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health, science, technology

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DAVID BUSBY/TIMES DISPATCH

Pres{within}sure

An often-debilitating neurological illness frequently goes unrecognized, but shunts have a good success rate

BY JILL SAKAI

TIMES DISPATCH STAFF WRITER

Upon arriving at VCU Medical Center, Steve Passalacqua shuffled slowly down the clinic corridor, every step a pronounced effort.

Two hours later, the Chesterfield County resident, 83, walked down the same hallway at a brisk clip. Given a chair, he sat down and popped up again with ease.

Watching from the end of the corridor, his wife, Ruby, gasped at the difference. "That's amazing," she whispered. "It makes me want to cry."

Passalacqua was visiting Virginia Commonwealth University's neurosurgical center for treatment for hydrocephalus, a condition in which fluid builds up in the brain and exerts abnormal pressure on the brain and the spinal cord.

Despite the availability of diagnostic tests and treatment, this often-debilitating neurological disease frequently goes unrecognized.

Passalacqua's dramatic improvement resulted from a spinal tap, during which doctors checked his fluid pressure and ran tests. After the procedure, they drained the extra spinal fluid to relieve the pressure temporarily.

Even Passalacqua seemed surprised by the change. Before, "I couldn't walk that fast," he said.

Optimistic about the test results, the doctors decided Passalacqua was a good candidate for treatment. He recently underwent surgery.

Hydrocephalus can be caused by a head injury or tumor. A type common in the elderly, called normal

What Is It?

Normal pressure hydrocephalus is common in the elderly. It affects an estimated 375,000 adults in the U.S.

- It causes increased pressure in the brain, which can disrupt function. Symptoms can include difficulty walking, dementia, urinary incontinence, dizziness, headaches, tremors, and loss of memory and vision.
- Common treatment is implantation of a shunt through a small hole in the skull. The shunt relieves pressure by draining fluid through a tube from the brain into the abdominal cavity.
- Shunt treatment to alleviate symptoms has a success rate of more than 90 percent.

pressure hydrocephalus, or NPH, usually develops for reasons that are unclear.

"It's a disease of aging," Dr. Harold F. Young, director of the neurosurgical center, said of the condition. "The older brain can't tolerate the pressure."

Increased pressure disrupts brain function and can cause symptoms, including walking problems, dementia, urinary incontinence, dizziness, headaches, tremors, and loss of memory and vision.

NPH is often misdiagnosed because many of the symptoms resemble Parkinson's or Alzheimer's diseases, or signs of aging, Young said. "It's probably a

Pressure

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lot more common than we realize.”

Unlike Alzheimer's and Parkinson's, normal pressure hydrocephalus can be diagnosed through fairly simple neurological tests and a brain scan. With treatment, even severe symptoms can often be reduced or reversed.

The most common treatment for NPH is implantation of a shunt that runs under the scalp into the brain through a small hole in the skull. The shunt has a one-way valve and relieves pressure by draining fluid through a tube into the abdominal cavity.

The fluid, called cerebrospinal fluid, is a clear, watery liquid continuously produced inside the brain. It normally cushions and protects the nervous system, delivers nutrients and removes waste products.

Too much cerebrospinal fluid can accumulate because of an imbalance of production in the brain and absorption into the blood, or a blockage in circulation. The buildup causes the increased pressure.

George Bragdon, a 79-year-old Richmond resident, wasn't sure what to expect when he learned that he had normal pressure hydrocephalus. “We knew so little about it,” said Bragdon's wife, Patty.

Symptoms getting worse

“Before the surgery, he was just shuffling along,” his wife said. “You could see the symptoms were getting worse.”

Dizziness and trouble walking kept Bragdon, an avid gardener, from participating in the Virginia Daffodil Society he and his wife started.

In May, he had a shunt implanted at VCU. Shortly afterward, his gait and other symptoms improved. Now, he takes daily walks and hopes to return to gardening soon.

“It's just been a revelation,” Patty Bragdon said. “And to do it at this point of your life — it's a miracle.”

Shunt treatment to alleviate symptoms has a success rate of more than 90 percent at the seven NPH centers nationwide, including VCU, said Debra Howell, spokeswoman for the Hydrocephalus Association, a national support and advocacy group.

While medical experts emphasize that shunts are a treatment and not a cure, the devices can relieve symptoms and improve the quality of life for many



DiLalla

patients over the long term.

About seven years ago, Barbara DiLalla of Chester began experiencing vertigo, balance problems and incontinence. Referral to Young led to a diagnosis of normal pressure hydrocephalus and surgery.

“It did make a big difference,” DiLalla said of the shunt she received in 2000. “I'm not totally all right, but I'm a lot better than I would have been.”

She credits her treatment with helping her remain active and social. She even held a garden party for her recent 75th birthday.

“It's made me realize that I have to help myself,” DiLalla said. “I have to keep my mind ac-



2000, TIMES-DISPATCH

Del. Frank D. Hargrove Sr., R-Hanover, sponsored legislation to increase awareness of the disorder after his wife, Oriana, was diagnosed with it.

tive, and I have to keep my body active.”

If left untreated, the fluid buildup can cause worsening symptoms and permanent brain damage.

Increasing awareness

Many people affected by the disorder hope to increase awareness to improve the chances that patients receive early and effective treatment.

Del. Frank D. Hargrove Sr., R-Hanover, knows firsthand the difficulty and heartache involved in trying to find a diagnosis.

About 20 years ago, Hargrove's wife, Oriana, now 77, had trouble moving her feet, even falling while trying to play tennis. She developed incontinence and mild dementia.

For years, the Hargroves visited doctor after doctor.

Oriana Hargrove's condition continued to deteriorate, and she began having seizures. At one point, she was misdiagnosed with Parkinson's.

“I took her everywhere,” Hargrove said. “I went to more emergency rooms over a period of five to six years than I ever thought existed.”

Finally, while Oriana Hargrove was recovering in a hospital after an especially bad seizure, a nurse mentioned NPH and recommended VCU's center.

Decade of uncertainty

After more than a decade of uncertainty, Oriana Hargrove was diagnosed with NPH and had a shunt implanted.

She began to improve almost immediately, Hargrove said. Before the surgery, Oriana couldn't read. The day after the surgery, “It was miraculous, it was like turning on a light switch.”

“She had the shunt put in and the day after that . . . she was reading the newspaper.”

Hargrove's NPH is under control, but she has other medical problems, Hargrove said. He worries that her delayed diagnosis led to lasting effects.

In 2000, Hargrove sponsored legislation to increase awareness of the disorder among the elderly. The bill allocated money with which Young and VCU neurosurgery professor Anthony Marmarou screened residents of Virginia nursing homes and assisted-living facilities for the condition.

NPH affects an estimated 375,000 adults in the U.S., Howell said.

Lack of awareness among patients and doctors is a barrier to treatment, she said.

The best thing for NPH patients, Howell said, is “getting a diagnosis, getting the right diagnosis and getting early diagnosis.”