HEART TO HEART

Stories of survival from the ER.

By Melissa Jacobs

Eat right, exercise, blah, blah, blah. Khiry Grasty largely ignored the heart-health public service announcements he saw on TV. He was 24 years old, 6-foot-4, 185 pounds, and in great physical shape. No way was his heart health an issue.

Tom Krause thought the same thing. At age 46, he was an avid cyclist, regularly riding 45 miles with White Clay Bicycle Club.

Edward Bove was in a slightly higher risk group because he'd been born with a congenital defect: a bicuspid aortic valve. But the valve had been checked every few years and hadn't posed any problems. Bove had no trouble crushing monster workouts or performing his job as a Lower Merion police officer.

All three men were tough as nails, healthy and strong—until their hearts almost killed them.

Back in April 2016, Grasty was talking on his phone while sitting on his porch. Suddenly, he lost all feeling in his legs and stumbled down the steps, slamming his head against a concrete wall. Hours later, his eyes were still glazed and he was disoriented. Was it a concussion?

Grasty's mother, Donna, drove him to Crozer-Chester Medical Center. Doctors told them stunning news: Grasty had suffered a stroke. Tests revealed that Grasty had infective endocarditis, a serious infection on the mitral valve of his heart. The infection grew, developing vegetation. A piece broke off, traveled to Grasty's brain, and caused the stroke.

Grasty needed to recover from the stroke, and he needed surgery to repair the damage done to his mitral valve. The latter required the expertise of Dr. Charles Geller, chief of cardiothoracic surgery for Crozer-Keystone Health System. Typically, Geller has a 90- to 95-percent success rate in repairing mitral valves. But Grasty's appeared to be too devastated to save. "I was going to try," Geller says, "but I wanted Khiry to choose what kind of [replacement] valve he wanted, in case we needed to go that route."

Geller presented Grasty with two options: mechanical valve or bioprosthetic valve. With a mechanical valve, he'd have to be on blood thinners for the rest of his life. He wouldn't need

Edward Bove

TESSA MARIE HANSEN

Khiry Grasty

blood thinners with a bioprosthetic valve, but it would only last about five years, at which point Grasty would need another surgery—and another one after that, every few years for the rest of his life. Grasty opted for the mechanical valve. "To be honest, I didn't want either," he says. "I wanted to keep all of my original parts."

The surgery was in June 2016, and Grasty woke up knowing that his heart was beating, but not sure how. Geller told him the good news. He'd saved Grasty's native mitral valve. "I wouldn't have to take blood thinners or have another surgery," Grasty says. "It was the best possible outcome."

Recovering from his medical apocalypse was brutal, Grasty says. "In truth, he made a remarkable recovery," Geller says with admiration. "Not only was he physically strong, but Khiry was mentally strong and had tremendous support from his family."

Valves also caused Edward Bove a lot of heartache. The bicuspid aortic valve he was born with didn't cause him problems until early 2017. "I started having a hard time running or even walking up stairs," Bove says. "I knew something was wrong."

He couldn't have imagined how wrong things were. Bove went to Lankenau Heart Institute for a stress test, and doctors stopped him halfway through it. They were worried Bove would have a heart attack before he finished the test. His aortic valve had deteriorated, and he'd developed a dangerous aortic aneurysm. "It was time to talk about surgery," Bove says, "and fast."

In April, Dr. Konstadinos Plestis, Main Line Health's system chief of cardiothoracic and vascular surgery, repaired Bove's ascending aortic aneurysm with a minimally invasive approach that required only a two-inch incision. At the same time, he replaced Bove's stenotic bicuspid aortic valve with a bioprosthetic valve. During the surgery, Plestis found an unexpected problem. Bove's mitral valve was damaged. Plestis repaired that, too. "The entire Lankenau Heart Institute team is dedicated to providing advanced cardiac care to our patients—and Mr. Bove was no exception," Plestis says. "We utilized minimally invasive techniques to treat Mr. Bove, leading to less pain and discomfort and a faster recovery."

Still, when Bove came out of anesthesia, he recalls, "I felt like I'd been hit by a train."

But Bove knows that, had he not gotten prompt medical attention, either of the two valves or the aneurysm could've killed him. "The recovery is long and tough, but the doctors said that I will be better than when I started—and I am intent on making that happen," Bove says. "The moral of the story is that, when you feel something, get it checked out and don't ignore it."

Ignoring symptoms was a specialty of Tom Krause's. When members of his biking club started to beat him up hills, he thought it was because he was getting old. His father and uncles died of heart attacks, and Krause did feel a little pain in his chest during bike rides. "But I paid no attention to that," he says. "Shame on me."

One day, Krause was 15 miles into a ride when he knew that something was seriously wrong. There was no pain or shortness of breath. "I can't describe the feeling, other than to say that I knew something was very off," he says.

Krause called his wife, Mickie, who came to pick him up, and within a few days, he had an appointment with Dr. Rita Falcone of Chester County Hospital. After running some tests, Falcone told Krause that his left anterior descending artery was 99-percent blocked. The next day, Krause underwent a procedure to insert a stent into that artery. Following a short recovery, he was back on his bike.

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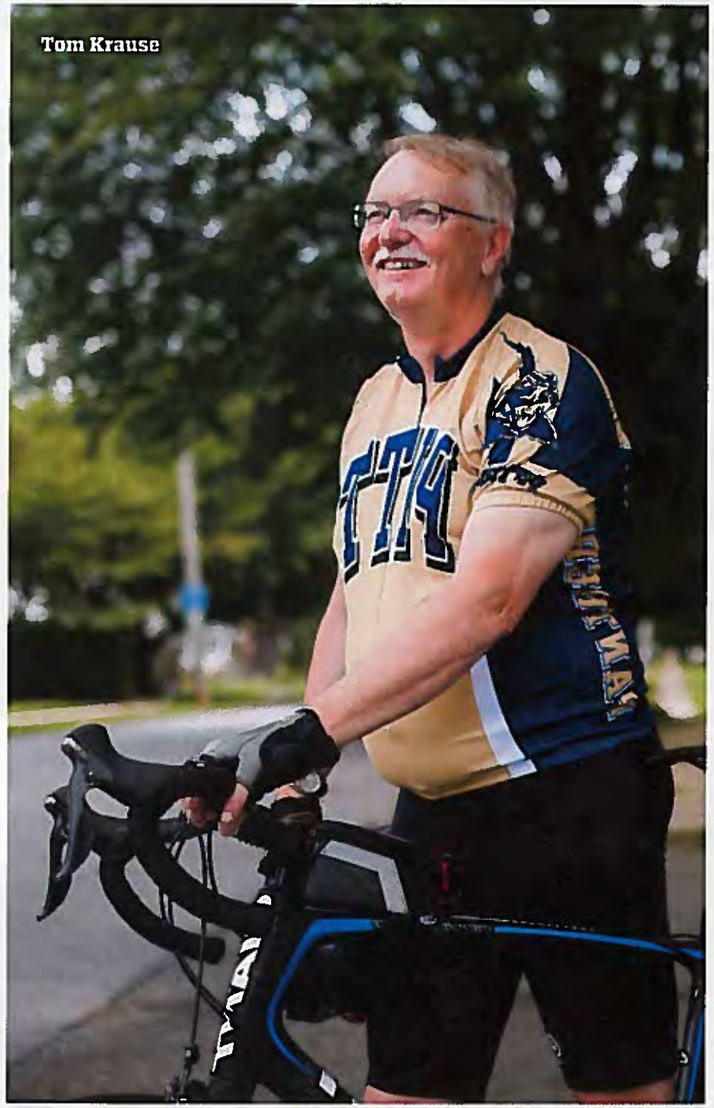

Tom Krause

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At every checkup after that, Krause was given a clean bill of health. He felt great.

But in 2015, nine years after the stent was inserted, Krause passed out while sitting at his desk in his Kennett Square office. The defibrillator in the office malfunctioned, so three co-workers took turns performing CPR until EMTs arrived to take Krause to Chester County Hospital. In the ambulance, his heart stopped twice.

New blockages had developed in Krause's problematic artery. Dr. Timothy Boyek, medical director of the cardiac interventional catheterization laboratories at Chester County Hospital, performed a balloon angioplasty to insert two more stents. Two days later, Dr. Richard Hui, medical director of electrophysiology at Chester County Hospital, put in a defibrillator. "I wasn't sure that I wanted the defibrillator because the recovery time would be months," Krause says. "But my wife overruled me and made the decision."

After six months of intensive recovery, Krause was back to normal—or so he thought. In June 2017, he was once again on his bike when he felt something wasn't right. The same artery developed another blockage. This time, there was no question that a bypass was in order. "Krause's case is unique because, after he had the stent, he went home and did everything right—he ate well and was an avid cyclist," Boyek says. "Even though the stents were successful, there would be a chance of restenosis, and he could have another case of sudden cardiac arrest. Doing a bypass eliminated this chance."

Dr. Steven Weiss, Chester County Hospital's chief of cardiac surgery, did the bypass. "We were able to do it through a tiny two- to three-inch incision under his left breast," Weiss says. "It is called the MIDCAB operation, which stands for minimally invasive direct coronary artery bypass. At Chester County Hospital, we try to do minimally invasive cardiac operations whenever the patient's condition allows."

Krause doesn't feel medically unlucky. He's grateful to have received treatment that saved his life—three times. HG

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“If the aorta ruptures, people don’t survive.”

Aneurysms are especially lethal because they create few symptoms, giving physicians little or no time to treat them. But vascular surgeons like Ryan now use advanced imaging to find and fix aortic aneurysms. At Chester County Hospital, that imaging comes in the form of a GE Discovery IGS 730. The centerpiece of the hospital’s new catheterization lab, this state-of-the-art system displays real-time 3-D fluoroscopic images on a 55-inch screen that’s set right above the procedure table.

As Ryan explains, surgeons find aneurysms and use stent grafts to reline the aorta, replacing and repairing them from the inside out. The stent graft isn’t new, but doing the procedure in a minimally invasive way is. “Before the Discovery, we did these procedures in the operating room,” Ryan says. “Now, we see 3-D images as we advance the wires through punctures in the groin, so we know where to go and what to do.”

The Discovery system helps Ryan treat patients who otherwise may have perished. “Whenever we fix an aneurysm, I know that we are adding years onto people’s lives,” he says. “If the patient can walk out of the hospital the next day, we’ve done our job.”

Impella

How can a device smaller than a pinky finger save someone’s life? “It allows us to do procedures on patients who, in the past, we were not able to treat safely,” says Dr. Muhammad Raza, an interventional cardiologist at Crozer-Chester Medical Center.

He’s talking about Impella, a new device that pumps blood through hearts damaged by coronary artery disease. Inserted into the heart via catheter, Impella helps the heart pump, giving physicians valuable time to repair and restore blood flow through coronary vessels. Typically, the Impella pump is removed at the conclusion of the procedure. “If we are using the device to support the blood pressure, like after a large heart attack that leaves the heart function significantly damaged, we may leave the device in for a few days,” Raza says.

Impella arrived at Crozer less than a year ago. Before that, doctors used intra-aortic balloon pumps, which were considerably less effective. Now, Raza and his colleagues use Impella to treat patients who have substantial impairment of left ventricular function, who have blockages in multiple coronary arteries and multiple blood vessels, and who are in cardiogenic shock. “Before Impella, our hands were tied in treating a subset of patients who weren’t candidates for cardiothoracic surgery,” Raza says. “Now, we can use this device to deliver excellent, life-saving results.”

Fractional Flow Reserve

Stents are tremendous tools for saving patients suffering from acute coronary syndromes. But stents aren’t always the answer, says Dr. Mian Jan, president of West Chester Cardiology and chairman of Chester County Hospital’s department of medicine. Data shows that, in some patients who have coronary artery disease, stents may not be better than medical management. “Statins, beta blockers, nitroglycerin and aspirin may relieve symptoms,” Jan says. “If so, that may be sufficient, unless symptoms increase or patients become unstable. Medical management is a very important approach that shouldn’t be overlooked.”

Stents or medication: How can doctors make the right decision when patients roll into the ER in the middle of heart attacks? If they’re having myocardial infarctions and

heart muscle is dying because of a lack of blood flow, inserting stents is mandatory. But that happens in only 35 percent of patients suffering from acute cardiac syndromes. Many other patients can be stabilized enough to undergo testing that gives physicians information about the best treatment path to pursue. One of those tests is a fractional flow reserve (FFR). Performed in catheterization labs, FFRs measure blood pressure and blood flow in different parts of arteries. "Basically, we can see what is happening beyond the immediate blockage," Jan says. "If not enough blood is getting through, there is benefit to fixing the artery and not relying on medical management."

Either way, Jan says cardiology centers like Chester County Hospital's are fully equipped to make immediate and proper diagnoses. "Time is, of course, of the essence," Jan says, "but we want to take the time to make sure the patient gets the right treatment."

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Coronary Calcium Scoring

Healthy bodies need calcium in bones—not arteries. Where there is calcium there is plaque, and those evil twins can wreak havoc on arteries. They cause blockages that lead to coronary heart disease, the No. 1 cause of death in the United States.

Dr. Kelly Spratt, a cardiologist at Penn Medicine Valley Forge, uses coronary calcium scoring to see how much calcium is in patients' arteries. "It's a relatively simple CT scan, but it gives us a lot of information," she says. "We're looking for early plaque deposits. If we know what's there, we can take proactive measures to treat that plaque with medication."

Unlike other tests, this scan can take place long before patients are in cardiac distress. Having chest pain and being winded are not prerequisites for calcium scoring. "Instead, we look at family history and other risk factors like high blood pressure and high cholesterol," Spratt says.

This is early intervention, she stresses. The goal is to prevent future cardiac events. The test is quick and painless, Spratt says. Recovering from a heart attack is not. **HG**