



Innovations

Stereo virtual dissection: An innovative 3D visualization technique



Figure. Virtual dissection (upper panel) and stereo virtual dissection image (lower panel) from a patient with sinus venous defect (#) and a small ostium secundum atrial septal defect. The lower panel when viewed using red-blue anaglyph image, on screen or in print version, provides enhanced 3D visualization of intracardiac anatomy with in-built depth perception. PA, pulmonary artery; RV, right ventricle; SCV, superior caval vein; RUPV, right upper pulmonary vein.

Video available at ijmr.org.in.

Contrary to common belief, human beings do not have the 3D vision. Instead, it is the depth perception which creates an illusion of the third dimension. The depth perception necessitates different perspectives of an image reaching our left and right eye, respectively.

This innovation, 'stereo virtual dissection' was developed by the author in the department of Cardiology, All India Institute of Medical Sciences, New

Delhi, India, in 2019. An open source Mac-based software, Horos, was used to create a closely overlapping red and blue set of virtual dissection images from computed tomographic angiography. These images, when seen using a red-blue anaglyph glass, send out colour as separated dissimilar inputs to each eye which in turn permits enhanced perception of the third dimension (Figure and Video). Moreover, the depth perception is preserved in the printed format of the anaglyph images.

There are obvious advantages of such enhanced 3D visualization in medical education and clinical decision-making. Currently, being tested for cardiac imaging, a similar approach is likely to be useful in other fields of medicine.

Conflicts of Interest: None.

Saurabh Kumar Gupta

Department of Cardiology, All India Institute of
Medical Sciences, New Delhi 110 029, India

**For correspondence:*
drsaurabhmd@gmail.com

Received November 19, 2019