

Aorta patch saves biker's life

A new procedure uses a small incision to insert a tube into a torn artery.

Robyn Shelton | Sentinel Medical Writer

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GRAPHICS



Graphic: Fixing a torn aorta

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One moment, Kurt Davis was making a turn on his Yamaha motorcycle. The next, he was flying 25 feet, slamming into the grass on a stranger's front yard.

Witnesses told Davis that he rolled around and even tried to get up before lying still, barely conscious. He struggled to breathe, the pain from broken bones and the panicked feeling that he might die. He was in

Deep inside his chest, the main artery in his body -- the aorta -- had been partially torn in the impact. An estimated 8,000 Americans suffer from these often-fatal injuries every year after blunt trauma.

But unlike most patients, Davis' aorta was repaired with a new method that allowed him to avoid major surgery and the blood transfusions that often accompany it.

Working through a small incision in the groin area, Dr. Robert P. Winter of Maitland fixed the damage by placing a fabric-covered tube inside the artery to create a new lining. Doctors have only recently begun to use the technique on torn aortas.

They expect it soon will replace the traditional surgery, which involves making a large incision in the chest, spreading the ribs to reach the aorta and sewing the damaged artery. The operation can take four hours and almost always requires blood transfusions.

It's a lot for someone to endure, especially after already having been through a violent accident.

"The patient in these circumstances is usually dealing with multiple, other injuries: brain injuries, spine injuries," Winter, a vascular surgeon with Florida Hospital, said. "But with this technique, we're able to eliminate the need for major surgery without subjecting the patient to additional trauma."

For Davis, 21, the experimental surgery was not just the easier option for his fragile state. It was his

As a Jehovah's Witness, Davis believes that blood transfusions are prohibited by the Bible. The Brevin decided long before the accident that he would never accept blood, even if it meant he could die.

After being taken initially to a hospital in Melbourne, Davis was flown by helicopter to Orlando, where the repair with the less-invasive method. The doctor had never fixed a torn aorta in this manner before. But the situation required

"Left untreated, this injury is going to be fatal," Winter said. "We knew the risks going in, but if we did nothing, [Davis] was not going to survive."

To do the procedure, the doctor makes a small incision in the groin area to tap into a major artery in the leg. Using X-rays to guide the physician pushes a long, thin tube into the artery and navigates through the body to the damaged aorta.

The doctor then releases a small cylinder that expands to fit snugly at both ends of the torn area, creating a new, unbroken passage for blood.

"It's kind of like taking a garden hose with a leak and putting a new tube inside to stop the leak," Winter explained. "We're basically relining the damaged portion of the artery."

The same method has been used since the late 1990s to fix another condition in the aorta, aneurysms or weak spots.

When patching an aortic tear, doctors actually are using devices that were designed for these aneurysms. The company that manufactures them, Medtronic AVEIA, estimates that only about 200 patients nationwide have been treated for a torn artery with the less-invasive method.

Dr. Grayson Wheatley and his colleagues at the Arizona Heart Institute in Phoenix are pioneers in using the new techniques. They have treated more than 100 patients with torn aortas have been treated with this method at his center since 1998, including a recent victim of a sky-diving accident.

He said the location of aortic tears -- typically in a curved portion of the artery -- makes the procedure technically difficult. Doctors have to be very careful to make sure the repairs hold up over time, Wheatley said. One concern is that these injuries often occur in younger people, and they can be fatal if not treated quickly.



"You're talking about putting an unproven device in someone who is 18, 20 years old and there's no data yet to say what's going on," Wheatley said. Wheatley, a member of the Society of Thoracic Surgeons.

Still, Wheatley said there are clear advantages to the new procedure. And in his experience, patients do very well afterward. He hopes the method will become the main treatment for aortic injuries in time.

"There's no question that this is the treatment of the future," Wheatley said. "When I see how well patients recover after [the procedure], it will play a very important role in the management of aortic diseases."

For Kurt Davis, every passing week brings him closer to a full recovery. The motorcycle accident occurred in June when he lost control on a road in Titusville and crashed into a low concrete wall.

In addition to his torn aorta, Davis suffered broken bones in his knee, wrist, finger and collarbone. His bones are healing, and he is wearing a tiny tube that is holding his aorta together.

"I feel actually almost back to normal," Davis said.

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