

Team publishes report of implanting Pascal system in patient with tricuspid regurgitation

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Interventional cardiologist Dr. Neil Fam of St. Michael's Hospital has performed a world-first procedure, which he described in the Feb, 26 issue of the *Journal of the American College of Cardiology: Cardiovascular Interventions*. Credit: St. Michael's Hospital

Interventional cardiologist Dr. Neil Fam of St. Michael's Hospital has performed a world-first procedure, which he described in the Feb, 26 issue of the *Journal of the American College of Cardiology: Cardiovascular Interventions*.

Dr. Fam implanted a new device called the Pascal system in a patient with tricuspid regurgitation - a condition in which the valve separating the two right chambers of the heart is leaking. This can cause the heart to enlarge, eventually leading to symptoms of [heart failure](#) such as shortness of breath, fatigue and leg swelling.

Until now there have been few minimally invasive [treatment options](#) for people with tricuspid regurgitation, which affects about 5 per cent of people over age 75 and has a high mortality rate.

Dr. Fam has been among the first interventional cardiologists using the Pascal system, developed by Edwards Lifesciences originally to treat patients with [mitral regurgitation](#) who might otherwise have no other treatment options.

The current standard [minimally invasive treatment](#) for mitral regurgitation is Mitraclip, where a catheter inserted in the femoral vein guides the device to the heart where it clamps the leaky valve. But a considerable number of patients are not eligible for a MitraClip for anatomical reasons.

The Pascal system uses a spacer, a device that fills the space between the leaflets, or doors, of the heart valve that are not closing together as tightly as they should. The leaflets of the valves are then clamped onto the spacer. Dr. Fam said these features of the Pascal system may be better tailored for patients with complex anatomy.

Edwards has been working with physicians on developing the Pascal procedure to address people with tricuspid regurgitation, and Dr. Fam and the valve team at St. Michael's successfully performed this procedure on a human for the first time in 2017 and several times since.

Dr. Fam described the first procedure in a case study published Feb. 26 in the *Journal of the American College of Cardiology: Cardiovascular Interventions* and presented Feb. 27 at the international Mitral Valve Meeting in Zurich, Switzerland.

The first patient was an 82-year-old woman who had been hospitalized five times for heart failure and was too high risk for conventional surgery. After the Pascal system was inserted, her tricuspid regurgitation was mild and her condition improved so much that she was discharged from hospital

three days later. Dr. Fam said her quality of life has improved dramatically and she has had no further hospitalizations.

Dr. Fam said the ability to use the Pascal system, in addition to Mitraclips, reinforces St. Michael's national leadership in this field.

"Most importantly, we are giving these sick patients more treatment options, with improved quality of life and less time in hospital" he said.

Provided by St. Michael's Hospital

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