

When the heart and cancer converge

Ontario-Texas teamwork and life-saving surgery got Jennifer Picado to her university graduation

By Marjo Johné

Jennifer Picado was just a few months away from finishing medical school when she got devastating news from her doctor.

The heart palpitations and breathing difficulties that she was struggling with for the past three years were not, as had been suspected initially, symptoms of anxiety. They were caused by a tumour that had grown right on her heart.

"The first surgeon I saw told me it was inoperable," recalls Ms. Picado, a 27-year-old resident of Montreal. "So I spoke to other surgeons who said the tumour needed to be removed right away, but the problem was that none of them had any experience removing cardiac tumours."

A referral from a cardiologist at McGill University Health Centre changed everything for Ms. Picado. She was directed to Dr. Robert James Cusimano, a cardiac surgeon at the Peter Munk Cardiac Centre (PMCC) and one of only two doctors in North America with the expertise to treat such cardiac tumours.

The second is Dr. Michael J. Reardon, a cardiac surgeon at

Houston Methodist Hospital in Houston.

Cardiac tumours, which are relatively rare, can originate in the heart or spread to the heart from other parts of the body. Whether they are malignant or benign, these growths are considered a serious health threat and can kill if left untreated.

"Eventually, a cardiac tumour could block blood flow through the heart," says Dr. Cusimano, whose specialized training and experience include heart transplants. "Even if your tumour is not malignant, you can still die from it."

On May 12, 2016, Dr. Cusimano performed surgery on Ms. Picado to remove the cardiac tumour – a procedure that Dr. Reardon attended as an adviser and observer. About two-and-a-half weeks later, Ms. Picado walked across an auditorium stage at McGill University to accept her medical school diploma.

"My goal was to get out of hospital and graduate," she recalls. "Thanks to Dr. Cusimano, I made it to the ceremony."

Dr. Cusimano's expertise in cardiac tumours was developed not in medical school, but over 24 years on the job at the PMCC. Because of the centre's reputation for innovation and excellence

in cardiovascular care, it gets hundreds of referrals each year from around the world for heart surgeries, including those that call for the removal of abnormal growths. Dr. Cusimano says this has given him more opportunities than usual to work on heart tumours and to learn to respond to each unique case.

"Where and how a tumour has grown determines what we do when a patient comes to us," he explains. "For example, if it's across a blood vessel, [then] we do a bypass. If it has invaded a valve, then we need to do a valve replacement."

Dr. Cusimano is now working on spreading awareness about heart tumours, educating other physicians and health-care professionals on treatment options to develop more widespread expertise.

In January 2016, he organized the world's first cardiac tumour conference, which drew more than 50 attendees from Canada, the United States and Europe. A second conference is scheduled for January 2017.

"My goal is to create a cardiac tumour centre of excellence in Canada, which can help people not only in this country, but also around the world," says Dr. Cusimano. ▽

Dr. Robert James Cusimano, left, and University of Toronto med student David Scholl examine patient images. Dr. Cusimano is one of only two doctors in North America with the expertise to treat cardiac tumours like Jennifer Picado's.



Photograph by Christine Mush



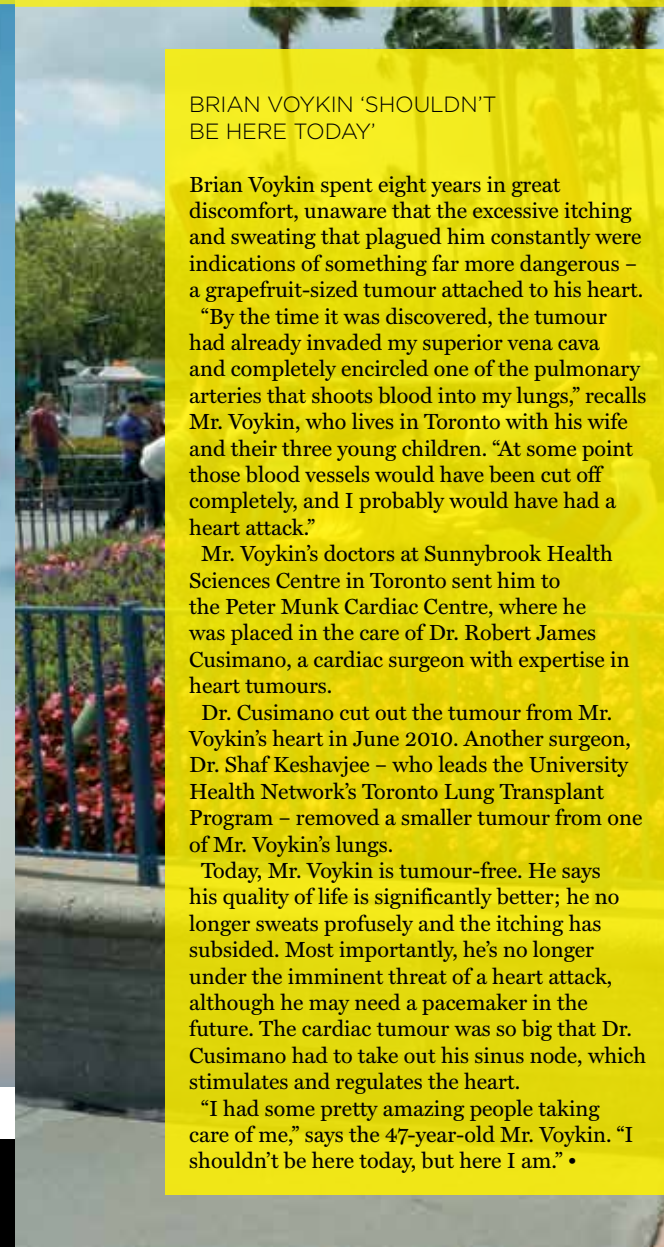
FOR JOÃO COUTO, IT WAS DR. CUSIMANO TO THE RESCUE

João Couto can feel himself getting better and stronger with each passing day. The professional house painter in his 30s, who used to stay active by playing soccer, running and going to the gym, now takes frequent walks and says he's ready to go back to work.

Less than a year ago, Mr. Couto was on an operating table at Toronto General Hospital – part of Ontario's University Health Network (UHN) – getting a rare, cancerous tumour removed from his heart and lung.

Two doctors led the operation, which lasted about eight hours. Dr. Robert James Cusimano – one of two cardiac surgeons in North America with expertise in cardiac tumours – removed the growth from Mr. Couto's heart, while Dr. Shaf Keshavjee, Surgeon-in-Chief at UHN and Director of UHN's Toronto Lung Transplant Program, addressed the tumour in his lung.

"I probably would have died if Dr. Cusimano had not stepped in and said, 'Yeah, I can take out that tumour,'" says Mr. Couto. "I can't say enough about him and Dr. Keshavjee. They really saved my life." •



BRIAN VOYKIN 'SHOULDN'T BE HERE TODAY'

Brian Voykin spent eight years in great discomfort, unaware that the excessive itching and sweating that plagued him constantly were indications of something far more dangerous – a grapefruit-sized tumour attached to his heart.

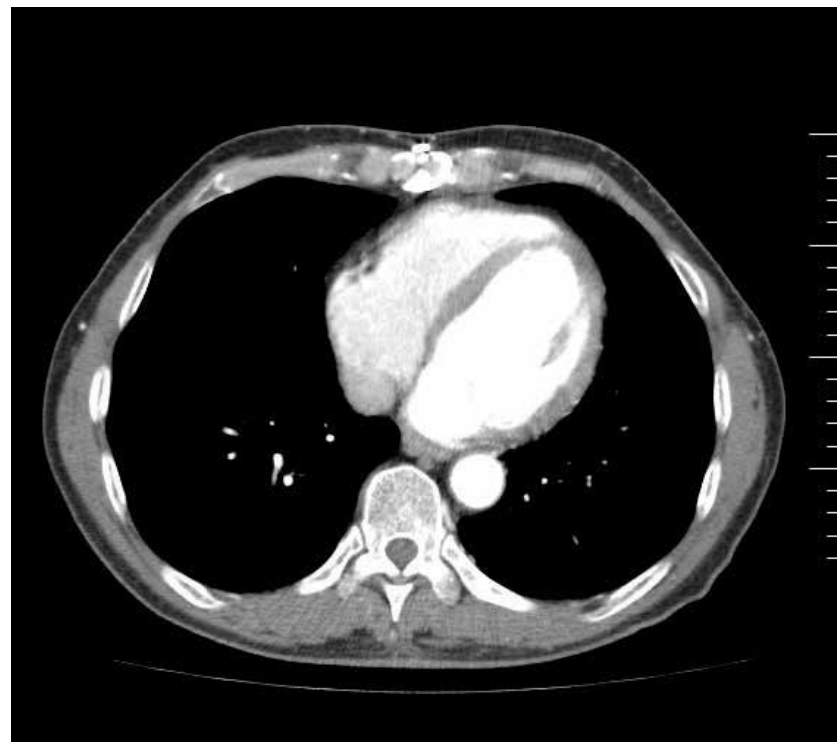
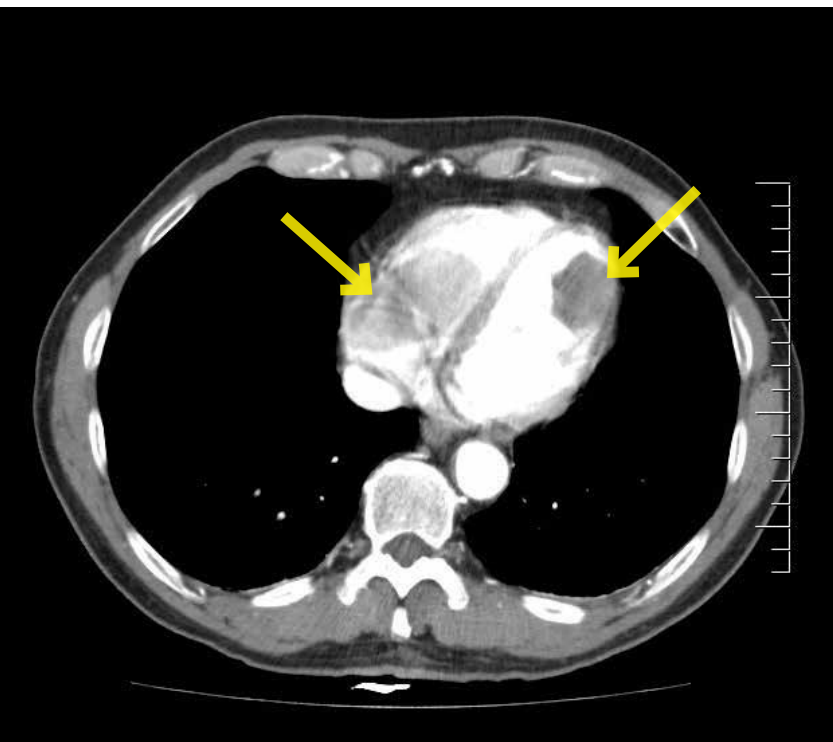
"By the time it was discovered, the tumour had already invaded my superior vena cava and completely encircled one of the pulmonary arteries that shoots blood into my lungs," recalls Mr. Voykin, who lives in Toronto with his wife and their three young children. "At some point those blood vessels would have been cut off completely, and I probably would have had a heart attack."

Mr. Voykin's doctors at Sunnybrook Health Sciences Centre in Toronto sent him to the Peter Munk Cardiac Centre, where he was placed in the care of Dr. Robert James Cusimano, a cardiac surgeon with expertise in heart tumours.

Dr. Cusimano cut out the tumour from Mr. Voykin's heart in June 2010. Another surgeon, Dr. Shaf Keshavjee – who leads the University Health Network's Toronto Lung Transplant Program – removed a smaller tumour from one of Mr. Voykin's lungs.

Today, Mr. Voykin is tumour-free. He says his quality of life is significantly better; he no longer sweats profusely and the itching has subsided. Most importantly, he's no longer under the imminent threat of a heart attack, although he may need a pacemaker in the future. The cardiac tumour was so big that Dr. Cusimano had to take out his sinus node, which stimulates and regulates the heart.

"I had some pretty amazing people taking care of me," says the 47-year-old Mr. Voykin. "I shouldn't be here today, but here I am." •



Left: A CT scan of the heart of a patient with two tumours, appearing as dark shadows on each side of the heart. Right: Both cardiac tumors were removed following surgery.

Peter Munk Cardiac Centre



Surgeons at PMCC, left, perform cardiac tumour removal surgery on patient Jennifer Picado. Right, Dr. Robert James Cusimano holds the tumour they took from the McGill University student's heart.