Haptic

Robotic automation and haptic guidance have multiple applications in neurosurgery.

Haptic technology, or haptics, is a tactile feedback technology which recreates the sense of touch by applying forces, vibrations, or motions to the user.

Ribeiro de Oliveira et al, describe a training model for neurointerventional procedures using the human placenta (HP), which affords haptic training with significantly fewer resource requirements, and discuss its validation.

Twelve HPs were prepared for simulated endovascular techniques. Training exercises performed by interventional neuroradiologists and novice fellows were placental angiography, stent placement, aneurysm coiling, and intravascular liquid embolic agent injection.

The endovascular training exercises proposed can be easily reproduced in the HP. Face, content, and construct validity were assessed by 6 neurointerventional radiologists and 6 novice fellows in interventional radiology. CONCLUSIONS The use of HP provides an inexpensive training model for the training of neurointerventionalists. Preliminary validation results show that this simulation model has face and content validity and has demonstrated construct validity for the interventions assessed in this study [1].

1)
Ribeiro de Oliveira MM, Nicolato A, Santos M, Godinho JV, Brito R, Alvarenga A, Martins AL, Prosdocimi A, Trivelato FP, Sabbagh AJ, Reis AB, Maestro RD. Face, content, and construct validity of human placenta as a haptic training tool in neurointerventional surgery. J Neurosurg. 2015 Oct 9:1-7. [Epub ahead of print] PubMed PMID: 26452122.

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