Cricoid Pressure During Intubation
Research and Survey of Nurse Anesthetists

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Purpose

The purpose of this study was to assess the knowledge of certified registered nurse anesthetists (CRNAs) and student registered nurse anesthetists (SRNAs) at Wake Forest Medical Center regarding the effectiveness, value, and alternatives to the cricoid pressure technique, and possible alternatives that would satisfy the same goal as this technique.

Literature Review

In 1965, British Anesthesiologist Brian Sellick published a description of techniques to occlude the esophagus of patients undergoing anesthesia as a means to prevent regurgitation and pulmonary aspiration of gastric contents. Subsequent case reports describe Sellick’s maneuver as the first described attempt to occlude the esophagus of a patient undergoing anesthesia. However, his technique was only used in a small case series and not a controlled scientific investigation, his technique of applying pressure to the cricoid cartilage has become a widely accepted practice. Sellick described the correct way to perform this maneuver is to apply backward pressure of the cricoid cartilage against the bodies of the arytenoid cartilage in an attempt to occlude the esophagus. More recently, the effectiveness of Sellick’s maneuver is under question. Studies show controversies on the amount of pressure that should be applied (Lamb & Fields, 1995), inaccuracies in pressure gauging (Aatty & ED nurses) about the anatomic landmarks the pressure should be applied to (Black, Carin, & Doig, 2012), and that Sellick’s maneuver may increase the risk of aspiration rather than decrease it (Eckland et al., 2004) because the esophagus might not truly be completely occluded (Smith et al., 2005).

Methods

An anonymous survey was created online and sent out to a total of 100 CRNAs who worked at Wake Forest Baptist University Medical Center and 46 SRNAs who attended the Nurse Anesthesia Program at the Wake Forest School of Medicine in the Spring of 2016 which resulted in a response rate of 47.9%. An informal, anonymous survey was created on SurveyMonkey and sent out to a total of 100 CRNAs and 46 SRNAs.

Results

The results demonstrated that only 4.9% of respondents agreed that applying cricoid pressure occluded the esophagus greater than 75% of the time. 76.2% thought that it further diminished the view of the airway during laryngoscopy. 98% of respondents knew at least one way in which it increased the risk for regurgitation (16.1%), the use of a different technique called backward, elevating the head of the bed) could be a suitable alternative, and another 25.8% suggested the use of nasogastric or orogastric tubes to suction stomach contents as an appropriate option. These were followed by the percentage of the time do you think that cricoid pressure does occlude the esophagus? 75% percent of the time or less than 25% percent of the time. In your opinion, which is the most important reason to perform Sellick’s maneuver? 40.6% respondents believed that it enhances the view of the larynx, 35.7% respondents believe it is very effective. 9.2% respondents believe it is neutral, 7.6% respondents believe it is less than effective. In your opinion, the most important reason to perform Sellick’s maneuver is to prevent aspiration or aspiration of stomach contents during induction of anesthesia. Average knowledge level of the application of cricoid pressure was 60.9/100.

Evaluation

This unsual technique is not only performed by CRNAs or SRNAs, but by OR, ICU, and ED nurses as well, and could potentially be patient’s loss of air at each time it is performed. In a day where evidence-based practice is rife in the medical field, it is crucial for health care providers to re-evaluate this technique and implement more effective methods to prevent pulmonary aspiration.

Implications for Nursing Practice

What Does This Mean for Evidence Based Practice?

Cricoid pressure is not the only practice that is scientifically not beneficial to patients. There are many more practices in nursing that are lagging behind the science. We must continue to push for our interventions to be backed by science and nurses must continue to accept and encourage change.

Nurses should continue to educate themselves and work together so we can best take care of our patients and keep them safe.

References