Stanford Hospital Health Notes

A community health education series from Stanford Hospital & Clinics

Understanding A Woman's Heart Means Knowing What to Look For

Reyna Robles was always the first one up and the last one to bed, the kind of person whose warmth and energy seemed effortless, possessed of more than enough steam to come home from her full-time job, to select recipes from her large collection of cookbooks to prepare a meal for her husband and children, and then to take her dogs for walk and help her kids with homework. Before bedtime, she'd fit in a good work out.

She wasn't one to complain, either, except the spring day when she suddenly felt a pain in her chest as she exercised. It was a cramp-like pain, not anything like the normal muscle aches Robles expected from her body after vigorous activity. "I didn't think I should be feeling chest pains," she said. She wasn't even 40.

She saw her doctor, who ordered an EKG. Everything was fine, Robles was told. Nothing was wrong with her heart. But the pain kept coming back, and that worried her. "Exercise should feel good," she said. "It shouldn't hurt." She went back to her doctor, who ordered more tests. Still nothing, she was told. Soon, she started feeling the pain even when she wasn't exercising. "I intuitively knew something wasn't right," she said. Still, none of the doctors she saw could discern a problem. And she began to doubt herself, "although I knew I wasn't imagining it. It was real."

With no answers and no end to the pain, Robles' whole view of life was gradually permeated by the uncertainty of her health. "I'm normally very positive, very bubbly and cheerful," she said, "but I felt like a shadow of my former self. All I could think about was my chest pain." By winter, she'd become desperate for help and went online to find it. She connected with a group of women who had experienced similar symptoms. One of them was a patient of Jennifer Tremmel, MD, Clinical Director of the Stanford Hospital Women's Heart Health program, just celebrating its fifth year in service.

Deceptively normal

In Tremmel, Robles found someone whose focused interest and knowledge of heart disease in women became the key to solving her medical mystery. "For years, the standard medical treatment for women with heart disease was based on what we know about heart disease in men," Tremmel said. "That's really confounded things. In the past 30 years, we've learned a lot about how women differ from men, but there's a lot we still don't know. Just getting physicians to have a broader concept of symptoms, and what constitutes coronary artery disease in women, is a challenge."

Norbert von der Groeben

After many frustrating visits to doctors who told her they could find nothing wrong, Robles found Jennifer Tremmel, MD, who leads the Women's Heart Health at Stanford program.

Robles is a classic example of the challenge, in several ways. Her first EKG, stress test and angiogram were deemed normal. "What we have found is that stress tests, and even angiograms, may not always identify the problem in a woman's heart", Tremmel said. "If a lack of blood flow through the entire thickness of the heart muscle is needed to have a positive stress test, those patients with symptoms from a lack of blood flow to only the inner most lining of the heart may not be caught."

"I intuitively knew something wasn't right. I knew I wasn't imagining it."

– Reyna Robles, patient, Stanford Hospital & Clinics

Similarly, Tremmel said, angiograms catch only blockages in large vessels, but patients, particularly women, may have a problem like endothelial dysfunction, which affects small vessels whose failure to work properly can't be seen on angiography.

Robles came to Stanford as many do, having been told no abnormalities had been found. Yet her symptoms were still there. "We decided we'd look harder," Tremmel said. "We did all this extra testing to see if we might find something that had been missed on her original angiogram."

Tremmel discovered that Robles had a physical anomaly called a myocardial bridge, where an artery that normally sits on top of the heart actually dives down into the heart muscle. Such bridges are not uncommon, and most people can live their entire lives without symptoms, but if a large portion of the artery is deeply buried, then there's trouble. Again, however, this physical abnormality often doesn't show up on an angiogram.

Norbert von der Groeben

As she recovers from surgery to reroute an artery covered by heart muscle, Robles has returned with gusto to cooking, much to the appreciation of her husband, Martin.

Not only did Robles have a myocardial bridge, but she also had endothelial dysfunction within the bridge. This dysfunction causes an artery to constrict when it should dilate. "There were a lot of physiologic dynamics going on in that bridge," Tremmel said. The first approach for Robles' treatment was standard: use medications to slow the heart rate enough to allow blood to flow through the artery, even though it was squeezed inside the heart muscle. That didn't work. Nor did Robles' efforts to minimize stress, another tool to reducing symptoms.

Trouble uncovered

Finally, with no other options left, Tremmel began to consider a surgery to release the artery from the muscle. "The surgery itself isn't complicated," she said, "but it is open heart surgery where you open the chest and expose the heart. It's a big deal. But for patients who have a poor quality of life, and you can't find any other way, it's a viable option."

Norbert von der Groeben

Reyna Robles lived her life to its fullest: job, husband and four kids, two dogs and a daily workout. She did not expect, at age 41, to suddenly experience chest pains.

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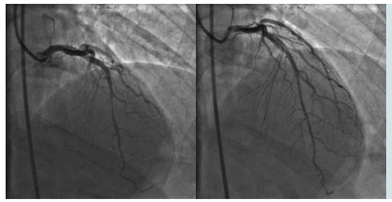
– Jennifer Tremmel, MD, Clinical Director, Women's Heart Health at Stanford

Before the final decision was made, Tremmel wanted to do one more test. She inserted a wire into Robles' artery, while stressing her heart with medication, to measure the pressure and flow, on that one particular part of her heart's anatomy. "The test proved that the bridge was definitely the problem," Tremmel said. Tremmel's colleague, cardiovascular surgeon Michael Fishbein, MD, made the repair to Robles' heart.



Robles' heart function was impaired by a physical anomaly called a myocardial bridge, where an artery is enveloped by heart muscle. When the heart muscle contracts, blood flow through that artery is constricted, too. On the (left), a contracted heart; on the (right), a relaxed heart.

Less than a month after her surgery, Robles was taking small but steady steps toward a more active life. After so many months of living with fear and uncertainty, Robles' belief in the strength of her repaired heart has been helped along by Tremmel's gentle encouragements. Robles worried aloud at a recent exam about some enthusiastic laughing she'd done with one of her daughters, so exuberant that her chest began to hurt. Tremmel pressed her stethoscope against Robles' chest for a close listen.

"It sounds like a happy heart," said Tremmel. "You can laugh as much as you want."

Norbert von der Groeben

Until she was treated at Stanford, Robles had found it more and more difficult to do even the simplest of tasks. This Christmas, with her heart issue resolved, she's back in action.

Re-entry

"I'm so very grateful to her," Robles said, "and to my whole care team at Stanford. I will never stop being grateful. I am blessed every day. It can be difficult to find a doctor willing to listen. Dr. Tremmel never ever gave up."

"We pride ourselves in taking the time to really figure out what's going on," Tremmel said, "and not just saying there are no blockages, that everything must be fine. The technique we use in the cath lab, for instance, is available to any physician out there, but it's really a matter of learning how to do these things and taking the time. It is more time consuming than a simple angiogram."

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Beyond accurate diagnosis, she said, "you also have to stick with your patients. There's no magic bullet to make them feel better. It's a multi-factorial approach of using medications that improve symptoms, as well as encouraging lifestyle changes and stress reduction."

"The Stanford Women's Heart Health program staff includes a psychologist," Tremmel said. "There's a great deal of emotional stress that comes along with having these symptoms that nobody could explain for a long time. That in itself is a huge burden. A lot of women come to us with years of having people tell them, 'There's nothing there.' They doubt themselves and have really been affected by that. I think addressing all these factors is important."

Since her surgery, and with an understanding of what caused her chest pains, the stress and anxiety Robles once felt diminishes with each day.

special feature

Heart attack symptoms women should know

Chest pain is the classic signal of heart failure, but that can also feel like pressure, tightness, squeezing or burning. Other symptoms might also be part of an attack in a woman.

- shortness of breath
- nausea or vomiting
- arm or shoulder pain, usually left-sided but may be right-sided
- pain in neck, jaw, back or abdomen
- fatigue

Preventing a heart attack

A healthy diet, appropriate weight and daily exercise routine reduce your chances of heart disease. Other steps to take include:

- Know your family's heart health history
- Check your blood pressure regularly
- Check your cholesterol at age 20 and every five years afterwards
- Childhood obesity and diabetes raise the risk for heart disease at a young age
- Don't smoke
- Be physically active. Aim for 30 minutes every day of moderate intensity exercise.

Diagnostic tests to consider

Sometimes, more than one test is necessary to determine if you have heart disease. The options include:

- blood test
- an EKG to measure the heart's electrical activity
- chest x-ray, echocardiography, MRI, CT
- a stress test measure your heart at work

For more information about Women's Heart Health at Stanford, visit womensheart.stanfordhospital.org or phone 650.736.0516

Watch the new Stanford Hospital Health Notes television show on Comcast: channel 28 on Mondays at 8:30 p.m., Tuesdays at 3:30 p.m. and Fridays at 8:30 a.m.; channel 30 Saturdays at 10:30 p.m. It can also be viewed at www.youtube.com/stanfordhospital.