Gopen.

"Dr. Gopen diagnosed me within 15 minutes and said, 'Absolutely we can do surgery.' I was crying because I had been through so much," Pyne said.

"Patients are relieved to learn that this situation has become routine to us," said Yang, a UCLA neurosurgeon who partners with Gopen on each SSCD procedure. "Because we see a lot of these cases, we not only believe them when they say they can hear their eyeballs or neck muscles move, but we can help them."

After five years of operating on more than 60 SSCD patients together, Gopen and Yang have developed a minimally invasive surgical technique that patches the hole in the inner ear, restoring normal balance and hearing.

"Traditionally, you'd need to have a big middle fossa craniotomy," said Yang. "That's a type of surgery that requires a sizeable hole in your skull, which leaves a larger scar and requires a much longer recovery time."

"What we're doing now is performing the entire operation in a hole the size of a dime," said Yang, noting that in a standard middle fossa craniotomy, the hole is as much as five times larger. "That allows these

patients to get back to work and get back to their lives much sooner."

Recovery time is three weeks instead of six.

Before the operation begins, the surgeons use a CT scan and state-of-the-art probe to map the brain and determine precisely where to enter the skull.

"Our neuro-navigation system is like using GPS for the brain that allows us to target that itty, bitty hole between the inner ear and the brain," Yang said.

"These holes in the bone are only a millimeter or two wide," said Gopen. "That's about the size of the hole in the tip of an ink pen, so we really need to be precise and know exactly where we're going."

Working in tandem, Yang opens the skull and lifts the brain away from the skull, which allows Gopen to access the space in between the ear and skull. Then Gopen pinpoints the tiny hole in the [inner ear](#) bone and plugs it with an artificial filler called bone wax. The entire procedure lasts roughly 90 minutes, and results are usually instantaneous.

"As soon as I woke up from surgery I was like, 'Oh my gosh, it's gone!'" said Payne, who had her first surgery last November. "Looking back, I'm actually happy that so many doctors turned me away and told me they couldn't help, because Dr. Gopen and Dr. Yang did. I'm just so thankful."

Provided by University of California, Los Angeles

Citation: Doctors perform life-changing surgery on woman plagued by internal sounds of her body (2015, September 2) retrieved 20 April 2024 from

<https://medicalxpress.com/news/2015-09-doctors-life-changing-surgery-woman-plagued.html>

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