

Radiologist uses virtual reality as powerful training tool

March 23 2018, by Joshua Barney



Ziv Haskal, MD, of the University of Virginia Health System, watches himself perform a radiology procedure in virtual reality. Credit: Josh Barney | UVA Health System

Physicians, trainees and even laypeople can now stand right beside an expert radiologist as he performs one of the most difficult medical

procedures of its kind - in virtual reality.

Ziv Haskal, MD, of the University of Virginia Health System, has created a dramatic teaching tool using the power of virtual reality. Whether watched on a high-end VR system or an inexpensive cardboard viewer, Haskal's virtual procedure puts the viewer right next to him as he creates a new blood vessel in a patient's liver through a small nick in the patient's neck.

It's a complicated procedure - Haskal calls it an "interventional radiology heptathlon" - and his use of VR is set to transform how it is taught. "The current means of teaching is a physical person has to arrive ... and go over with the doc beforehand. Or they have to look at a lousy 2D animation on a screen," Haskal said. "Once you put [VR] glasses on people, it's like you walk them through a completely different door."

IR in VR

From inside the VR goggles, viewers can look around in 360 degrees as the procedure, known as a transjugular intrahepatic portosystemic shunt, unfolds around them. Haskal guides them step-by-step through the entire procedure, and strategic use of picture-in-picture lets the viewer see both what Haskal is doing and what he is seeing.



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Haskal designed the VR experience as a teaching tool for physicians and trainees, but he can foresee many other game-changing applications. VR might be used to show a patient what to expect during a procedure, to teach a nursing student what must be kept sterile in an operating room or to provide a refresher for physicians who have not performed the procedure recently.

"Watching it in a 2D animation, listening to a lecture, watching a [physician](#) on a video simply fails to convey the subtleties of the [procedure](#)," Haskal said. "We're putting the viewer in the actual environment, where they can return again and again."

Lifting the Curtain

Haskal debuted the VR [tool](#) last weekend at the SIR 2018 Scientific Meeting in Los Angeles. He plans to make the VR publicly available to everyone, for free, on the *Journal of Vascular and Interventional Radiology* [website](#).

Ultimately, Haskal hopes to create many more [virtual-reality teaching](#) tools for healthcare professionals. "With this approach," he said, "doctors are simply going to be able to do things better."

Provided by University of Virginia

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