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Innovative protocol allowed doctors to patch Keith Lobo's ruptured heart

An entrepreneur's grateful family gave back to the PMCC because of the live-saving care given by two doctors

By **Marjo Johne**

KEITH LOBO'S HEART ATTACK was so severe that it liquefied his ventricular septum – the wall between the organ's left and right ventricles – and destroyed parts of his cardiac muscles.

Yet for two weeks in March 2015, Mr. Lobo thought he was merely down with the flu. He had even gone grocery shopping on the day he finally went to the emergency department at Sunnybrook Health Sciences Centre in Toronto.

"When you think heart attack, you think pain in your chest and in the left side of your body – I had none of that," says Mr. Lobo, a father of two kids and an entrepreneur who, along with his wife, runs the Vintage Home Boutique, a Toronto home furnishings store. "I just got really cold at night and would be completely drenched with sweat, after even the slightest bit of physical exertion. The day I went to the hospital, I was starting to experience shortness of breath."

The medical team at Sunnybrook used a balloon attached to a catheter to open the blocked artery, but the damage had already been done. The type and extent of cardiac damage he suffered is very rare – occurring in less than 2 per cent of people who have a heart attack – and required the hand of a doctor with expertise in fixing ventricular septal defects.

Mr. Lobo was referred to the Peter Munk Cardiac Centre (PMCC), where he was seen by Dr. Christopher Feindel, a heart surgeon, and Dr. Eric Horlick, a cardiologist, specializing in structural heart disease.

"I needed a patch on my heart, and the people at Sunnybrook felt that, because of the expertise of Dr. Feindel and Dr. Horlick, the Peter Munk Cardiac Centre was the best place to support what I needed," recalls Mr. Lobo, who was only 42 years old at the time – a reminder that young people can also have heart attacks.

Without surgery, a ruptured ventricular septum leads to death within 30 days in 96 per cent of all cases. The odds improve with surgery, but there's still a 50-per-cent chance that the patient won't survive.

Mr. Lobo faced a much more promising outcome, thanks to a number of innovations at the PMCC.

"We developed a technique where we put the patch inside the left ventricle, which is the higher-pressure chamber," explains Dr. Feindel. "This technique works by using the pressure inside the chamber to keep the patch in place. It seems ridiculously simple, but it has really reduced the rate of mortality from this type of operation."

In an open heart procedure, Dr. Feindel patched Mr. Lobo's ruptured heart and did a double bypass, where he used a healthy vein from another part of Mr. Lobo's body to reroute blood flow around a section of artery that had been damaged and blocked.

Because the hole in Mr. Lobo's ventricular septum was so large, a significant leak remained after Dr. Feindel installed a patch.

"It's very hard to fix a hole in the heart – often stitches tear through and the patch leaks, leading to shortness of breath and heart failure," says Dr. Horlick. "This type of surgery itself is very rare, so most surgeons today feel uncomfortable performing the operation."

To fix these patch leaks, Dr. Horlick typically implants a small metal device that looks like a thread spool. The device is inserted into a blood vessel in the arm or leg and pushed up to the aorta and into the heart.

A big challenge with this procedure, however, is that the implant often doesn't have a strong structure to hold on to because cardiac muscles tend to be very soft – usually jam-like in consistency – after a heart attack. To address this problem, the PMCC developed a protocol that calls for a six-week waiting period before the implant procedure.

"There is a certain healing process that occurs after a heart attack, where the muscle becomes more firm and able to support an implant," says Dr. Horlick. "So instead of treating someone who is acute and who will likely die because their heart muscle is too soft, we realized that the better solution is to let them have surgery first and then we can go in six weeks later and fix up any leaks. As an overall strategy, we have found that this works very well."

It has certainly worked out well for Mr. Lobo. Today, almost a year-and-a-half since his heart attack, he has recovered to the point where he can keep up with his active kids and do moderate exercises such as walking. And he's back to running his business – a young enterprise that launched just two years ago.

Grateful for the life-saving, specialized care, Mr. Lobo's family gave the PMCC a generous cash donation.

"The level of care I received from everyone was absolutely phenomenal. The doctors and nurses were kind and caring, but at the same time they pushed me to make sure I was getting out of bed and walking," says Mr. Lobo. "And I can't say enough about how incredible Dr. Feindel and Dr. Horlick are. We are fortunate to have these two people in our health-care system."

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> **Dr. Eric Horlick,** Structural Interventional Cardiologist at the PMCC

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01 Thanks to the life-giving care he received at the PMCC, former patient Keith Lobo is able to enjoy his young family and to return to work.

02 Dr. Eric Horlick, cardiologist, was part of a multi-disciplinary team, along with cardiac surgeon Dr. Chris Feindel to surgically repair patient Keith Lobo's damaged heart.