

CPC Airway Management

Core Module Overview

Howard Goodwin, DNAP, CRNA, CHSE, FAANA



OLD DOMINION UNIVERSITY

School of Nursing

Objectives

- The Learners will be able to identify the required requirements for completion of the CPC Airway Module requirements as set forth by the NBCRNA
- The Learners will be able to identify at least 2 companies who provide accredited CPC Core Modules.



What are Core Modules?

- Core Modules are a specialized type of Class A credit designed to help you stay current.
- Core Modules are focused on recently emerging information and evidence-based knowledge.
- Core Modules bring recent information to you in an educational format, avoiding the typical lag time of waiting for the information to be published in textbooks.
- Core Modules count towards Class A credit requirements.



Core Module Domains

- Airway Management
- Applied Clinical Pharmacology
- Human Physiology and Pathophysiology
- Anesthesia Equipment, Technology, and Safety



Core Modules General Content Requirements

- Formal assessment, such as multiple-choice questions
- At least one Core Module from each of the four core domain areas is required in each four-year cycle.



CPC Handbooks Comments on Core Module

- Core Modules provide directed assessed Class A CE in four core areas of anesthesia
- Core Modules are required every 4-year CPC Cycle
- Core Modules are a special type of prior approved Class A CEs
- The NBCRNA creates the learning objectives, but the content is developed by NBCRNA-approved vendors
- The minimum passing score of 80% must be achieved within 3 attempts.



CPC Module Recognition Submission Guidelines & Handbook

- Instruction Goals

1. To enhance knowledge and skills in basic and advanced airway management instrumentation and techniques.
2. To enhance in-depth understanding of and provide learning experiences in the difficult airway algorithm as a standard of care.
3. Instructional Goals: To enhance in-depth understanding of and provide learning experiences in airway management complications.



Instruction Goal: To enhance knowledge and skills in basic and advanced airway management instrumentation and techniques.

- Instruction Objective: The Learner will be able to recognize and respond with the appropriate instrumentation and technique with regard to airway management in accordance with evidence-based practices
 1. The Learner will demonstrate the appropriate steps in assessing an airway to develop the appropriate patient- specific plan that ensures safe management of the airway and facilitates continuity of care.
 2. The Learner will identify the indications and contraindications associated with the use of airway equipment.
 3. The Learner will understand the associated malpractice claims arising from the management of the airway, using a closed claims analysis
 4. The Learner will identify the complications associated with airway equipment



Instruction Goal: To enhance in-depth understanding of and provide learning experiences in the difficult airway algorithm as a standard of care.

- Instruction Objective: The Learner will be able to anticipate, identify, and manage patients with a potentially difficult airway in accordance with the difficult airway algorithm.
 1. When challenged with a difficult ventilation, the Learner will be able to demonstrate the appropriate steps outlined in the difficult airway algorithm.
 2. When challenged with a known difficult airway, the Learner will be able to demonstrate the appropriate steps outlined in the difficult airway algorithm.
 3. When challenged with a "cannot ventilate, cannot intubate" incident, the Learner will be able to demonstrate the appropriate steps outlined in the difficult airway algorithm.



Instruction Goal: To enhance in-depth understanding of and provide learning experiences in airway management complications.

- Instruction Objective: The Learner will be able to recognize and respond to airway management complications in accordance with evidence-based practices.
 1. When challenged with a laryngospasm, the Learner will be able to respond with the appropriate treatment in accordance with evidence-based practices.
 2. When challenged with an airway fire, the Learner will be able to respond with the appropriate treatment in accordance with evidence-based practices.
 3. When challenged with recurrent laryngeal nerve damage, the Learner will be able to respond with the appropriate treatment in accordance with evidence-based practices.
 4. When challenged with a pulmonary aspiration, the Learner will be able to respond with the appropriate treatment in accordance with evidence-based practice.



Core Module Providers

- **AANA:** <https://knowledgenetwork.aana.com/product/cpc-core-modules-bundle>
 - Airway Management; Applied Clinical Pharmacology; Human Physiology & Pathophysiology; and Anesthesia Equipment, Technology, & Safety
- **APEX Anesthesia Review:** <https://www.apexanesthesia.com/>
 - Airway Management; Applied Clinical Pharmacology; Human Physiology & Pathophysiology; and Anesthesia Equipment, Technology, & Safety
- **CORE Anesthesia:** <https://coreanesthesia.com/>
 - Airway Management; Human Physiology & Pathophysiology
- **CRNA Education:** <https://crnaeducation.com/>
 - Airway Management; Applied Clinical Pharmacology; Human Physiology & Pathophysiology; and Anesthesia Equipment, Technology, & Safety
- **Current Reviews:** <https://www.currentreviews.com/>
 - Airway Management
- **Summit Anesthesia Seminars:** <https://summitanesthesiaseminars.com/>
 - Airway Management; Human Physiology & Pathophysiology; and Anesthesia Equipment, Technology, & Safety
- **Teamhealth:** <https://learn.teamhealth.com/>
 - Airway Management; Applied Clinical Pharmacology; Human Physiology & Pathophysiology



APEX Anesthesia

- 7 sections
 - Airway Anatomy
 - Airway Assessment
 - Airway Devices
 - Difficult Airway
 - Complications
 - Controversies & Dogmas
 - Pediatric Airway



Airway Anatomy

- Structures

- Nasal Cavity
- Oral Cavity
- Pharynx
- Larynx
- Trachea

- Nerve Innervation of the Airway

- Trigeminal (CN5)
- Glossopharyngeal (CN9)
- Vagus (CN10)

- Airway Nerve Blocks

- Glossopharyngeal Nerve Block
- Superior Laryngeal Nerve Block
- Recurrent Laryngeal Nerve Block



Airway Assessment

- Preoperative Airway Assessment

- History of previous Airway Instrumentation
- Airway Exam
- Mallampati Classification
- Mandibular Protusion Test
- Inter-Incisor Gap
- Dentition
- Thyromental Distance
- Cervical Spine
- POCUS

- Developing the Airway Plan

- Difficult to Mask Ventilate?
- Difficult to Intubate?
- Difficult to place a Supraglottic Airway?
- Difficult to perform a Surgical Airway?
- How fast must the airway be Secured?



Airway Devices

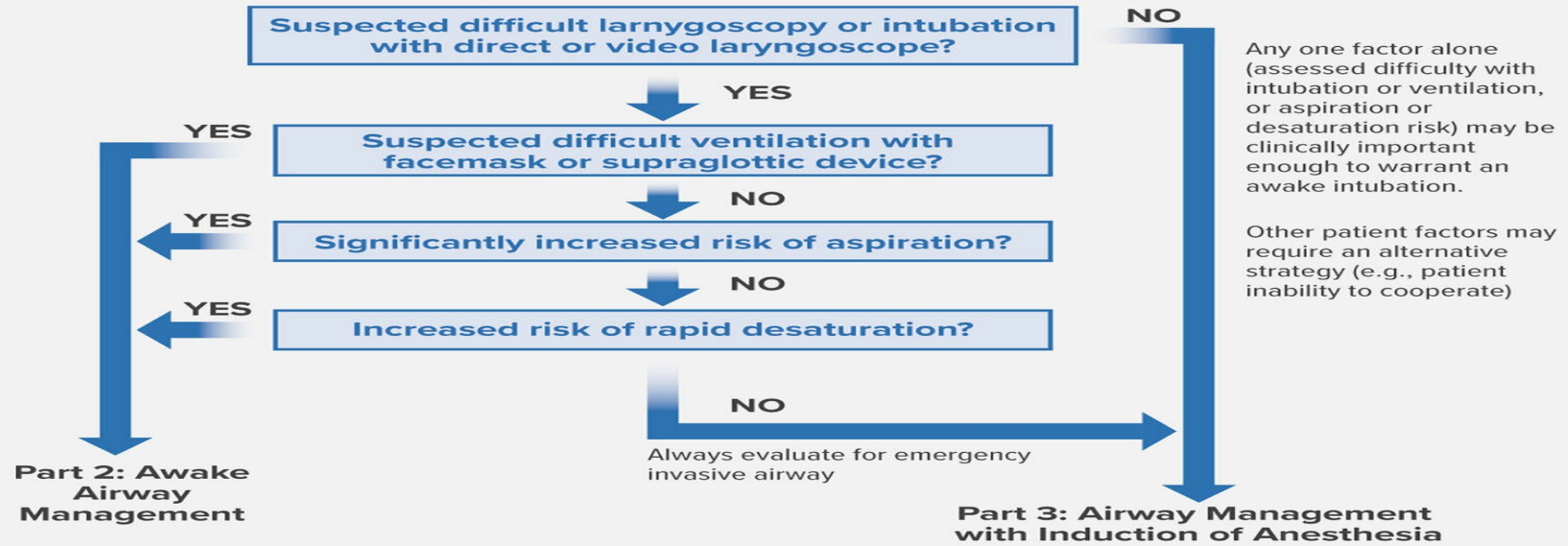
- Oropharyngeal Airway
- Nasopharyngeal Airway
- Direct Laryngoscopy
- Video Laryngoscopy
- Optical Stylet
- Intubating Stylet
- Lighted Stylet
- Laryngeal Mask Airway
- Flexible Fiberoptic Scope
- Rigid Fiberoptic Laryngoscope
- Retrograde Intubation
- Percutaneous Cricothyrotomy
- Surgical Cricothyrotomy
- Airway Exchange Catheter



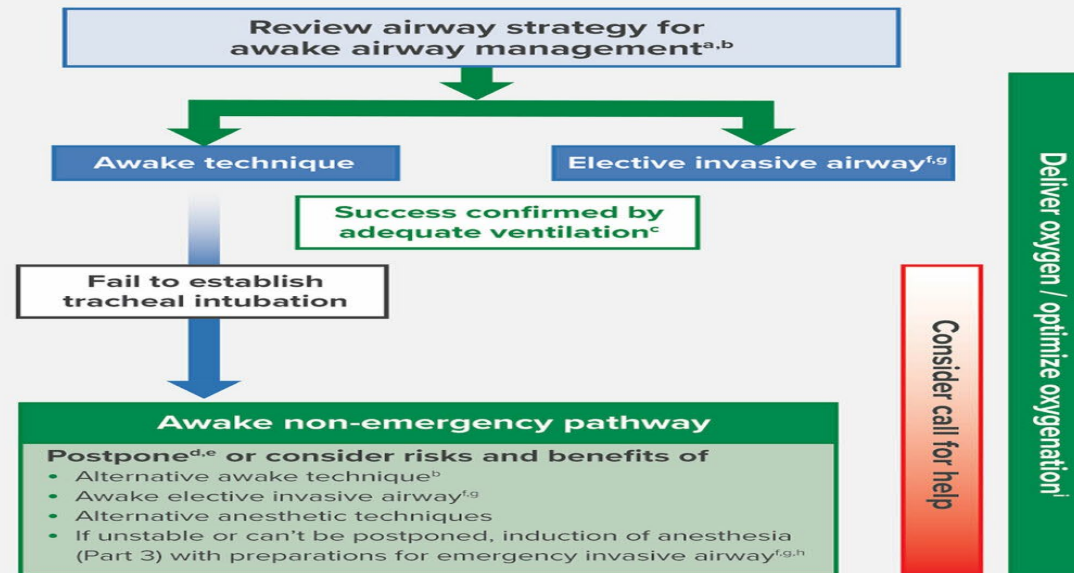
Difficult Airway

Part 1: Pre-Airway Management Decision-Making Tool (planning)

This tool can be used to choose between the awake or post-induction airway strategy. Each assessment should be made by the clinician managing the airway, using their techniques of choice.^a



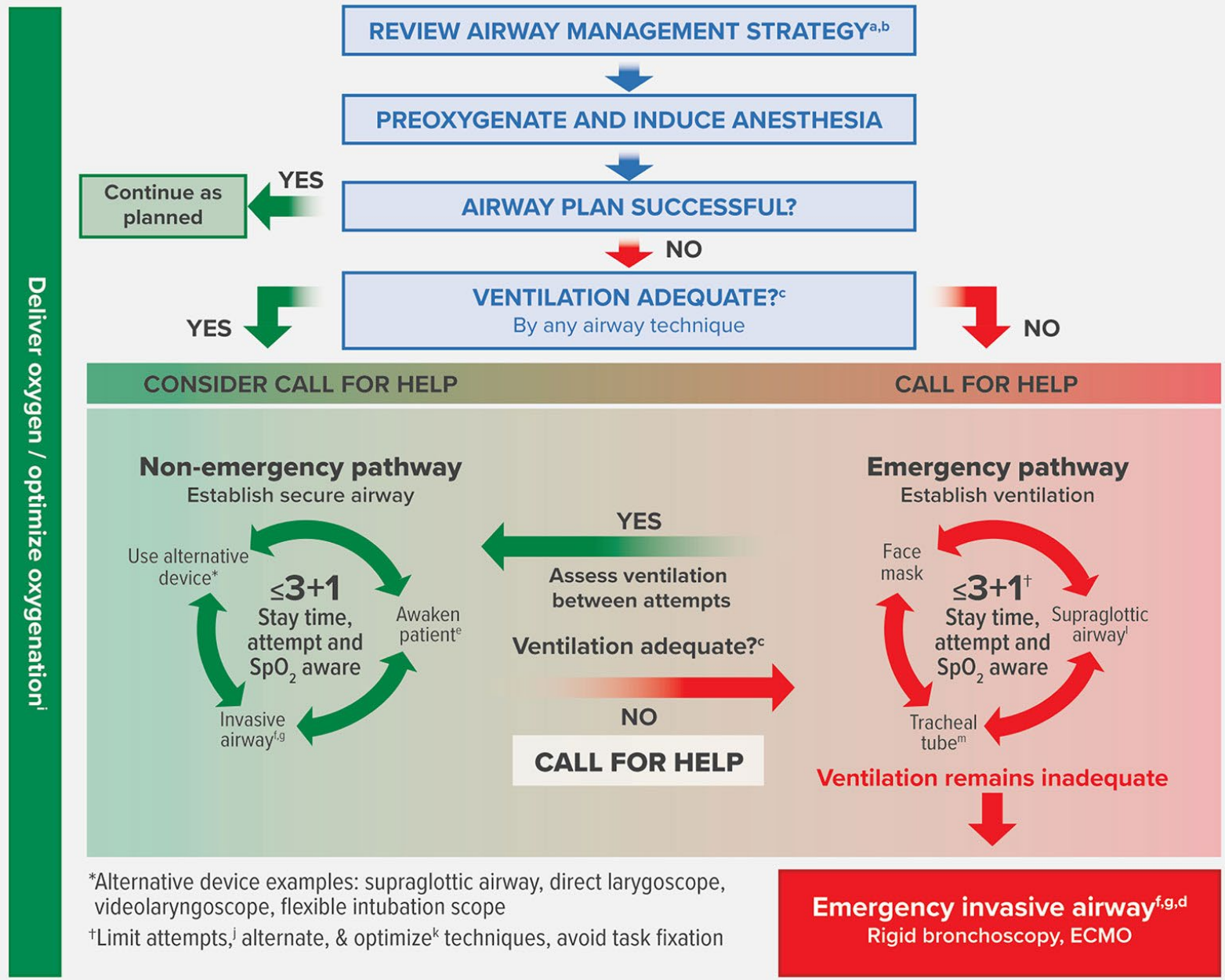
Part 2: Awake Airway Management



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Part 3: Airway Management with Induction of Anesthesia



*Alternative device examples: supraglottic airway, direct laryngoscope, videolaryngoscope, flexible intubation scope

⁺Limit attempts,^l alternate, & optimize^k techniques, avoid task fixation



Difficult Airway

- Non-reassuring Findings From Preop assessment
- Strategies for Difficult Ventilation & Intubation
- Awake Intubation
- Intubation – Emergent versus Non-Emergent
- Emergence & Extubation considerations for the difficult airway



Airway Complications

- Laryngospasm
 - Risk
 - Prevention
 - Treatment
 - Larson's Maneuver
- Airway Fire
 - Risk
 - Prevention
 - Treatment
 - Active Fire
 - After Fire
- Aspiration
 - Risk
 - Prevention
 - Treatment



Airway Controversies & Dogma

- Cricoid Pressure
 - Should we or should we not?
- Testing the Airway
- LMA & Mechanical Ventilation
 - Aspiration Risk
 - Laryngospasm Risk
 - Pediatric Considerations
- Cuffed ETT in Children
 - Background
 - Pros & Cons
 - Current evidence
- Off-site Anesthesia

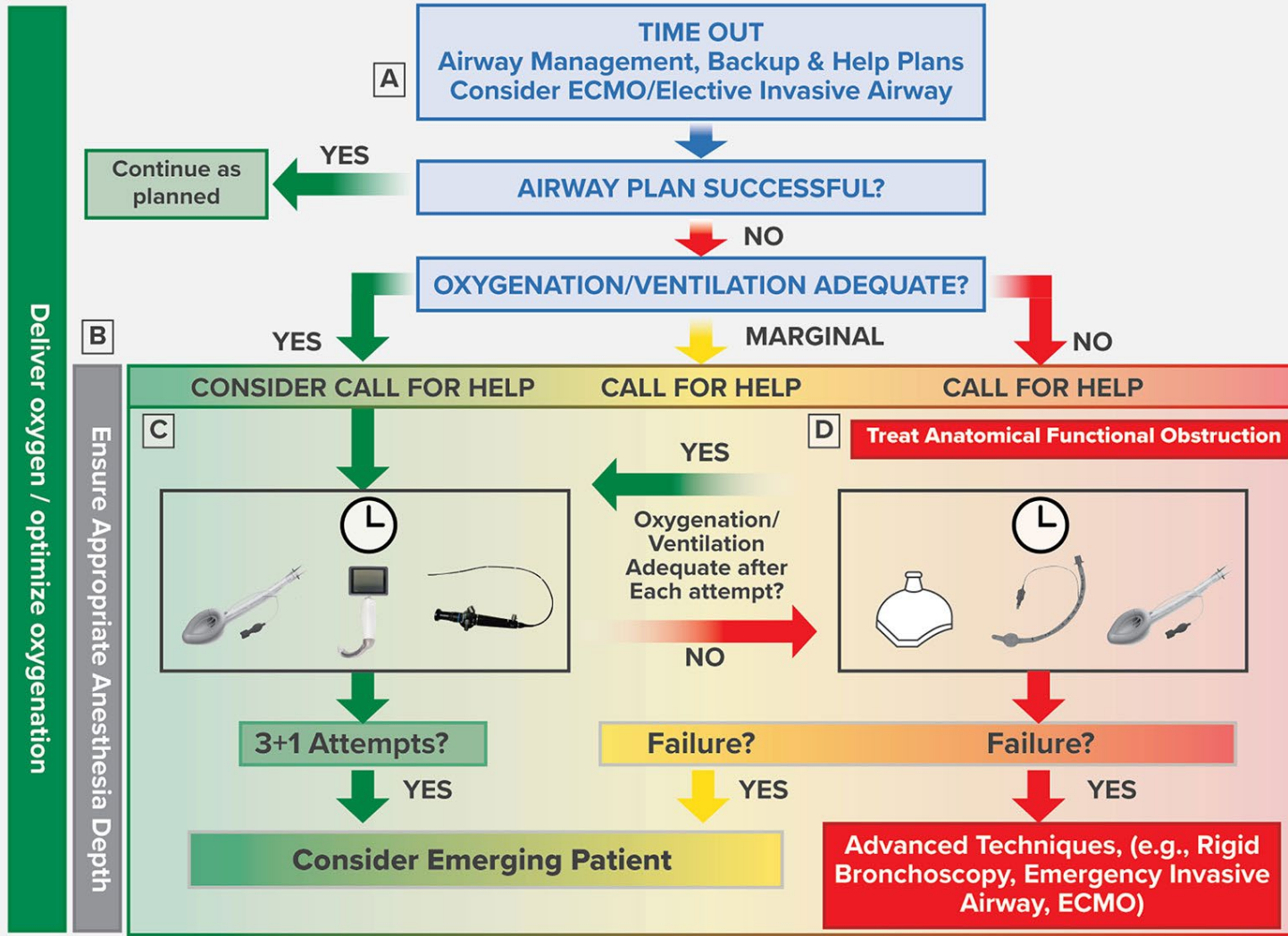


Pediatric Airway

- Airway Anatomy
- Pediatric Difficult Airway
- Practice considerations for pediatric difficult airway management
 - Airway Obstruction
 - LMA
 - Extubation



Difficult Airway Infographic: Pediatric Patients



DEBRIEF E



- Select preferred technique in the Box
- Alternate and Optimize Techniques, Limit Attempts
- Reassess Ventilation after each attempt
- Evaluate for Task Fixation, Loss aversion



Facemask



Video Laryngoscope



Flexible Intubation Scope



Tracheal Tube



Supraglottic Airway



A morbidly obese male with an unstable C spine fracture with history of difficult AW with MP IV and mouth opening <15mm is scheduled for a C4-5 fusion. Which intubation technique is most appropriate?

a. Asleep DL

b. Awake video laryngoscope

c. Asleep fiberoptic

d. Awake Fiberoptic



A morbidly obese male with an unstable C spine fracture with history of difficult AW with MP IV and mouth opening <15mm is scheduled for a C4-5 fusion. Which intubation technique is most appropriate?

Awake Fiberoptic



Airway management with a LMA is **contraindicated** in a patient with

- a. Symptomatic hiatal hernia
- b. Asthma
- c. Coronary artery disease
- d. Hypothyroidism



Airway management with a LMA is **contraindicated** in a patient with

Symptomatic hiatal hernia



An E-cylinder of oxygen with a service pressure of 1900 PSI contains how many liters of oxygen?

a.190

b.330

c.660

d.1590



An E-cylinder of oxygen with a service pressure of 1900 PSI contains how many liters of oxygen?

660



What is responsible for the abrupt decrease of $ETCo_2$ to near zero with absence of $ETCo_2$ waveform?

- a. Loss of suction on scavenging system
- b. Anesthesia circuit disconnect
- c. Malfunction of the unidirectional inspirations valve
- d. Exhaustion of CO_2 absorbent



What is responsible for the abrupt decrease of ETCo_2 to near zero with absence of ETCo_2 waveform?

Anesthesia circuit disconnect



Which cartilage in the larynx is unpaired?

- a. Arytenoid
- b. Cuneiform
- c. Corniculate
- d. Thyroid



Which cartilage in the larynx is unpaired?

Thyroid



What is the **INITAL** step in an endotracheal tube airway fire?

- a. Increase nitrous oxide
- b. Put out flame with fire extinguisher
- c. Placed wet clothes over area
- d. Disconnect circuit from patient



What is the **INITAL** step in an endotracheal tube airway fire?

Disconnect circuit from patient



The tip of the LMA should rest in which airway structure?

- a. Oropharynx
- b. Trachea
- c. Palatopharyngeal arch
- d. Hypopharynx



The tip of the LMA should rest in which
airway structure?

Hypopharynx



Upon further exam, she states her asthma is stable. Uses her inhaler daily, Lung sounds clear to air on auscultation. What agent, administered, preoperatively will, **BEST** prevent airway reactivity during surgery and anesthesia?

- a. Atropine
- b. Prednisone
- c. Albuterol
- d. Versed



Upon further exam, she states her asthma is stable. Uses her inhaler daily, Lung sounds clear to air on auscultation. What agent, administered, preoperatively will, **BEST** prevent airway reactivity during surgery and anesthesia?

Albuterol



Potential side effects of bilateral recurrent laryngeal nerve injury following total thyroidectomy include (**pick 2**)

- a. Stridor
- b. Respiratory distress
- c. Aphasia
- d. Hoarseness



Potential side effects of bilateral recurrent laryngeal nerve injury following total thyroidectomy include (**pick 2**)

Stridor

Respiratory distress



Sources of error with pulse oximetry reading include **Select 2**

- a. Hypoperfusion
- b. Carbon dioxide retention
- c. Hyperthermia
- d. Pt movement



Sources of error with pulse oximetry reading include **Select 2**

a. Hypoperfusion

b. Pt movement



Q & A



References

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