



Robotic Surgery

A cardiothoracic surgeon has become the first physician to use a surgical robot during heart surgery to successfully repair a mitral valve. The advanced technique of repair used is called the “*American Correction*”. The surgeon used a US Government-approved *daVinci* robot to repair the mitral valve of a 62-year-old man.

Previously, the procedure for this type of surgery involved opening the chest and a subsequent long recovery for patients. “With the minimally invasive technique, patients suffer fewer complications and return to their normal lives much quicker,” said a physician. “We have performed the *American*



Correction for over 15 years in 1,000 patients with a great deal of success, and now we adapted the robot to our technique,” he said.

It took seven months of intense training and a major team effort to be able to perform this advanced surgery with a robot. Instead of opening up the chest, surgeons made four small incisions along the right side of the chest wall to insert small surgical instruments attached to adjustable robotic arms. Attached to one of the arms is a camera that sends images back to a console where doctors operate the other surgical instruments attached to the arms.

The system’s design allows a surgeon to operate from a comfortable, seated position at the console

with eyes and hands positioned in line with the instruments. To move the instruments or to reposition the camera, the surgeon simply moves his/her hands.

Physicians say that the robot is ideal for the highly technical mitral valve repair surgery because it gives the surgeon a 3-D, 10 times magnified view of the operating field and so provides an excellent look at the delicate tissue and organs.

The surgery actually takes longer than the traditional procedure but there are more benefits for the patient, say scientists. “Because we are not opening the chest, there is less scarring, fewer wound complications, and a much quicker recovery time,” said a doctor. “Most patients who have an open repair would not be able to drive or do things like hit a golf ball for three weeks to a month, but with this procedure they should be able to do those things a week after surgery,” he added.

The mitral valve is the inflow valve for the left ventricle, the main pumping chamber of the heart. Blood flows from the lungs, where it picks up oxygen, across the mitral valve and into the left ventricle. A repair is conducted to treat leakage or narrowing of the valve. In some cases, the mitral valve is replaced with an artificial valve. A repair is often better than a replacement because it is considered more durable, say doctors.

Medical studies show that long-term survival rates are better with repair surgery and that there is reduced risk of strokes or infection. The original technique for mitral valve repair, the “*French Correction*” developed in the 1960s is also still widely used but has only a 60 percent success rate.

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