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MINIMALLY INVASIVE AORTA REPAIR SAVES LIVES AFTER CAR CRASH OR FALL

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AT A GLANCE

- Injury of the aorta – the body's largest blood vessel – is a common cause of death after a car accident or fall.
- People who survive a tear in the aorta and undergo minimally invasive repair are more likely to survive than those who undergo traditional open-chest surgery, suggests a preliminary study.
- In the study, none of the people who had minimally invasive treatment with an endograft died vs. a 31 percent death rate among those who had open surgery.

HOLLYWOOD, Fla. – Minimally invasive repair of a tear in the body's largest blood vessel, the aorta – a leading cause of death after a motor vehicle accident or fall – may save more lives than traditional surgery, suggests research being presented at the 19th International Symposium on Endovascular Therapy (ISET).

Injury to the aorta, the main artery from the heart to the rest of the body, is the second most common cause of death from a motor vehicle accident or fall. Nine of 10 people who suffer this type of injury bleed to death at the scene. Many of those who make it to the hospital die because the standard treatment – open-chest surgery – is too risky when compounded by their other serious injuries. Minimally invasive repair of the tear with an endograft, a fabric tube supported by a stent, or metal framework, is less risky because it can be done without opening the chest.

In the study, 100 percent of patients who underwent minimally invasive endograft repair survived, while 31 percent of those had open-chest surgical repair died.

“Many of these typically young and otherwise healthy people die of aorta injuries after reaching the hospital because their bodies haven’t stabilized enough to undergo surgery,” said Oren Steinmetz, M.D., associate professor, McGill University Health Center, in Montreal. “Placing an endograft allows us to correct a life-threatening problem sooner and in a far less invasive and less dangerous way. Then we can also more easily treat the other injuries.”

The study included 28 patients diagnosed with blunt thoracic aortic injury who were treated at McGill University Health Center; 16 were treated with open surgery and 12 were treated with minimally invasive endograft repair. In the surgical group, 5 patients died (31 percent), one suffered paraplegia (6 percent) and one underwent a second surgery for excessive bleeding (6 percent). In the endograft group, no patients died, suffered paraplegia or had to undergo a second procedure.

Surgical repair of a tear in the aorta typically involves making an up to 12-inch incision in the chest and cracking open the ribs to access the aorta, placing the patient on partial heart-lung bypass, clamping off the aorta and surgically replacing the torn portion with a fabric graft sewn into place.

Minimally invasive repair with an endograft involves threading a tube called a catheter through an incision in the groin to the site of the tear in the aorta. A collapsed endograft is advanced through the catheter to the aorta and expanded in place. Blood flow is redirected through the endograft, sealing off the tear.

“Our early study suggests that endograft repair is likely to be more successful than surgery in these patients,” said Dr. Steinmetz. “At our institution, all patients with this type of injury are now offered this alternative to surgery whenever possible.”

Co-authors of a paper on this topic being presented at ISET are Peter Midgley, M.D., Kent MacKenzie, M.D., Marc Corriveau, M.D., Daniel Obrand, M.D., Cherrie Abraham, M.D. and Paola Fata, M.D.

Considered to be the premier meeting on endovascular therapy, the International Symposium on Endovascular Therapy (ISET) is attended by more than 1,200 physicians, scientists and industry professionals from around the world. The meeting pioneered the use of live cases to promote the multidisciplinary treatment of vascular disease. ISET is presented by the Baptist Cardiac & Vascular Institute, Miami.

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