Laryngoscope

Dataset Introduction

Abstract

This data set contains 99 adult patients with a body mass index between 30 and 50 kg/m^2 who required orotracheal intubation for elective surgery. Patient demographics, airway assessment data, intubation success rate, time to intubation, ease of intubation, and occurrence of complications were recorded. The dataset is cleaned and complete. There are no outliers or data problems. These are data from a study by Abdallah et al. "A Randomized Comparison between the Pentax AWS Video Laryngoscope and the Macintosh Laryngoscope in Morbidly Obese Patients". *Anesthesia Analgesia* 2011; 113: 1082-7.

Background

Difficult and failed tracheal intubations are among the principal causes of anesthetic-related mortality and morbidity. Because a good laryngeal view facilitates successful tracheal intubation, new technologies have been introduced to improve visualization. Video laryngoscopes, for example, often use miniature cameras to facilitate visualization of the laryngeal inlet with no need to align the oral, pharyngeal, and tracheal axes.

The Pentax AWS is a novel video laryngoscope, available in Japan since 2006, which is designed to facilitate intubation by providing a video image of the glottis. It incorporates a miniature video camera and a battery-powered, built-in LCD monitor. A disposable blade is attached to the base system. Incorporation of an LCD display makes it possible to view the glottis simultaneously with insertion of the endotracheal tube (ETT). In this regard, it differs from some other video laryngoscope designs that use external monitors. The Pentax AWS also differs in having a side channel that positions and guides the ETT. Reports suggest that the Pentax AWS can help intubate, but randomized data remain sparse.

Study Objective

This study therefore tested the hypothesis that intubation with the Pentax AWS would be easier and faster than with a standard Macintosh laryngoscope with a #4 blade.

Study Design

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Randomized Clinical Trial

Subjects & Variables

The fraction of obese and morbidly obese patients is rapidly increasing worldwide. Tracheal intubation can be difficult in these patients because the limited oropharyngeal space may impede adequate visualization. Thus it was decided to test the laryngoscope performance on patient cases for whom the most technology benefit would be anticipated.

The study enrolled patients with a body mass index between 30 and 50 kg/m^2 who required orotracheal intubation for elective surgery. After oxygen administration and induction of general anesthesia, patients were randomly allocated to intubation using either a conventional Macintosh laryngoscope size 4 blade (Macintosh group, n = 49) or the Pentax AWS (Pentax group, n = 50). Of 105 randomized patients, 4 did not complete the study because of cancellation of surgery or because the laryngoscopist could not arrive to the operating room on time, and 2 patients in the Pentax group had missing primary outcomes. Thus, data is available for the 99 patients who were analyzed.

The primary outcome of time to intubation was defined as time from start of the first attempt of the insertion of the laryngoscope until a capnogram signal was obtained. If an attempt with the assigned device failed, then another attempt or an alternate technique was used. Intubation using the assigned method within 100 seconds regardless of number of attempts was considered successful. For patients who crossed over to the other method or whose tracheas were intubated after 100 seconds, time to intubation was censored at that technique crossing point or 100 seconds, and labeled as a failure in the analysis.

The glottic view for each laryngoscopy was graded using the Cormack-Lehane grading system. The ease of tracheal intubation on a Likert scale (from 0 = extremely easy to 100 = extremely difficult), the presence of any blood staining, and the severity of any postoperative sore throat were also recorded during a postoperative visit the following day by observers unaware of the intubation method.

N = 99 subjects

22 variables

Citation(s)

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