

Surgical Simulation in Temporal Bone Surgical Radio-Anatomy Learning

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Introduction and Aim: We aimed to evaluate high-fidelity virtual reality simulation in learning of temporal bone radio-anatomy during ENT residency. **Methods:** Fifteen ENT residents completed a radiological temporal bone anatomical testing before and after five training sessions on the VOXEL-MAN Tempo® surgical simulator. Secondary investigation: residents also completed a personal subjective assessment after these training session and residents' technical skills were assessed on cadaveric temporal bones. **Results:** Primary outcome: Residents significantly improved their performance on the temporal bone radiological anatomy test after completing virtual training on the simulator. Secondary outcomes: The personal assessment survey indicated that 100% of the residents would integrate this virtual tool within the learning methods. No significant correlation was found between virtual simulator performances and surgical performances on cadaveric model, but a significant correlation was shown between the anatomical testing result and the performances on cadaveric model. **Conclusions:** This study suggested that a high-fidelity virtual reality simulator, the VOXEL-MAN Tempo® device, improved teaching of temporal bone anatomy and specifically increased trainees' practical knowledge regarding radiological anatomy of temporal bone.