

World's first minimally invasive tricuspid valve replacement performed in Toronto

March 11 2020

The world's first minimally-invasive tricuspid valve replacement was performed at St. Michael's Hospital of Unity Health Toronto by Drs. Neil Fam, Mark Peterson and Geraldine Ong.

The 76-year-old male patient who underwent the procedure—a catheter-based tricuspid valve replacement through the femoral vein in his leg—reported a significant improvement in his health within 48 hours of the procedure, which was performed on May 23, 2019.

The team used the EVOQUE tricuspid valve replacement system (Edwards Lifesciences, Irvine, CA). Tricuspid valve replacement procedures are typically performed either through [open heart surgery](#) or a thoracotomy, an incision through the patient's ribs. Those surgical methods are effective but due to their more invasive nature, they pose a greater risk of complications for [older patients](#).

"Doing tricuspid valve replacements through the femoral approach is a game changer as it opens up treatment options for patients with heart failure who are too sick to undergo surgery, or are not good candidates for tricuspid clipping. Going through the femoral vein means the risk of complications is dramatically lower," explained Dr. Fam, an interventional cardiologist and the Director of Interventional Cardiology and Cardiac Catheterization Labs at St. Michael's.

Prior to the procedure, the patient explained that low-effort tasks such as getting out of the car or making the short walk from the bedroom to the

bathroom proved too difficult. After the procedure, he could resume these tasks and many other [daily activities](#) with great ease.

Since the world-first procedure, the St. Michael's Structural Heart team has performed multiple tricuspid valve replacement procedures using the femoral approach, with the other patients reporting similarly significant improvements in their health.

The EVOQUE heart valve was first used for mitral valve replacement. Just over two years ago, Dr. Fam approached Edwards to discuss if EVOQUE might be effective for tricuspid valve replacements as well, and this led to a great partnership that brought this idea to reality.

For the past five years, St. Michael's has been a world leader in transcatheter tricuspid valve interventions, in which tricuspid valves are repaired using MitraClip and PASCAL repair systems. However, some patients' tricuspid valves were irreparable and the challenge was to develop a safe and effective procedure to entirely replace the tricuspid valve. The early results with EVOQUE tricuspid [valve replacement](#) are very encouraging and further studies are planned.

This world first has just been published in the *Journal of the American College of Cardiology: Cardiovascular Interventions*, with further publications planned.

Provided by St. Michael's Hospital

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