

Critically ill patients that experienced the gargle test for successful extubation treatments on the head and neck a new test

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ABSTRACT

For safe extubation and patient safety, it is essential to improve predictive methods for spotting airway edoema. With patients admitted to the critical care unit, the goal of this study was to analyse the diagnostic reliability of the Gargle test, a new tool for determining airway edoema and forecasting successful extubation. Patients who underwent head and neck procedures and were hospitalised to the ICU were included in this prospective observational study. The same technique was used to wean each patient. First, the quantitative and qualitative Cuff Leak Tests were used, and then the GT using 0.9% normal saline. Calculations were made to determine the accuracy, sensitivity, specificity, positive predictive value, and negative predictive value. The study has one hundred and eighteen participants. Low levels of agreement existed between GT and CLT. The GT in contrast to CLT. Exhibited better accuracy, specificity, and sensitivity. The predicted cut-off for GT was 16.5%. The GT is a quick, reliable test that can be used as a new test in the ICU to identify airway edoema and forecast when a patient undergoing head and neck surgery will be able to be safely extubated.

Keywords: Extubation failure; Cuff leak test; Gargle test; Critical care

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INTRODUCTION

It is crucial and difficult to decide whether to extubate the patients in the intensive care unit [1]. On the one hand, a longer stay in the intensive care unit and the hazards of invasive mechanical ventilation are linked to delaying the removal of endotracheal tubes [2]. On the other side, making the wrong choice to extubate a patient who has anatomical issues, has undergone trauma, head and neck surgery, has a limited range of motion in the neck, or who has a restricted mouth opening can lead to a difficult intubation and, ultimately, a life-threatening situation [3]. Laryngeal edoema affects between 0.6% and 36.8% of patients, re-intubation affects up to 80% of patients, mortality affects between 30% and 40% of patients, and challenging extubation increases pulmonary complications, per research [3]. The elevated incidence of stridor upon extubation has been linked to laryngeal edoema or vocal cord dysfunction, decreased tracheal cross-sectional area, and other factors [4]. Various research populations, female gender, size of the endotracheal tube, and intubation time. Thus, for safe extubation, developing prediction methods and identifying airway edoema are essential. Predicting the patient's tolerance for extubation and whether reintubation is still feasible is crucial. For patient safety, evaluation procedures need to be improved since they let intensivists assess patients more accurately and choose whether to extubate them in challenging situations [5]. As a result, medical professionals try to use more trustworthy methods for airway evaluation [6]. The quantitative/qualitative cuff leak test, tracheal ultrasonography optic fibro copy, direct laryngoscopy examination, video laryngoscopy, and flow-volume curves for extra-thoracic stenosis are some of the techniques that are currently accessible. Direct laryngoscopy makes it simple to check tongue and pharyngeal edoema, but laryngeal edoema examination and its When you gargle, you put something in your mouth, tilt your head back, use your throat to blow bubbles of the liquid while making a gargling sound, and then spit it out to clean your mouth and throat [7]. It seems hard for an intubated patient to gargle [8]. However, we discovered that when the balloon cuff of the endotracheal tube is deflated during the leak test, air moves from the lung to the mouth and around the tube [9]. We also discovered that some patients were able to gargle their secretions and had reasonable control and function over their laryngeal muscles. This gave us the idea to evaluate gargling as a new test [10]. Consequently, this research was done to assess the Gargle test's diagnostic

efficacy. For the evaluation of airway edoema in patients who have head and neck procedures, as well as to forecast effective extubation. The patient was weaned from the ventilator and sat down, similar to the qualitative CLT approach. The patient took a rather deep inhalation once tracheal and oral suctioning was completed, then held his or her breath. The endotracheal tube was then occluded while the patient held their breath, and 3-5 ml of normal saline 0.9% was placed in their mouth. The patient was instructed to exhale slowly and deeply while gargling water in the back of his mouth. This showed that there was a sufficient amount, flow, and power of air leaking around the tube. Additionally, it demonstrated the patient's capacity to keep the airway open and avoid aspiration. Lastly, the patient was instructed to spit the water out into a plate while bending forward. The outcome of CLT was used as the basis for the extubation decision.

DISCUSSION

The extubation was approved by different anaesthesiologists who carried out all the examinations. The researcher did not know the GT's outcome and only noted the patient's stridor, dyspnoea, and verbalization abilities following extubation. Extubation failure was defined as the requirement for an early reintubation within the following 12 hours due to respiratory distress brought on by airway edoema and stridor. Age, gender, the type of surgery, the length of anaesthesia and surgery, comorbidities, the length of mechanical ventilation, the type of intubation, whether or not extubation was successful, and the outcomes of both quantitative and qualitative CLT and GT were all taken into consideration. For a safe extubation and for the protection of the patient, prediction techniques for the detection of airway edoema must be improved. In this study, patients admitted to the intensive care unit had their diagnostic accuracy of the Gargle test, a new tool for determining airway edoema and forecasting successful extubation, assessed. The GT is a quick, reliable test that can be used as a new test in the ICU to identify airway edoema and forecast when a patient undergoing head and neck surgery will be able to be safely extubated. It is crucial and difficult to decide whether to extubate the patients in the intensive care unit. On the one hand, a longer stay in the intensive care unit and the hazards of invasive mechanical ventilation are linked to delaying the removal of endotracheal tubes. The other hand On the other side, making the wrong choice to extubate a patient with anatomical issues, trauma, head and neck procedures, a limited range of

motion in the neck, and restricted mouth opening can lead to challenging intubation, which ultimately may be life-threatening. Direct laryngoscopy makes it simple to examine tongue and pharyngeal edoema, but it might be difficult to determine the severity of laryngeal edoema when an endotracheal tube is present.

CONCLUSION

The test should ideally be administered to each patient just prior to extubation. The assessment techniques have drawbacks since they involve equipment, examiner expertise, are associated with a limited degree of accuracy, or require tube removal. When you gargle, you put something in your mouth, tilt your head back, use your throat to blow bubbles of the liquid while making a gargling sound, and then spit it out to clean your mouth and throat. It seems hard for an intubated patient to gargle. However, we discovered that when the balloon cuff of the endotracheal tube is deflated during the leak test, air moves from the lung to the mouth and around the tube. We also discovered that some patients were able to gargle their secretions and had reasonable control and function over their laryngeal muscles. This gave us the idea to evaluate gargling as a new test. Consequently, this research was done to assess the Gargle test's diagnostic efficacy. For the evaluation of airway edoema in patients who have head and neck procedures, as well as to forecast effective extubation. The patient was first taken off the ventilator. Then, the secretions from the mouth and trachea were suctioned. The endotracheal cuff was then deflated and the patient was then made to sit up. The patient was then instructed to breathe through their mouth once the endotracheal tube's entrance was blocked. If the patient could complete five breathing cycles without exhibiting any symptoms of suffocation or airway obstruction, it was concluded that the test was appropriate. The patient was weaned from the ventilator and sat down, similar to the qualitative CLT approach. The patient took a rather deep inhalation once tracheal and oral suctioning was completed, then held his or her breath. The endotracheal tube was then occluded while the patient held their breath, and 3-5 ml of normal saline 0.9% was placed in their mouth. The patient was instructed to exhale slowly and deeply while gargling water in the back of his mouth. This demonstrated a suitable air leak around the tube in terms of volume, flow, and power. Additionally, it demonstrated the patient's capacity to keep the airway open and avoid aspiration. The patient was then instructed to stoop forward and spit the water into a dish.

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