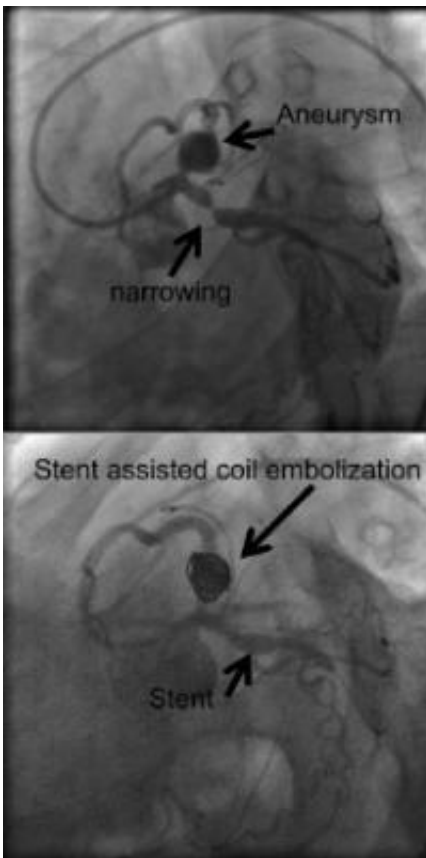


Heart doctors repair coronary aneurysm without open surgery

February 16 2012, By David Bricker



Top: Angiogram of a large aneurysm in the left anterior descending artery and narrowing in the circumflex artery. Bottom: Angiogram after successful stent assisted coil embolization of the left anterior descending artery and stent placement of the circumflex artery.

(Medical Xpress) -- Methodist DeBakey Heart & Vascular Center

interventional cardiologists have, for the first time, repaired a large coronary artery aneurysm with stent-assisted coil embolization without doing open heart surgery. The successful procedure could mean a new option for patients, especially those who would be at risk undergoing an open chest operation. The work is published in the February issue of *Circulation: Cardiovascular Interventions*, an American Heart Association journal.

"Coronary aneurysms aren't rare," said interventional cardiologist, Htut Win, M.D., who performed the procedure in collaboration with Neal Kleiman, M.D. "They can cause limited blood flow or clots that can cause heart attacks. In rare cases, they can rupture. Traditionally, people with large coronary aneurysms have chosen to have them fixed with open surgery, which can mean one or two weeks of recovery. Our patient walked out of the hospital the next day."

In a follow-up visit about a month later, the now-38-year-old patient, a police sergeant, ran on a treadmill, unassisted and without trouble, for 12 minutes.

Coronary aneurysms are believed to occur in one to two percent of American adults. They are traditionally repaired during [open surgery](#), which is a complex and risky operation, especially if they are situated right at the beginning of the coronary artery, Win said. Normally, surgeons open the chest and work their way to the [aneurysm](#), sometimes having to split the lung-destined pulmonary artery or lift it up to get access, at which point the coronary artery can be repaired and bypassed.

Stent-assisted coil embolization has been used to repair aneurysms inside the brain to prevent rupture. But this is the first time this technique has been used to repair a large [coronary artery](#) -- a crucial blood vessel that keeps the heart alive -- using percutaneous means.

"The patient would have been out two to four weeks, at least," Win said. "Because of his job -- he's a Houston police officer -- we wanted to get him back on his feet as soon as possible."

Win and Kleiman, in collaboration with cardiac imaging specialists Su Min Chang, M.D., and Venkateshwar Polsani, M.D., designed the procedure specifically for the patient using 3-D CT coronary angiograms. Using the images to see beforehand where [blood vessels](#) and other structures stop and start, Win and Kleiman were able to decide how best to get to access the aneurysm. Win and his group placed a stent across the aneurysm and a microcatheter (small tube) was trapped inside the aneurysm. Then a platinum coil was delivered thru the catheter wrapping around the stent inside the aneurysm to help blood to clot, sealing off the extra space and forcing blood to flow only through the stent.

"Our hospital has this incredible diversity of diagnostic and interventional expertise, and our experts routinely work in teams to come up with new ways to help our patients," Win said. "Methodist has a strong history in [heart](#) imaging. Without the help of Dr. Chang and his team, without the eyes that allowed us to see the procedure before we actually getting in, we could not have done this with such ease and, more importantly, safety. There were no surprises."

The type of aneurysm Win repaired is called "fusiform," which means the bulging of the blood vessel is symmetrical down the line of the blood vessel, a bit like the end of a bagpipe horn. Win said repair of fusiform aneurysms is much more complex than for "saccular" aneurysms, in which the blood vessel bulges out asymmetrically to one side.

Provided by Methodist Hospital System

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