

induction agent, and gained considerable experience with the technique which he wrote up for his postgraduate medical degree at Cambridge University in 1941. Organe wrote a definitive paper on using Pentothal alone as an anesthetic agent for intubation of the trachea.

Later, Organe (writes Stanley Feldman in his chapter), working with Paton and Zaimis at the Royal College of Surgeons, studied the relationship between the structure of the polymethylene series of curare-like drugs and their clinical activity. They demonstrated that C10 (decamethonium) caused muscle paralysis in volunteers, however C5 (pentamethonium) did not. Serendipitously, they found that C5 caused hypotension in a volunteer. The researchers immediately saw the potential of lowering blood pressure by means of a ganglion blocking drug, and this event was "destined to be the beginning of hypotensive anesthesia." Organe was to play important roles in the establishment of the Faculty of Anaesthetists of the Royal College of Surgeons and in the formation of the World Federation of Societies of Anesthesiologists.

Macintosh, Waters, and Beecher (at the MGH) are probably the triumvirate most often associated with the foundation of academic departments of anesthesiology. Soon after assuming the chair, Macintosh invoked the aid of physicists in the Clarendon Physics Laboratory in Oxford. Epstein, a physicist, joined Macintosh, and together they developed a series of anesthetic vaporizers. Macintosh collaborated with Lord Nuffield (William Morris of the MG car) in developing and supplying tank ventilators to British and Commonwealth hospitals for the treatment of respiratory paralysis. Between 1941 and 1945 more than 4,000 vaporizers were produced in the Morris car factory in Oxford, and by 1947, more than 1,750 ventilators had been made in the Morris factory.

In 1944, Macintosh and Mushin designed a study to determine the cause and incidence of deaths under anesthesia. Macintosh's beautifully illustrated books on "Physics for the Anaesthetist" and on various nerve blocks set the standards for clarity in academic anaesthesia and teaching. Sykes writes that Macintosh's major contribution was developing the "academic approach" to all anaesthesia problems, and "moulding Water's concepts to suit the Oxford environment."

This slim volume of "Careers in Anesthesiology" is certainly not the definitive history of early British anaesthesia. However, it is eminently readable and filled with interesting photographs and amusing anecdotes. This book is far more likely to be perused (and then read) by young faculty and residents in their departmental libraries than the usual heavier and more detailed anaesthesia history tomes, which are read by a very limited audience.

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### Core Topics in Airway Management.

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*Core Topics in Airway Management* concisely covers all the basics and some of the unique areas in airway management in 26 chapters, from basic anatomy/physiology through various airway devices/techniques to the problem of airway mortality and medicolegal issues.

Five chapters have been written by Dr. Calder, 3 by Dr. Pierce, and 1 together, thus 9 of the 26 chapters have been written by these two well known experts in this field, resulting in a more uniform approach that is unique and refreshing. Key, groundbreaking, clinically relevant material is presented in a clear and succinct manner, with salient points bulleted at the end of each chapter along with further reading suggestions. Additionally, the authors do not hesitate to clarify controversial areas and provide evidence-based suggestions.

The first three chapters cover basic anatomy, physiology, and physics of the airway. These are important, but unexciting, topics, and the authors do a good job of providing the information in a practical format. Although the authors do not favor the use of airway nerve blocks, it would have been nice to have included a description, as well as illustrations of these blocks in the anatomy chapter. Additionally, figures illustrating the various angles and degrees of motion of the head and neck would have been very helpful. Also, the statement "the gap between the cricoid and thyroid cartilage will not admit a tube wide enough to allow conventional ventilation: some form of jetting device must be used" is contradicted by information provided in Chapter 21 discussing the performance of a surgical cricothyrotomy (CTM): "in the basic technique, a horizontal incision is made through the CTM with a scalpel and a 6.0 mm tube placed into the trachea."

Chapter 4 reviews cleaning and disinfection of airway equipment. This reviewer now knows more about the process of autoclaving than ever before! Although worthy, some of the standards that are mentioned may be unrealistic, including tracking the clinical use of the flexible fiberoptic laryngoscope to the patient in which it was used and marking in the patient's chart that the scope was cleaned.

Chapter 5 gives a brief, but helpful overview of equipment and general principles of airway management. The spectrum of airway management, from femoro-femoro cardiopulmonary bypass to a rapid sequence induction is covered, providing some excellent tenets based on accumulated experience. Although awake intubation is most commonly performed with the flexible fiberoptic laryngoscope, there are many alternative techniques that merit discussion. Those techniques discussed include tracheostomy, retrograde intubation, and rigid bronchoscopy. Alternative techniques not discussed include blind intubation (oral or nasal), direct/indirect laryngoscopy, supraglottic airway devices (SGAs), intubating laryngeal mask airways, lighted stylets, and jet ventilation. This chapter includes the Difficult Airway Society's flowchart published in 2004, but it does not include the most recent version of the American Society of Anesthesiologists' algorithm published in 2003. Rather, it depicts the first version of this algorithm published in 1993.

Chapters 6-14 discuss different airway techniques. Chapter 6 covers SGAs ranging from nasal airways to all the members of the Laryngeal Mask Airway family of devices. Newer SGAs have been introduced into clinical practice, including the Ambu Laryngeal Mask™ (Ambu A/S, Glen Burnie, MD) and the EZ Tube™ (Rusch, Inc., Raleigh, NC), which were not mentioned. Additionally, it would have been helpful to be able to visualize the alternative SGAs that were mentioned in the text. Only figures of the Laryngeal Mask Airway family were illustrated. Also of note, the Pharyngeal Airway Express, which is included in the text, is no longer on the market for clinical use.

Chapter 7 provides excellent tables and figures of the various endotracheal tubes that are available, including endotracheal tubes for laser airway procedures. This chapter nicely covers the history, design, sizing, and cuffs of endotracheal tubes.

Chapter 8 reviews the anatomical basis for direct laryngoscopy, in addition to the preparation and performance of this procedure. Maneuvers to improve laryngoscopy, including optimal external laryngeal manipulation, raising the patient's occiput from the pillow, and having an assistant protrude the patient's mandible by upward pressure of the mandibular rami are discussed. There are several beautiful color pictures, one of which is the internal view of the human larynx, a picture that could have been used and labeled in Chapter 1, replacing the black and white figure provided. Confirmation of tracheal intubation is unnecessarily discussed in this chapter, as it is covered in significant detail in the following chapter. Additionally, there are several newer indirect laryngoscopes that should have been discussed, including the WuScope™ (Achi Corp, San Jose, CA) and UpsherScope™ (Mercury Medical, Clearwater, FL). The video laryngoscopes could have been discussed here, such as the DCI II Video Intubation System™ (Karl Storz Endoscopy, Culver City, CA) and the GlideScope™ (Saturn Biomedical Systems, Inc., Burnaby, British Columbia, Canada), rather than only briefly mentioning them in Chapter 12.

Chapter 9 emphasizes the importance of and methods in which to confirm tracheal intubation. Although the tables are not comprehensive, the most commonly used techniques are listed. There is no single test that is 100% reliable, and the authors point out that a routine of a combination of tests should be developed and utilized by the practitioner.

Chapter 10 reviews extubation techniques, including deep versus awake extubation, as well as extubation criteria. There is no doubt that those individuals in training are receiving less practice and training in extubation, similarly with mask ventilation and intubation, due to the increased use of SGAs in clinical practice. As mentioned in the text, although there are guidelines for extubation of the difficult airway in the United States and Canada, an algorithm for extubation of the difficult airway is lacking.

It is unfortunate that the authors only discussed the Trachlight in Chapter 11. Several more up-to-date lighted stylets are now available, including the Shikani Optical Stylet™ (Clarus Medical, Minneapolis, MN), the Foley Airway Scope Tool™ (Clarus Medical), and the Bonfils Retromolar Intubation Fiberscope™ (Karl Storz Endoscopy, Tuttlingen, Germany/Culver City, CA). Although these devices do not rely on transillumination of the neck, they are fiberoptic lighted stylets that would have fit well in this chapter. In discussing the Trachlight, it should have been mentioned that this device can be used in conjunction with other airway techniques, including direct laryngoscopy and the intubating laryngeal mask airway.

Chapter 12 covers the use of flexible fiberoptic laryngoscopy, a technique that every anesthesiologist should master. Practical advice is given to the reader in order to increase the success of this technique, including the use of smaller endotracheal tubes, placing the patient in the semi-sitting position, having the endoscopist stand alongside the patient, and the use of a video monitor. The authors point out that the insertion cord does not require being straight, rather when directional changes are necessary, both hands must be utilized. Traditionally, endoscopists hold the scope in their left hand because of the design of the flexible scope, yet the illustration shows the endoscopist holding the scope in his right hand. Additionally, insufflation of oxygen through the suction channel of the fiberoptic is often preferred to suction with the flexible fiberoptic laryngoscopes. Oxygen insufflation affords the advantage of 1) providing oxygen during the procedure, 2) keeping the lens from fogging, and 3) blowing secretions out of view. A figure showing the rigid nasendoscope should have been included, as this is not a common device used in clinical practice, at least by anesthesiologists in the United States.

Chapters 13 and 14 provide succinct information regarding retrograde intubation and techniques used for one-lung ventilation. Although there are good tables, more figures would have enhanced the quality of Chapter 13, and a color figure would be more useful when referring to the blue bronchial lumen (Figure 14.1).

Chapter 15 nicely covers a difficult area, causation and prediction of a difficult airway. This reviewer commends their procedural classification of difficulty (i.e., mask ventilation, LMA insertion and ventilation, laryngoscopy, flexible fiberoptic laryngoscopy, intubation, and tracheostomy). A very brief but good review of predictive tests is provided.

Chapters 16-19 and then 22, 24-26, discuss airway management in certain patient populations and contain much useful information. The concept of optimizing preoxygenation by the use of gentle positive pressure ventilation, along with CP, is mentioned. The CP concept will hopefully be addressed in a randomized clinical study

in the future. Unfortunately, the obstructive sleep apnea (OSA) and anesthesia chapter is not up to date, but at the time of writing, editing, and publishing this text, this area was evolving so quickly that it simply could not have been timelier unless it was rewritten last week. The ASA recently developed guidelines as to how to manage patients with OSA.

Chapter 20 reviews the problem of aspiration, albeit a rare problem in clinical practice (1 in 4,000 in elective surgery and 1 in 900 in emergency surgery). Nonetheless, when it does occur, the consequences can be devastating. The authors provide a short, interesting vignette of Curtis Lester Mendelson, responsible for describing Mendelson's syndrome, who recently passed away in 2002. The authors correctly note that there is no evidence of benefit of cricoid pressure (CP), as there are no randomized controlled trials to support our current practice, yet there is evidence that CP may be disadvantageous, since it decreases lower esophageal sphincter pressure and esophageal barrier pressure. Interesting alternatives to CP are listed, including an inhalation induction performed in the left lateral position. One of the key points suggests that if a difficult intubation is anticipated, awake fiberoptic intubation or subarachnoid block (SAB) should be considered. This statement is very limiting and perhaps SAB should have been replaced with local or regional technique, since in today's clinical practice, selected peripheral nerve blocks, rather than major conduction blocks, are performed in these situations with great success.

Chapter 21 on the lost airway is perhaps the most important chapter in this textbook. The author does an excellent job in delineating the seriousness of this area and addressing the need to train practitioners in the decision-making process to identify the lost airway *early*, that "time is lost in denial," a common feature in anesthetic deaths due to a lost airway. Since mental and practical skills in dealing with this dire situation cannot be learned on routine cases, simulation-based training is necessary.

It would have been nice to organize this text so that Chapter 23 was the final chapter in its discussion of airway mortality associated with anesthesia and medicolegal aspects. Although deaths due to problems with airway management have declined, morbidity is high, with death and brain damage often occurring as a result.

Finally, the outline provided on the back cover of the book is incorrect. The textbook could have been organized in a better fashion, perhaps dividing the book into sections, such as anatomy, physiology, physics; general principles of airway management, including intubation, confirmation of intubation and extubation; airway devices and techniques; airway management of unique patient populations; and finally, complications, including the lost airway, trauma, aspiration, airway mortality, and medicolegal aspects.

In summary, *Core Topics in Airway Management* is exactly what it says it is, a textbook that provides succinct and useful information on airway management that is required by a wide spectrum of health care professionals, independent of the reader's medical discipline or training level. This text provides a foundation for the multispecialty approach to airway management. Readers are offered an easy to read book on airway management, containing many pearls of practical wisdom.

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