Airway Devices from A to Z

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Mike McEvoy - Books:

- *Emergency & Critical Care Pocket Guide™ ACLS Version*
  - Eighth Edition
  - Paula Derr, RN, BSN, CCRN, CEN
  - Mike McEvoy, PhD, RN, CCRN, NRP
  - Jon Tardiff, Paramedic, BS, PA-C

- *Critical Care Transport*
  - AAOS
  - American College of Emergency Physicians
  - Series Editor: Andrew N. Pollak, MD, FAANS
Outline (not in order):

• From easy to difficult
• How many airway problems are there?
• Can’t ventilate
• Can’t intubate
• OPA or NPA
• Preventing hypoxia
• BVM tricks
• ETT options
• B4 anesthesia…
ACLS 101

• Treatable causes (formerly H’s & T’s)
  • H = hypoxia
  • Coronary ischemia ➔ bradycardia ➔ PEA
Hypoxia

• If he pulls his mask off, could he arrest?
• Absolutely!
• Why?
ACLS 101

- Treatable causes (formerly H’s & T’s)
  
  - $H$ = hypoxia
  
  - Coronary ischemia $\rightarrow$ bradycardia $\rightarrow$ PEA
In-Hospital Cardiac Arrests

What is the most common cause of in-hospital codes?

- **PEA/Asystole** (67% adults, 64% peds)
- Vfib/Vtach
- Unknown
- Narcotics

Suggests Respiratory Etiology

JAMA, January 4, 2006 – Vol 295, No 1 (50-57)
How Important is Airway?

Airway is CRITICAL!
Easy Airway Maneuvers

- Positioning

- Decreases resistance
Positioning

**Ear-to-ternal notch**

Elevate the head until the ear is at the sternal notch
Positioning

Sub-Optimal

Optimal
Positioning

1.
Positioning

2.

[Image of a person lying on a bed with arrows indicating head and body positioning]
3. Positioning
Positioning
Easy Airway Maneuvers

- Sit up!
- Decreases resistance
Easy Airway Maneuvers

- Suctioning – NTS (nasotracheal suctioning)
- Decreases resistance

Risks:
- Hypoxia
- Vagal (bradycardia)
Airways

- OPA (Oro Pharyngeal Airway)

- Apneic patients, only when unable to BVM
- Useful for patients biting on ETT as well
Airways

- NPA (Naso Pharyngeal Airway)

- Active gag, sonorous (snoring) resps

- Adjunct to NTS

In-hospital airway of choice!
Airway Nightmares

- 5% of population cannot be BVM ventilated
- 1% cannot be intubated
Can We Predict Trouble?

- Sometimes, we can
- Mallampati Score is a useful tool
Can We Predict Trouble?
Your Instinct Works, Too:
Bag Valve Mask (BVM) Tips

- Are they breathing?
- What are the risks/benefits of ventilating?

To Do:
1. Breathe
2. Buy Milk
3. Walk Dog
4. Pay Bills
SpO$_2$ versus EtCO$_2$
Bag Valve Mask (BVM) Tips

• Positioning is key
Bag Valve Mask (BVM) Tips

- Improve oxygenation – “NODESAT”
- Nasal Oxygen During Efforts Securing A Tube
- Add 15 LPM nasal cannula

Blast from the Past
Apneic oxygenation in man, Anesthesiology 1959, Nov/Dec;789-798

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15 LPM nasal cannula + NMBA
Bag Valve Mask (BVM) Tips

- Hand position: EC Clamp technique
Bag Valve Mask (BVM) Tips

- Get help: BVM is a 2-person skill
Bag Valve Mask (BVM) Tips

- Beard?
- Water soluble lubricant (on the beard)
Bag Valve Mask (BVM) Tips

• Dentures?
• Leave ‘em in (maintains facial form)
Bag Valve Mask (BVM) Tips

- Still can’t ventilate?
- Insert an OPA
Bag Valve Mask (BVM) Tips

• Still Can’t Ventilate?
• DOPE
  - Dislodged
  - Obstructed
  - Pneumothorax
  - Equipment
Bag Valve Mask (BVM) Tips

- Could there be an airway obstruction?
Bag Valve Mask (BVM) Tips

- Could there be an airway obstruction?
SALT® Airway

ECOLAB $19

- Supraglottic Airway Laryngopharyngeal Tube
- Facilitates blind ETT placement
- Mixed reviews
- However, in difficult to ventilate patients, this may be a *lifesaving tool*

If the patient can’t be intubated

• Additional tools, such as video scopes
If the patient can’t be intubated

• And, a whole family of supraglottic airways (SGAs)
If the patient can’t be intubated

- LMA (Laryngeal Mask Airway)
If the patient can’t be intubated

- King-LTD

- Latex Free and Single Patient Use

- Orientation / X-ray Line

- Single Valve / Pilot Balloon
  Inflates both the proximal and distal cuffs.

- CM Depth Markings

- Proximal Cuff
  Stabilizes KING LT-D and seals the oropharynx.

- Two Ventilation Outlets
  In front of the larynx for efficient ventilation and allows passage of fiberoptic bronchoscope or tube exchange catheter.

- Bilateral Eyelets
  Additional eyelets to supplement ventilation.

- Distal Cuff
  Blocks entry of esophagus. Reduces the possibility of gastric insufflation.
If the patient can’t be intubated

- King-LTD
Before Anesthesia Arrives

- Position
- High flow nasal cannula (15 LPM)
- BVM & suction
- Last Creatinine and $K^+$
- Monitoring (EKG/SpO$_2$)
Questions?

WILL INTUBATE FOR FOOD

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