

Orotracheal intubation of morbidly obese patients, comparison of glidescope video laryngoscope and the LMA cTrach with direct laryngoscopy

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Morbidly obese patients are at increased risk of difficult mask ventilation and intubation as well as increased risk of hypoxemia during tracheal intubation. Recently, new video-assisted intubation devices have been developed. The GlideScope videolaryngoscope and LMA CTrach (CT) allows continuous video-endoscopy of the tracheal intubation procedure.

Objective: This study is to determine whether the GlideScope videolaryngoscope (GVL) and the LMA CTrach (CT) provide the best airway management, measured primarily in intubation difficulty scale (IDS) scores, time and numbers of intubation attempts, and improvement in the intubation success rate of morbidly obese patients when compared with the direct Macintosh laryngoscope (DL).

Materials and Methods: After Ethics' Committee approval, 90 morbidly obese patients (BMI >35 kg/m²) scheduled for general, gynecological, and bariatric surgery were included in this prospective study. Patients were randomly assigned in three groups: tracheal intubation using direct laryngoscopy (DL), GlideScope videolaryngoscope (GVL) or the LMA CTrach (CT). Characteristics and consequences of airway management were evaluated. The primary outcome was the intubation difficulty scale score (IDS), Secondary outcomes were the intubation time, overall success rate, number of attempts, Cormack-Lehane grade, subjective difficulty of intubation, desaturation and upper airway morbidity.

Results: Difficulty in facemask ventilation was similar in the three groups. IDS scores were significantly lower with GVL and CT than with DL. The mean TTI was 14 s faster in patients intubated with the GVL (86 s, IQR: 68-115) compared with DL (100 s, IQR: 80-150), and was 34 s faster when compared with CT (120 s, IQR: 95-180). The success rate of tracheal intubation was lower with the DL (80%) compared with the GVL (100%) or the CT (100%). Six cases of failed intubation occurred in group DL, four patients from the six patients were intubated successfully with GVL, and two patients were intubated with the CT. Both the GVL and the CT improved the Cormack and Lehane view obtained at laryngoscopy, compared with the DL. Significantly high percent of patients in DL (43%) and CT (27%) required optimization maneuvers (external laryngeal pressure) compared with GVL (0%). In the CT group, 30% of the patients required laryngeal mask manipulation (for view optimization) compared with (0%) in GVL and DL groups.

Conclusion: The GlideScope videolaryngoscope and the LMA CTrach reduced the difficulty, improved laryngoscopic views and overall success rate of tracheal Intubation to a similar extent compared with the Macintosh laryngoscope in morbidly obese patients. The GVL improved intubation time for tracheal intubation compared with the CT and DL but no patient became hypoxic with CT because of prolonged intubation time.

Biography

Gamal T. Yousef has completed his Ph.D. at the age of 25 years from Zagazig University and postdoctoral studies from faculty of medicine Zagazig University. He is Professor of Anesthesia and intensive care in Zagazig University and Associate Professor in Umm-Al-Kura University. He has published more than 20 papers in reputed journals.

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