



ARTICLE OF THE MONTH

Emergency Airway Management During Awake Craniotomy: Comparison of 5 Techniques in a Cadaveric Model

Gruenbaum, Shaun E. MD, PhD; Bilotta, Federico MD, PhD†; Bertasi, Tais G.O. MD*; Bertasi, Raphael A.O. MD*; Clifton, William E. MD‡; Gruenbaum, Benjamin F. MD§; De Biase, Gaetano MD‡; Garcia, Diogo M. MD‡; Bojaxhi, Elird MD*; Torp, Klaus D. MD*; Quinones-Hinojosa, Alfredo MD‡ Emergency Airway Management During Awake Craniotomy, Journal of Neurosurgical Anesthesiology: October 13, 2020 - Volume Publish Ahead of Print*

We can't believe that we are almost through 2020, and yet here we are presenting the November 2020 SNACC Article of the Month. This month we are featuring a fantastic simulation study that tests methods for emergently securing the airway during awake craniotomy. Our commentary this month is courtesy of Dr. Indranil "Neil" Chakraborty from the Department of Anesthesiology at the University of Arkansas for Medical Sciences in Little Rock, Arkansas.

Dr. Chakraborty serves and the Division Director of Neuroanesthesiology in the Department of Anesthesiology at the University of Arkansas for Medical Sciences in Little Rock, Arkansas. He completed his initial medical training at Maulana Azad Medical College in New Delhi, India and subsequently completed additional training in anesthesiology at the University of Arkansas. He is actively involved in neuroanesthesia care and boasts being the anesthesiologist for the first known awake craniotomy case done in the state of Arkansas. He was recently recognized for his contributions as he was promoted to the rank of Professor.

As always, readers are welcome to join us for further discussion and feedback on the SNACC [Twitter](#) feed, or on [Facebook](#).

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Oana Maties, MD, Amie Hoefnagel, MD, Shilpa Rao, MD, and Nina Schloemerkerper, MD

Commentary

Dr. Indranil “Neil” Chakraborty

*Department of Anesthesiology at the University of Arkansas for Medical Sciences
Little Rock, Arkansas*

Emergency management of the airway during awake craniotomy (AC) is a scenario every anesthesia team undertaking the procedure should plan and prepare for. Elective airway intervention is also a part of awake craniotomy protocols in several centers. Planning is more relevant in patients with potential difficult airway and complicated patient positions such as the lateral position. This study explored 5 airway rescue techniques using a cadaver that was positioned to simulate AC conditions. Nine practitioners with a range of years of experience each attempted to secure the airway with 5 different techniques: LMA, oral FOB through LMA, video laryngoscopy, oral FOB, and nasal FOB. They found that LMA is the fastest and most reliable way to secure the airway. The authors also found that fiberoptic scope via LMA and video laryngoscope also gave 100% success rate albeit after a longer time. They found oral and nasal fiberoptic intubation attempts to be slow and with poorer success rate.

Choosing LMA for emergency airway management is logical, as most anesthesia personnel have significant experience with their use and they also feature prominently in the ASA difficult airway algorithm¹. Video laryngoscope is also being extensively used in anesthesia practice. Their use in awake craniotomy cases under emergency conditions, especially when the intubator is not at the head end of the patient, can be challenging and will need practice and planning. Use of fiberoptic scope via in-situ LMA is a good option but also requires preparation and planning so that the equipment is available under emergent circumstances.

This study has some limitations. This is a cadaver simulation study with a limited number of operators. The clinical airway variability in actual patients can be a practical complicating factor. The option of intubating LMA was not studied, which could be a better and quicker option of successfully securing an endotracheal tube via an in-situ LMA without the need of a fiberoptic scope.

References:

1. Practice Guidelines for Management of the Difficult Airway: An Updated Report by the American Society of Anesthesiologists Task Force on Management of the Difficult Airway. *Anesthesiology* February 2013, Vol. 118, 251–270