doi:10.1017/S0022215116004321

Modern training of otologic surgery (N835)

ID: 835.2

Development and validation of a temporal bone prototype

Presenting Author: **David Bakhos**

David Bakhos
Tours Hospital

Learning Objectives:

Background: Inexperienced otologists require training on the temporal bone drilling process, prior to any surgical activity. The shortage of cadaveric temporal bones exerts pressure to create realistic physical prototypes. We described the devlioppement and validation of an artificial temporal bone (TB) model devoted to surgical training and education.

Material and Methods: A helical computed tomographic (CT) scan was used to acquire high-resolution data of cadaveric TB. Digital imaging and communications in medicine data were converted into .stl files after data processing. Cadaveric TBs were prototyped using stereolithography. Validation of the prototype needed several steps.

First, we validated the TB prototype using on CT scan and visualization of anatomic landmarks during TB drilling of the cadaveric TBs and prototyped bones. The second step was the validation of the prototype with otologist experts. Twenty-five prototypes were sent to 25 otologists, accompanied by a 20-item questionnaire in order to have their satisfaction rate and feeling about the prototype. At last, we investigated with a sclae the use of temporal bone prototype for drilling performance during residency.

Results: Concerning the validation of the prototype using CT scan and drilling, measurements of volume and distance showed no significant difference between prototypes and cadaver TBs. Concerning the otologist experts, satisfaction rate was 92 per cent. The overall prototype score was 48.87 out of 60. Limitations of the model included an excessively vivid facial nerve colour and difficulty in identifying the posterior semicircular canal. At last, the use of an artificial TB showed a significant improvement about drilling performance in residency.

Conclusion: The prototype appears to provide an attractive solution to the shortage of cadaveric TBs and interest in the model for drilling technique training for inexperienced otologists ans show an improvement in term of performance.

doi:10.1017/S0022215116004333

Modern training of otologic surgery (N835)

ID: 835.3

Dissection as a teaching tool in otologic surgery

Presenting Author: **Valérie Franco-Vidal**

Valérie Franco-Vidal, Damien Bonnard, Vincent Darrouzet
Bordeaux University Hospital

Learning Objectives:

Ear surgical techniques require progressive training. Cadaveric temporal bone drilling practice constitutes an essential stage in training for the surgical approach to these complex anatomic structures. The resident in training must master the use of the surgical microscope, the burr, and fine drilling instruments used in otological dissection. This kind of practice is also necessary to learn anatomy of the temporal bone in surgical position which is different from the imaging and the classical anatomical representation. Since a few years, due to economical reasons, the operating duration has to be more and more limited, and time spent for teaching in the operating room is dramatically reduced. Cadaveric temporal bone dissection is a good alternative teaching method. Finally, learning from its mistakes is necessary in surgical practice and it is of course safer on cadaveric specimen than on living beings. The pedagogic interest of this kind of teaching has been largely demonstrated, and is an additional tool, with virtual surgery and simulators increasing surgical practice acquisitions safely.

doi:10.1017/S0022215116004345

Modern training of otologic surgery (N835)

ID: 835.4

Interest and validity of 3D simulator in otologic surgical training program

Presenting Author: **Cécile Parietti-Winkler**

Cécile Parietti-Winkler
University Hospital of Nancy

Learning Objectives:

Middle ear surgery requires thorough knowledge of middle-ear anatomy and great surgical precision. However, training tools remain limited: absence of animal model and lack of access to cadaveric temporal bone hampers the