

Teenage boy youngest North American recipient of world's smallest heart pump

By Leah Lockhart

What seemed like a case of the flu turned out to be a serious life-threatening illness for Sikander Sahota, a 13 year-old Metro Vancouver boy who recently became the world's youngest recipient of a special tiny heart pump.

Sahota was perfectly healthy until he fell ill one Saturday and asked his mother to take him to the hospital because his lungs were hurting and he was having difficulty breathing. At first she thought he just had the flu, but soon realized his condition was far more serious.

After bringing him to BC Children's Hospital emergency room in Vancouver, they discovered that he had viral myocarditis, a condition in which his body was attacking his heart muscles, causing it to function at only 20 per cent. Viral myocarditis is a condition that kills one-third of patients, while leaving another third needing a heart transplant.

His condition was so critical that his family was concerned he wouldn't survive. "It was terrible," his mother, Mandeep Sahota, recalls. "It was so hard for all of us -- the whole family was so worried about him."

The day after being admitted to BC Children's, Sahota was rushed to St. Paul's Hospital's Acute Heart Failure Program. He went straight from the ambulance to the operating room and was placed in the care of Dr. Anson Cheung, surgical director of cardiac transplantation at the Providence Heart + Lung Institute at St. Paul's Hospital.

Cheung inserted a tiny temporary heart pump called Impella, manufactured by Abiomed, a Massachusetts-based company. The minimally-invasive, seven-millimeter pump is inserted through an incision in the leg where it follows the femoral artery to reach the heart and hook into the left ventricle. "The Impella is basically a tiny propeller that rotates to help draw blood from the heart, giving his heart muscle a chance to rest and recover from the virus," explains Cheung.

"[The pump] saved his life," Sahota's mother says.

Cheung and his colleagues in the program were the first in North America to clinically use Abiomed's Impella 5.0 heart pump. "Impella has revolution-

ized the treatment for acute heart failure, caused by conditions like myocarditis" says Cheung. "Because it is tiny in size and can be implanted minimally invasively, it's less risky for the patient, buys time for heart recovery and avoids further damage to the heart muscles."

Sahota is the youngest in North America to receive Impella, which was originally developed in Germany and is part of Abiomed's heart recovery continuum of care. He is believed to be the youngest in the world to receive this specific model (Impella LP5.0).

The close collaboration of the multidisciplinary team in the Acute Heart Failure Program has helped turn it into the largest program in Canada and the only one of its kind in British Columbia. The program is a national leader in ventricular assist device (VAD) implants (such as the Impella) equipping critically ill heart failure patients with mechanical heart pumps to keep them healthy until they can receive a heart transplant. Long-term VADs can relieve the symptoms of critical heart failure if needed for up to two years and allow patients to live at home and even return to work while they wait for a heart transplant.

Fortunately for Sahota, he was able to have his heart pump removed just two days after insertion and was immediately up and walking. He was even given permission from his doctor to play soccer.

The Acute Heart Failure Program, part of Providence Health Care's Heart + Lung Institute at St. Paul's Hospital, is the only program in British Columbia that provides the full range of specialized care to patients with critical heart failure. The program was also the first in Canada to clinically use the new, long-term VAD called HeartMate II® by Thoratec. It is currently the biggest and busiest program of its kind in Canada, now receiving referrals not only from B.C., but also from other provinces such as Alberta and Manitoba.

Leah Lockhart is with the Communications department at St. Paul's Hospital in Vancouver.



Teenage patient Sikander Sahota, with his family and Dr. Anson Cheung of St. Paul's Hospital



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To contact Cindy directly or for more information regarding the Health Law Group at BLG, please contact:

Cindy Clarke
Partner, Toronto office
416.367.6203
cclarke@blgcanada.com

John Morris
National Health Law Group Leader
416.367.6241
jmorris@blgcanada.com

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