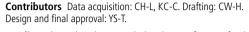# Feasibility and workflow analysis of IV-DSA-based augmented reality-guided brain arteriovenous malformation resection in a hybrid operating room: i-Flow tailored method

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ABSTRACT

Augmented reality (AR) has emerged as a promising technology in various medical fields.[1 2] In the context of brain arteriovenous malformation (bAVM) surgery, AR offers the potential to enhance surgical visualization and improve procedural accuracy.[3 4 5 6] This report aims to explore the application of digital subtraction angiography (DSA) from an IV contrast injection (IV-DSA) in AR-guided resection of bAVMs in a neurosurgical hybrid operating room.

The workflow of IV-DSA-based AR-guided surgery for the resection of bAVMs consists of four main components: (1) acquiring source images through i-Flow tailored or multiphase scans (Siemens, Germany); (2) labelling targets in the workstation using Smartbrush software (Brainlab, Westchester, Illinois, USA); (3) using the Brainlab Curve navigation system; and (4) merging microscopic AR fusion using Zeiss Kinevo (AG, Germany). In video 1 we show the entire workflow and introduce i-Flow tailored IV-DSA data acquisition in the hybrid operating room. In summary, IV-DSA-based augmented reality is an innovative technique for bAVM surgery.

Video 1 -i-flow tailored iv-DSA

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