Abrazo Community Health Network continues to expand its services to patients who need advanced cardiovascular care by performing a revolutionary heart stent procedure at three of its Valley hospitals.

The new absorbable heart stent made its debut in the United States earlier this year as a potential treatment for the 15 million Americans with coronary artery disease.

The first-of-its-kind stent, made of a naturally dissolving material similar to dissolving sutures, is used to open a clogged artery and restore blood flow to the heart. Within three years of doing its job to promote healing of the treated artery, the stent disappears, leaving just two pairs of tiny metallic markers that enable a physician to see where the device was placed.

Physicians at Abrazo Arizona Heart Hospital began performing the new heart stent procedure last month. Since then, the procedure has been added to the list of cardiovascular services at Abrazo Arrowhead Campus and Abrazo West Campus.

“The dissolving stent represents a significant step forward in the treatment of heart disease,” said Dr. Nishant Gupta, an interventional cardiologist on staff at Abrazo Arrowhead Campus. “It is rewarding to see our patients make a remarkable recovery after the procedure.”

Although metal stents have been the standard of care in treating clogged arteries for many years, the dissolvable stent offers distinct advantages, Gupta said. Among them is the fact that the treated artery can pulse and flex naturally, as demands on the heart change with daily activities. The dissolvable stent also could provide easier access to the arteries for other treatment options and even could reduce the potential for future blockages that occur with metallic stents.

The new stent is one of a host of procedures Abrazo uses to treat complex heart and vascular conditions. Abrazo Arizona Heart Hospital is one of 80 sites nationwide to participate in a national clinical trial on Transcatheter Aortic Valve Replacement, or TAVR, in low-risk patients suffering from aortic stenosis – a narrowing of the valve in the aorta. TAVR is a minimally invasive alternative to open-heart surgery.

The hospital also led the nation in using a new technology called lumivascular atherectomy system to treat patients suffering from the painful symptoms of peripheral artery disease, which is caused by a build-up of plaque that blocks blood flow in the arteries of the legs or feet.

Abrazo also has established six specialty cardiac and vascular institutes, including an Institute for Coronary Artery Disease, and has become a training ground on new procedures and emerging technologies for cardiologists nationwide.
What is it?

- A first-of-its-kind dissolvable heart stent used to open clogged arteries and improve blood flow to the heart.

- The stent treatment is used in patients who have a narrowing of the coronary arteries caused by coronary artery disease – a condition that occurs when the arteries that supply oxygen-rich blood and nutrients to the heart muscle becomes narrowed or blocked by a gradual build-up of plaque. Plaque is made up of fatty deposits (cholesterol), white blood cells, calcium and scar tissue that collect over time in the coronary artery wall. If these arteries become blocked or narrowed, treatment may be required to improve blood flow and increase the supply of oxygen to the heart.

- Coronary artery disease is the No. 1 killer in the United States, affecting an estimated 15 million Americans.

What makes the dissolving heart stent different than the current standard of care?

- Other stents are made of metal. The new dissolving stent is made of the same material used in dissolving medical stitches.

- Unlike traditional metal stents, which remain in the body permanently, the dissolving heart stent disappears in about three years after doing its job of opening a clogged artery and promote healing.

- Like a natural vessel, the treated artery can move and flex, allowing blood flow when needed. The dissolving heart stent also renews the options for future treatments.

- The new stent avoids future complications that can occur with permanent metal stents. These complications might include the stent breaking over time or parts of the stent losing contact with the vessel wall, called malapposition.

How does it work?

- The procedure takes only about an hour in the hospital’s cardiac catheterization lab. There's no big incision; a small tube is inserted into an opening in your wrist or groin. The cardiologist then threads the stent through the thin flexible tube to the area of blockage. The stent, made of a biodegradable polymer, is then expanded to prop up the affected artery, pushing the plaque back in the artery wall to restore blood flow.

- During the next few months, the stent will slowly release a drug to limit the growth of scar tissue and reduce inflammation. Like a metal stent, it props open the diseased vessel, restoring blood flow, then is completely and naturally absorbed by the body. After the artery is healed, it leaves almost no material behind and restores natural vessel motion. Only two pairs of tiny markers remain to help cardiologists know where the stent was placed.

Is the stent approved by the FDA?

- Yes, the stent was approved by the FDA in July of 2016.
Is the new stent safe?

- The dissolving is shown to be as safe as the best-in-class metal stent, and they have comparable safety and effectiveness. And compared to other stents, the dissolvable stent can offer long-term benefits, including having no permanent implant, more options for future treatments and no late complications that could occur with metal stents.
- Several large clinical trials both inside and outside the United States have shown that the stent is safe for treating blocked arteries.
- The stent has been used outside of the United States since 2012 and is now available in more than 100 countries. Worldwide, more than 150,000 people have received a dissolving stent, and it has been studied in more than 30,000 patients.

What is the recovery time?

- The recovery time for the dissolving stent is similar to the recovery time for other stents and will depend largely on the patient’s medical condition.

Where can I learn more?

- For more information about the new heart stent, watch this video featuring Dr. Nirav Mehta of Abrazo Arizona Heart Hospital.
- The new heart stent procedure at Abrazo Arizona Heart Hospital and Abrazo Arrowhead Campus has attracted the attention of the local media.
- Watch Dr. Nishant Gupta’s interview here and read more about the procedure here.

Disclaimer: Dr. Kris Vijay and Dr. Nishant Gupta are independent physicians and not employees, agents or representatives of Abrazo Community Health Network’s Abrazo Arizona Heart Hospital and Abrazo Arrowhead Campus. They are solely responsible for the provision of medical services to patients.