

Three-Dimensional microscopic surgical videos

Three-Dimensional imaging and videos are a very useful tool in the neurosurgical training, although unfortunately the 3D systems available have a very high cost. The objective of a study of Campero et al. was to describe a novel and low cost 3D microsurgical video system.

To obtaining the 3D videos they use a surgical microscope, two video adapters, two cameras and HDMI cable. A video editor program has been used for processing the videos. For the projection, they used a computer with Powerpoint, a video splitter, DVI cables, two projectors, two polarization filters and a "silver screen" with polarized glasses.

By using two equal cameras and video adaptors in each beam splitter port was possible to obtain two videos that were equivalent to the images received by both eyes'surgeon. Using the video signal of both cameras to process them to obtain a 3D stereoscopic recording with the Final Cut program. The polarized 3D format allowed us the best projection conditions. It does not alter the original colors of the videos and its prolonged visualization was more comfortable. The main advantage of the method previously described is the ability to show in a realistic way the spatial relationships and the depth of the structures captured with the microscope.

It was presented in a clear and detailed way how to create and use a low cost 3D surgical video system ¹⁾.

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Campero A, Baldoncini M, Villalonga JF, Abarca-Olivas J. Three-Dimensional microscopic surgical videos: a novel and low cost system. World Neurosurg. 2019 Aug 30. pii: S1878-8750(19)32295-8. doi: 10.1016/j.wneu.2019.08.139. [Epub ahead of print] PubMed PMID: 31476454.

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