Editorial on Evaluation of simulation training in cardiothoracic surgery: The Senior Tour perspective

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Objective

The study objective was to introduce senior surgeons, referred to as members of the "Senior Tour," to simulation-based learning and evaluate ongoing simulation efforts in cardiothoracic surgery.

Methods

Thirteen senior cardiothoracic surgeons participated in a 2½-day Senior Tour Meeting. Of 12 simulators, each participant focused on 6 cardiac (small vessel anastomosis, aortic cannulation, cardiopulmonary bypass, aortic valve replacement, mitral valve repair, and aortic root replacement) or 6 thoracic surgical simulators (hilar dissection, esophageal anastomosis, rigid bronchoscopy, video-assisted thoracoscopic surgery lobectomy, tracheal resection, and sleeve resection). The participants provided critical feedback regarding the realism and utility of the simulators, which served as the basis for a composite assessment of the simulators.

Results

All participants acknowledged that simulation may not provide a wholly immersive experience. For small vessel anastomosis, the portable chest model is less realistic compared with the porcine model, but is valuable in teaching anastomosis mechanics. The aortic cannulation model allows multiple cannulations and can serve as a thoracic aortic surgery model. The cardiopulmonary bypass simulator provides crisis management experience. The porcine aortic valve replacement, mitral valve annuloplasty, and aortic root models are realistic and permit standardized training. The hilar dissection model is subject to variability of porcine anatomy and fragility of the vascular structures. The realistic esophageal anastomosis simulator presents various approaches to esophageal anastomosis. The exercise associated with the rigid bronchoscopy model is brief, and adding additional procedures should be considered. The tracheal resection, sleeve resection, and video-assisted thoracoscopic surgery lobectomy models are highly realistic and simulate advanced maneuvers.

Conclusions

By providing the necessary tools, such as task trainers and assessment instruments, the Senior Tour may be one means to enhance simulation-based learning in cardiothoracic surgery. The Senior Tour members can provide regular programmatic evaluation and critical analyses to ensure that proposed simulators are of educational value.

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