

SavvyWire®: A Game Changer for Lifetime Patient Management and Hemodynamics in TAVR

A conversation with an experienced SavvyWire user highlights the efficiency, accuracy, and time-saving benefits of using the SavvyWire for sensor-guided transcatheter aortic valve replacement.

With Khaled Khalaf, MD, FACC, FSCAI

The SavvyWire® (Opsens Medical) is a novel innovation for transcatheter aortic valve replacement (TAVR) procedures (Figure 1). SavvyWire first entered the market with FDA clearance in 2022, with CE Mark approval anticipated in 2024.

Most innovation in the TAVR space has centered on valves and delivery system, but the SavvyWire uniquely provides a three-in-one solution for stable aortic valve delivery and positioning, continuous accurate hemodynamic measurement during the procedure, and reliable left ventricular (LV) pacing, without the need for adjunct devices or venous access. Powered by world-leading Fidela™ fiberoptic sensor technology (Opsens Medical), SavvyWire delivers hemodynamic measurement without exchange at baseline, after predilation, during partial valve deployment, before postdilation, and at the end of

the procedure. These measurements—including mean, peak-to-peak, and max gradient and LV end-diastolic pressure—are displayed on the Opsens OptoMonitor™ (Figure 2) and can also be shown on the master screen for optimal viewing and analysis.

Savvywire is engineered for workhorse guidewire performance, with a 0.035-inch diameter and 280-cm length. The preshaped tip is available in both an extra-small and small size, with diameters of 32 and 42 mm, respectively. The orange polytetrafluoroethylene (PTFE) insulation directs the current to the uncoated tip, allowing for confident LV pacing.

Dr. Khaled Khalaf is an interventional and structural cardiologist and vein specialist at Vital Heart and Vein in Houston, Texas, where his group was the first in Texas to fully utilize all the benefits of the SavvyWire. In this article

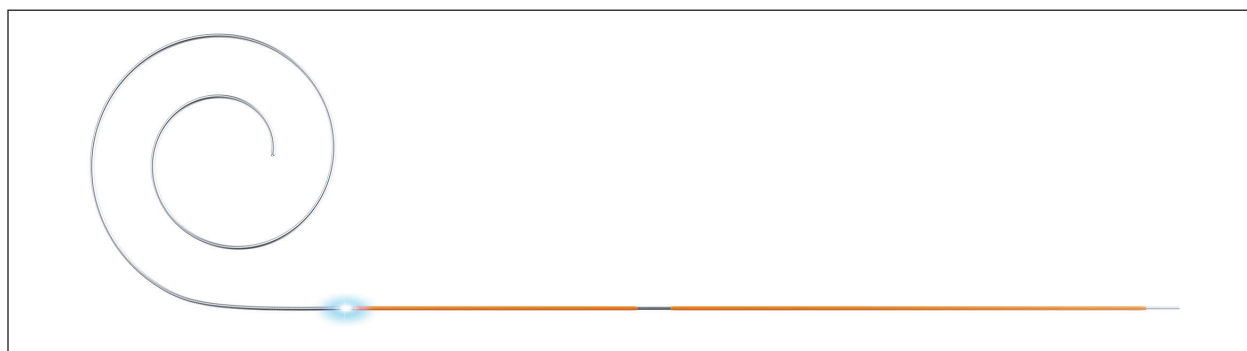


Figure 1. The Opsens SavvyWire.

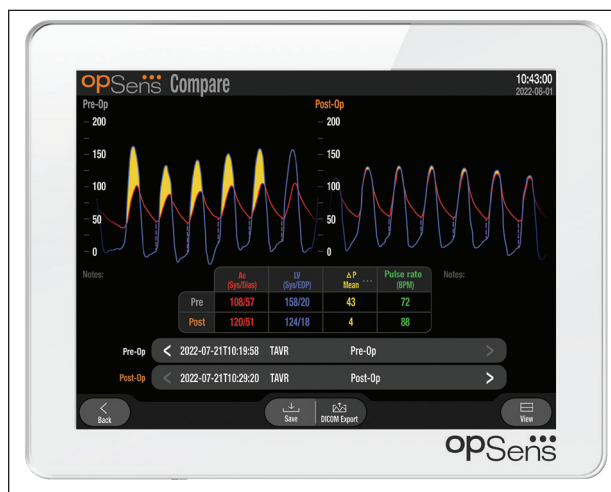
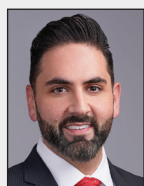


Figure 2. A sample screen of the Opsens OptoMonitor for a hypothetical patient.

with *Cardiac Interventions Today*, Dr. Khalaf describes his experience with SavvyWire, which has become an integral tool in his TAVR practice, improving the flow of the procedure and optimizing TAVR for efficient, predictable outcomes in support of lifetime patient management.



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We are hearing a lot about lifetime patient management and the importance of hemodynamics with respect to TAVR procedures. What does this mean to you and your patients?

When considering hemodynamics for long-term patient management after TAVR, we pay close attention to structural details such as aortic annular size and type of valve (intra-annular vs supra-annular). Post-TAVR hemodynamics are especially important because this is essentially the “battery life” of the valve. We all know that bioprosthetic valves don’t necessarily last forever, so longevity of the valve with respect to hemodynamics is of the utmost importance.

Why do standardized invasive hemodynamic measurements for TAVR procedures matter

versus echocardiography-derived measurements? How has SavvyWire been beneficial in general to your TAVR procedures?

I was trained to always recross the newly implanted TAVR valve and obtain an invasive measurement as opposed to simply relying on echo gradients post TAVR. It’s exceptionally important to ensure there is a satisfactory result and that the pressure gradient has been adequately reduced. For me, this is the gold standard.

The SavvyWire has optimized this process in an extraordinary way. Improved efficiency is key. The TAVR procedure can be long and tedious, so any advances in technology to minimize steps are a game changer. After valve deployment and walking out the delivery system, we simply reconnect the SavvyWire to the hemodynamic system to obtain an instantaneous pressure gradient. The SavvyWire has eliminated the extra step of having to recross a newly implanted valve with an additional catheter and potentially re-zero the transducers. The combination of LV pacing and instantaneous hemodynamics makes the SavvyWire exceptional, not to mention the excellent support it provides during the procedure.

The SavvyWire is accurate and efficient. While using the SavvyWire initially, I would perform my own invasive comparison with the LV and aortic catheters, and I found there was no discordance in readings. I now rely solely on the hemodynamics obtained with the SavvyWire. I use the LV pigtail catheter now only to insert the SavvyWire, completely eliminating the step of hooking to the transducer. Both the aortic valve mean gradient and LV end-diastolic readings have been impressively accurate.

Do you use the SavvyWire for LV pacing? What can you tell us about that experience?

LV pacing with the SavvyWire has been a marvelous experience. I have not experienced loss of capture. We ensure the wire has a little forward tension, and the safety loop in the wire design gives us that extra sense of confidence as well. The process has been easy and efficient, and it has eliminated the need for a transvenous pacemaker. Similar to the hemodynamic benefits of the wire, this again saves steps.

What would you say to a peer who has not yet tried SavvyWire?

I would highly recommend the SavvyWire for all TAVR cases. It’s essentially a game changer for TAVR. Saving steps, improved efficiency, high-grade accuracy—trust me, you won’t be disappointed. Thanks to SavvyWire for making my difficult job a little easier. Love at first try! ■