Cureus

The Role of Simulation Training in the Endonasal Transsphenoidal Approach to the Pituitary Fossa

Open Access
Abstract
Published 11/20/2022

Hannah L. Brennan [1] , Andrew Robart [1] , Stephanie Ruth Roberts [2] , Joshua Conway [1] , Ali Sherazi [3] , Zachary Dwyer [1] , CHRISTOPHER P. PATEY [4]

1. Medicine, Faculty of Medicine, Memorial University of Newfoundland, St. John's, CAN 2. Medicine, Memorial University of Newfoundland, St. John's, CAN 3. Medical Student, Dalhousie Medicine New Brunswick, St. John's, CAN 4. Emergency Medicine, Carbonear General Hospital, Carbonear , CAN

Corresponding author: Hannah L. Brennan, hlb423@mun.ca

Categories: Medical Education, Otolaryngology, Neurosurgery
Keywords: neurosurgery, surgical skills-based training, otolaryngology-head & neck surgeons, endonasal endoscopic transsphenoidal surgery, simulation in medical education

How to cite this abstract
Brennan H L, Robart A, Roberts S, et al. (November 20, 2022) The Role of Simulation Training in the Endonasal Transsphenoidal Approach to the Pituitary Fossa. Cureus 14(11): a819

Abstract

Background: The minimally invasive endoscopic nasal approach has been well established for lesions on the skull base, and utilized by otolaryngologists and neurosurgeons. It has been demonstrated that there is a learning curve associated with the endoscopic endonasal transsphenoidal approach to the pituitary fossa, highlighting the role for educational innovation through simulation, like the TNS box by UpSurgeOn.

Objective: To elucidate the role and benefit of simulation training in the endonasal transsphenoidal approach to the pituitary fossa, in terms of anatomy confidence, procedure competency and medical student interest in otolaryngology and neurosurgery.

Methods: Our study sample will include undergraduate pre-clerkship and 3rd year clerkship medical students. Participants will first undergo a pre-session assessment of their knowledge of nasal cavity anatomy and exposure and interest in this procedure and the specialities of neurosurgery and otolaryngology. This will be followed by an information session on the use of the TNS Box, and a 30-minute free-use session. Finally, participants will undergo a post-session test to assess their knowledge of the nasal cavity anatomy, comfort in the procedure, and how their interest and understanding of these surgical specialities were impacted by this simulation experience.

Anticipated results: Given the lack of exposure to specialized surgical skills in undergraduate medical education, the learning curve associated with the endonasal transsphenoidal approach, and the benefits of simulation use in other areas of medical training, we expect that the use of the TNS box will result in an objective increase in student's ability to identify nasal cavity anatomy, subjective increase in their confidence in performing this surgical skill and increased interest in these surgical specialities.

Conclusions/Significance: Our findings will help inform education and current exposure of specialized surgical skills in undergraduate education. Positive responses from medical student participants would aid in improving surgical simulation access during undergraduate education, and improve endoscopic technique. It will also provide students interested in otolaryngology and neurosurgery insight into the procedures performed within these specialties.