



Airway Management in the ICU

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INTRODUCTION

- **Airway management is a fundamental aspect of emergency and critical care medicine**
- **Expertise in airway management – an important skill**

“An experienced EMS provider will tell you that,
when treating a patient, the three most important
considerations are airway, airway, airway.”

AIRWAY MANAGEMENT IN THE ICU

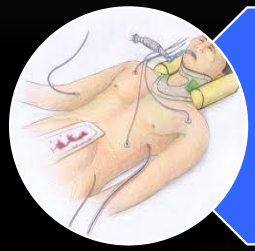
- Overview: why do we care?
- Assessing the Airway
- Intubation, Adjuncts and the difficult airway
- The blocked endotracheal tube
- Unplanned extubation
- Extubation of the difficult airway

Airway: Why do we care?



- It’s the A of ABC
  - No airway= no life
  - brain injury in 4 min, irreversible in 7 minutes
  - Cardiac arrest in minutes
- Hospitalized patients outside of the OR frequently require emergency airway management
- ETI in the ICU: high rate of immediate, severe life-threatening complications

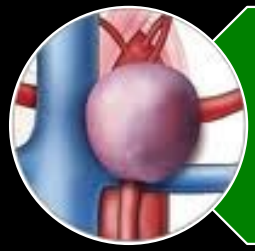
OUR PATIENTS ARE DIFFERENT



Immobilized

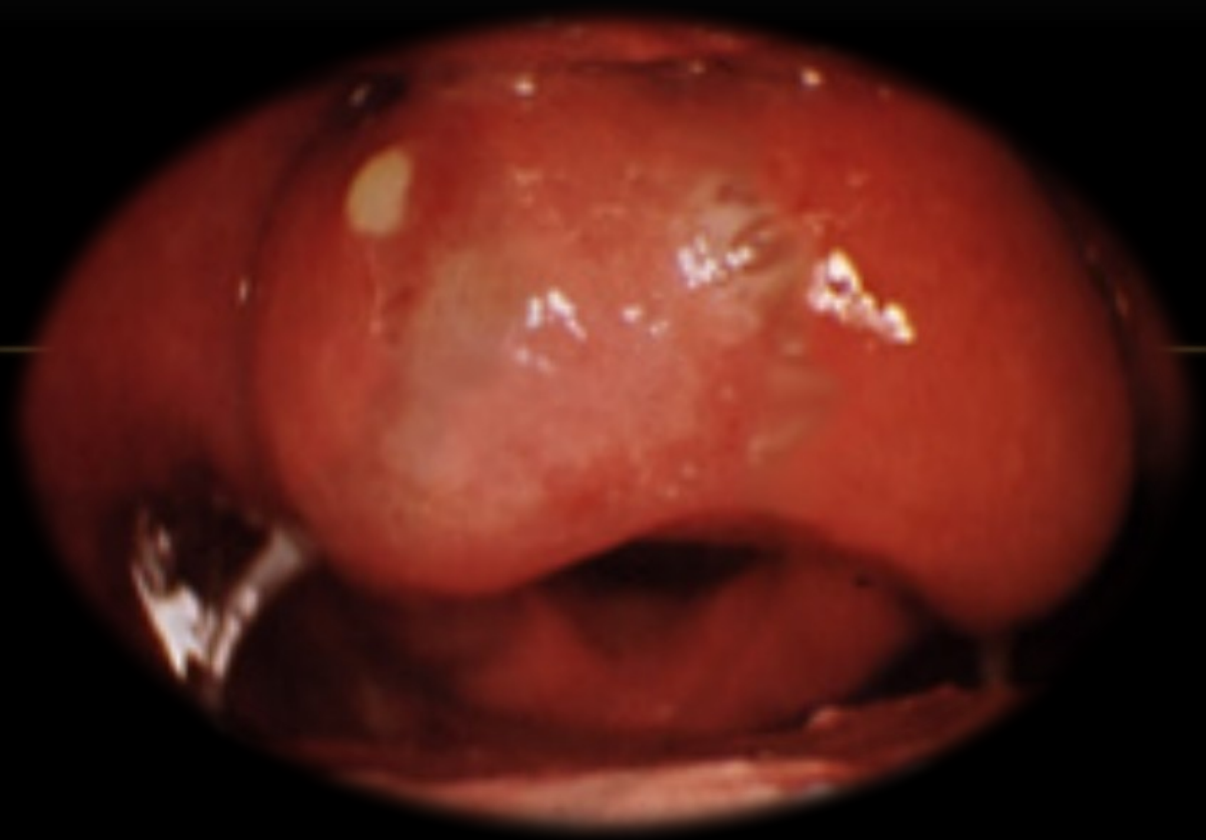


Traumatized

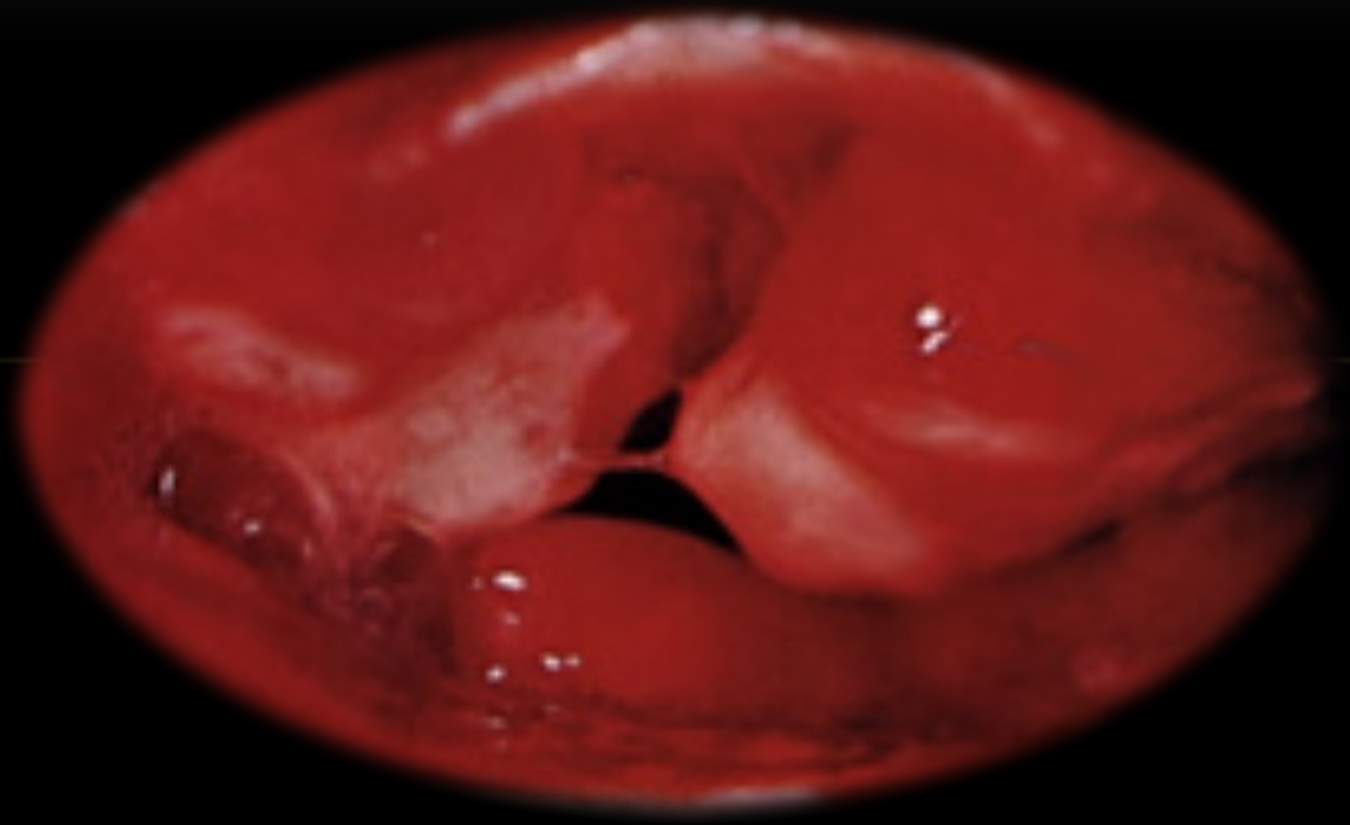


Compromised

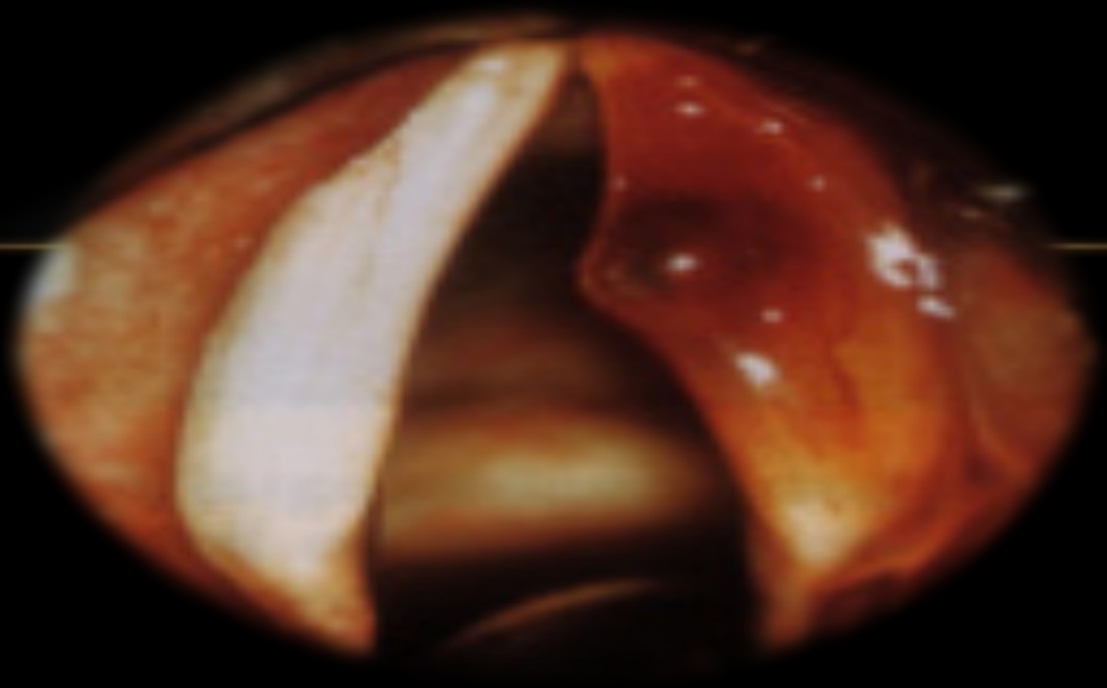
THEY TEND TO LOOK LIKE THIS



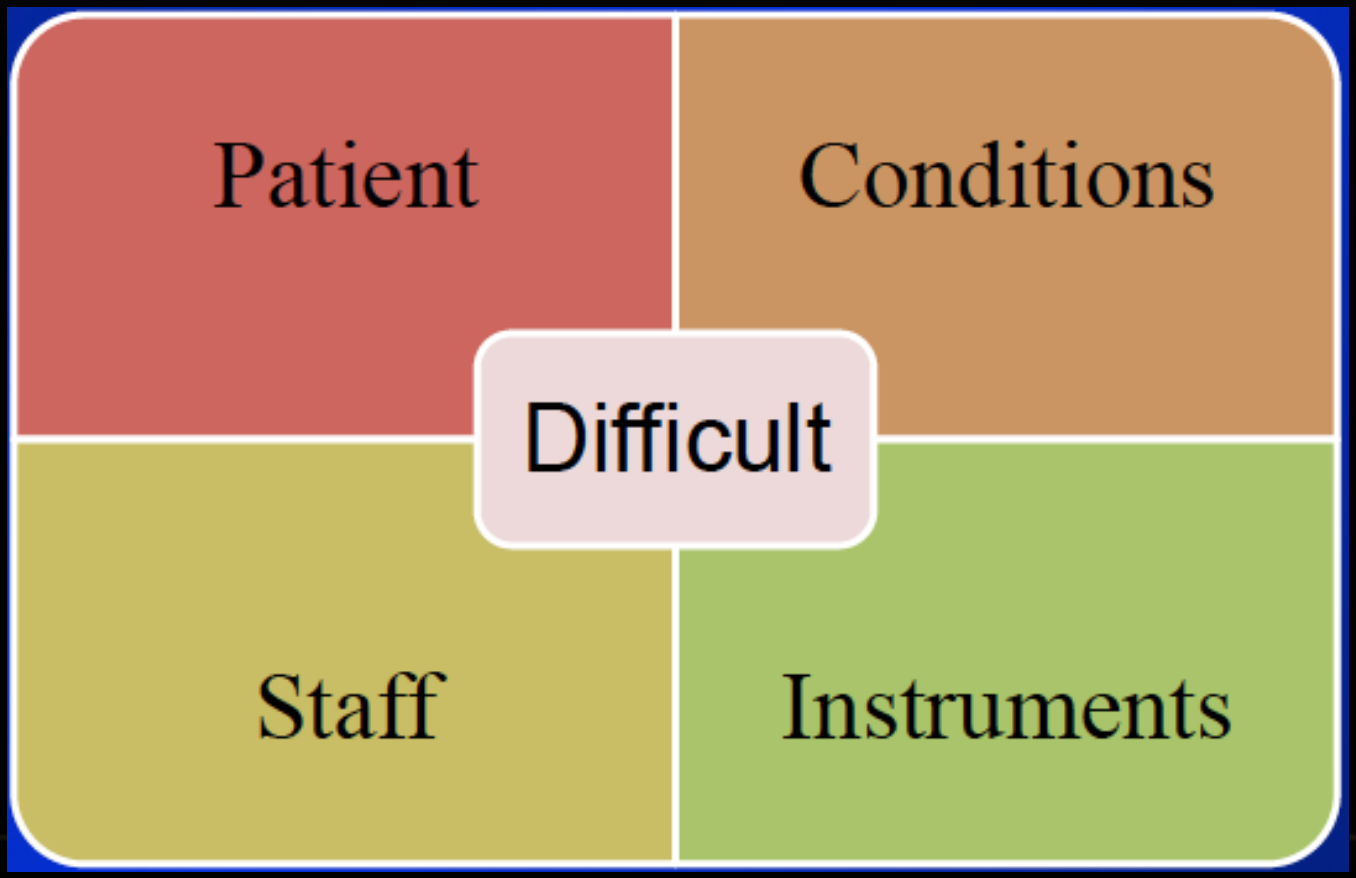
OR EVEN THIS



AND THIS – AFTER FAILED INTUBATION ATTEMPT



WHAT MAKES IT DIFFICULT?



WHY IS ICU AIRWAY ISSUES U



- Critical illness itself makes Anatomically normal airway diificult to start with
- Patient factors – hypoxic , obtunded or combative or all three. Not fasted, functional gastric hypostasis.
- No time to properly assess.
- Unstable physiology – Haemodynamics deranged.
- Pre-oxygenation not possible due to pre existing hypoxia, V/Q mismatch.
- Absolute or relative hypovolemia and increased risk of myocardial impairement.

ADJUVANT FACTORS

- Lack of skilled assistance during odd hours.
- Ironically, lack of advanced airway equipments.
- Intensivists with Non anesthetic background with no formal airway training.
- Positioning.
- Patients already dependent on advanced oxygenation techniques.

Factors
ICU-related factors
Infrastructure
Equipment
Timing
Patient factors
Airway assessment
Risk of aspiration
Challenging anatomy
Inefficient preoxygenation
Rapid desaturation
Hemodynamic instability
Waking up the patient is not an option
Operator factors
Training
Experience
Stress

COMPLICATIONS

NOLAN AND KELLY'S REVIEW OF CRITICAL CARE AIRWAY LITERATURE 2011

- >= 3 intubation attempts -10%
- Severe hypotension -17%
- Severe hypoxaemia – 7 %
- Oesophageal intubation – 5.3%
- Aspiration – 2.6%
- Cardiac arrest – 2.1%

COMPLICATIONS

Anesthesiology:
February 1995 - Volume 82 - Issue 2 - p 367–376
Clinical Investigation

Death and Other Complications of Emergency Airway Management in Critically Ill Adults: A Prospective Investigation of 297 Tracheal Intubations

Schwartz, David E. MD; Matthay, Michael A. MD; Cohen, Neal H. MD

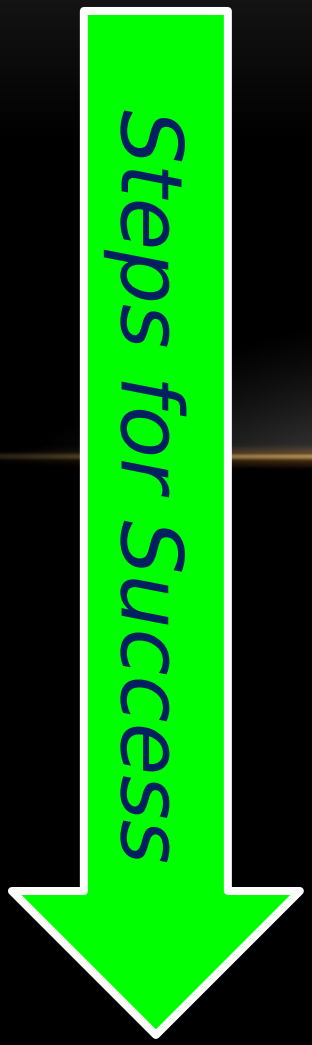
Results: Two hundred ninety-seven consecutive intubations were carried out in 238 adult patients. Translaryngeal tracheal intubation was accomplished in all patients. Intubation was difficult in 8% of cases (requiring more than two attempts at laryngoscopy by a physician skilled in airway management). Esophageal intubation occurred in 25 (8%) of the attempts but all were recognized before any adverse sequelae resulted. New infiltrates suggestive of pulmonary aspiration were present on chest radiograph after 4% of intubations. Seven patients (3%) died during or within 30 min of the procedure. Five of the seven patients had systemic hypotension (systolic blood pressure less or equal to 90 mmHg), and four of the five were receiving vasopressors to support systolic blood pressure. Patients with systolic hypotension were more likely to die after intubation than were normotensive patients ($P < 0.001$). There was no relationship between supervision by an attending physician and the occurrence of complications.

Airway management is really easy…

…except when it isn’t…



OUR SUCCESS: PLAN



- *Preparation*
- *Assessment*
- *Positioning*
- *Pre-oxygenation*
- *Drugs*
- *Intubation*
- *Difficult Intubation*
- *Stabilization*

PREPARATION

- Monitor
- Working IV, suction, oxygen
- Oral and Nasal airways
- Bag Valve Mask
- Blades
- ETT, syringe, CO2 detector
- A SECOND PAIR OF





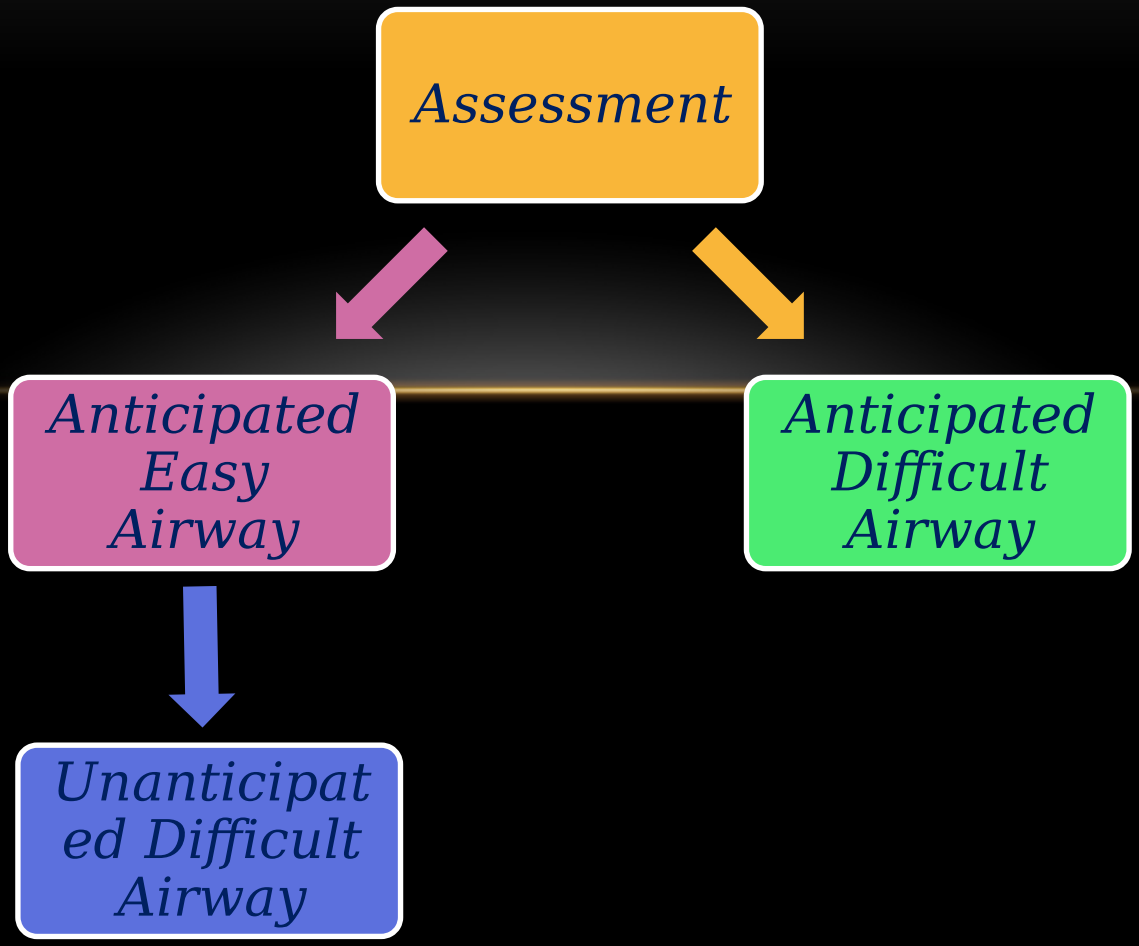
PREPARATION

Y BAG PEOPLE

Y	Yankauer suction
B	Bag-valve-mask
A	Access vein
G	Get your team, get help if predict a difficult airway
P	Position patient (sniffing position if no contraindications) and place on monitor
E	Endotracheal tubes and check cuff with syringe
O	Oxygen, oropharyngeal airway available
P	Pharmacy: draw up adjunctive medications, induction agent, and neuromuscular blocker
L	Laryngoscope and blades: ensure a variety and that they are working
E	Evaluate for difficult airway: look for obstruction, assess thyromental distance < 3 finger breadths, interincisor distance < 2 finger breadths, neck immobilization

Stuart F. Reynolds, John Heffner. Airway Management of the Critically Ill Patient.
Chest 2005;127:1397-1412

WHAT NEXT

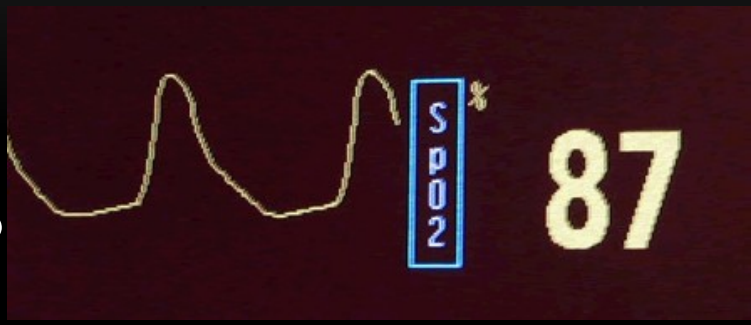

Assessment
Anticipated Easy Airway
Anticipated Difficult Airway
Unanticipated Difficult Airway

REMEMBER

- **Assessment in critically ill patients – does not limit to airway**
- **Assess general and hemodynamic condition of patien**

Prepare for crash landing

ASSESSING THE AIRWAY



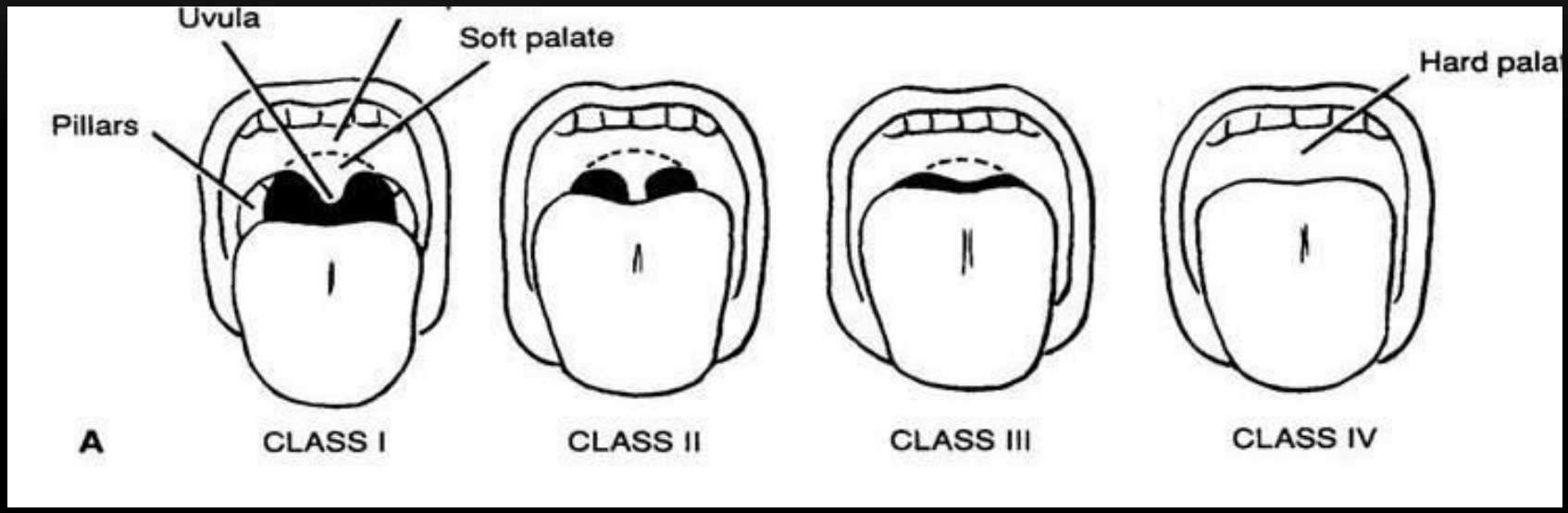
- Remember ABC's!
- Can the patient speak?
  - Assess for stridor, hoarseness, breathlessness
- Look, listen, and feel
- Place monitor, HR and O2 sats
- Assess the neck: hematoma, swelling, scars
  - Remove cervical collar with in-line stabilization

ASSESSING THE AIRWAY

- History:
  - C-spine immobilization, trauma
  - Laryngectomy
  - Airway problems
  - Surgery?
  - Dental issues
- Invasive vs. noninvasive support
- Assess for difficult



ASSESSING THE AIRWAY





How Good are we in Predicting Difficult Airways in ICU?

Early Identification of Patients at Risk for Difficult Intubation in the Intensive Care Unit

Development and Validation of the MACOCHA Score in a Multicenter Cohort Study

Audrey De Jong[1], Nicolas Molinari[2], Nicolas Terzi[3], Nicolas Mongardon[4], Jean-Michel Arnal[5],

Am J Respir Crit Care Med Vol 187, Iss. 8, pp 832–839, Apr 15, 2013

Definition of abbreviation: MACOCHA = Mallampati score III or IV, Apnea syndrome (obstructive), Cervical spine limitation, Opening mouth <3 cm, Coma, Hypoxia, Anesthesiologist nontrained.

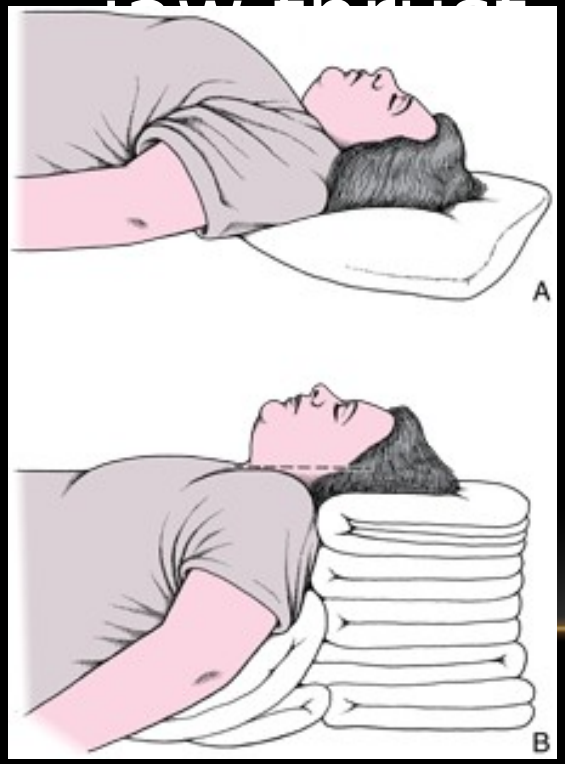
Table 1 MACOCHA score calculation worksheet

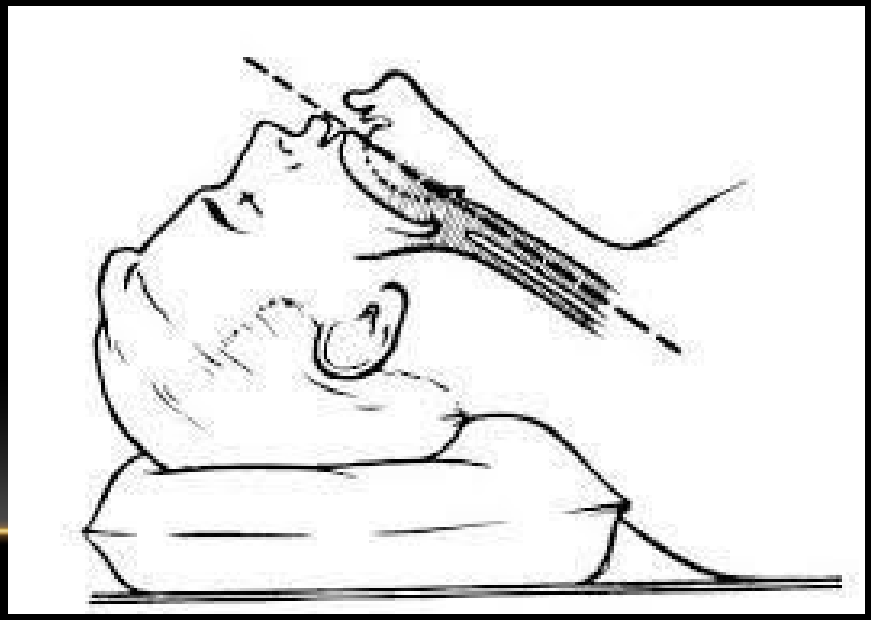
	Points
Factors related to patient	
Mallampati score III or IV	5
Obstructive sleep apnea syndrome	2
Reduced mobility of cervical spine	1
Limited mouth opening < 3 cm	1
Factors related to pathology	
Coma	1
Severe hypoxemia (< 80 %)	1
Factor related to operator	
Non-anesthesiologist	1
Total	12

Coded from 0 to 12, 0 = easy, 12 = very difficult

POSITIONING

- Pillows
- Sniff Position: chin lift and jaw thrust









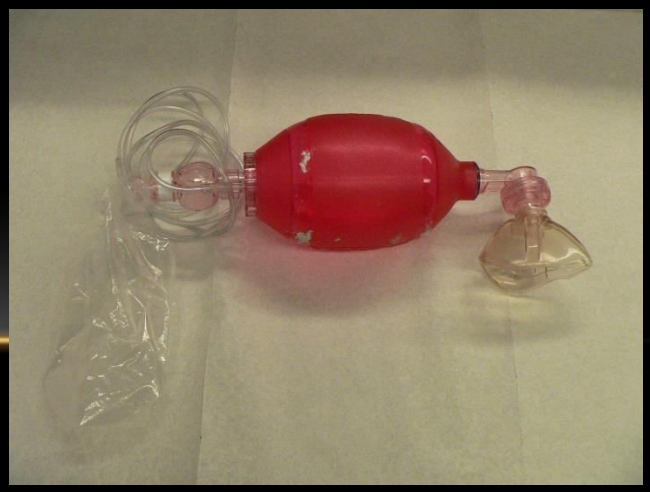



A
B

PREOXYGENATION

- Bag Valve Mask: positive pressure ventilation
- Patients with respiratory failure may not have adequate response
- – Baillard et al. demonstrated improved oxygenation
  - with noninvasive positive pressure





PRE-OXYGENATION

- ROLE OF NIPPV
- ROLE OF HFNCO

TIME FOR PREOXYGENATION

Dr. Weingart and Levitan -
Annals of Emergency Medicine – March -2012

COOPERATIVE PATIENTS

- 8 BREATH

6o SECONDS

SICK & UNCOOPERATIVE PATIENTS

- 3 MINUTES

ROLE OF NIPPV

Three minutes of preoxygenation using noninvasive positive pressure ventilation (NIPPV) delivered by an ICU ventilator using a face mask; mask is more effective at reducing desaturation than by face mask with bag and reservoir.[22]

Am J Respir Crit Care Med 2006;174:171-7.

PRE OXYGENATION

To perform NIV for 3 to 5 min in critically ill patients, the facial mask available in every ICU room is adequate.

The patient should be in the semi-sitting position, FiO_2 set at 100 %, inspiratory pressure set to observe a tidal volume of 6 to 10 ml/kg and respiratory rate of 10 to 25 cycles/ min.
The duration of the procedure usually corresponds with the time needed to prepare the drugs and equipment for intubation.

ROLE OF HFNC



Mickaël Vourc'h
Pierre Asfar
Christelle Volteau
Konstantinos Bachoumas
Noëmie Clavieras
Pierre-Yves Egreteau
Karim Asehnoune

High-flow nasal cannula oxygen during endotracheal intubation in hypoxemic patients: a randomized controlled clinical trial

- Intensive Care Med. 2015 Sep;41(9):1538-48

PREOXYFLOW is a multicenter, randomized, controlled, parallel, open-label study comparing two preoxygenation strategies for ETI in ICUs. The main objective was to determine whether HFNC was more effective than HFFM in reducing desaturation during ETI after rapid sequence induction.

Conclusion

Despite the theoretical advantages, in acute severely hypoxemic patients, high flow nasal cannula oxygen therapy as a preoxygenation device was not more efficient than a high FiO_2 flow face mask in preventing desaturation

Use of High-Flow Nasal Cannula Oxygen Therapy to Prevent Desaturation During Tracheal Intubation of Intensive Care Patients With Mild-to-Moderate Hypoxemia*

Miguel-Montanes, Romain MD[1]; Hajage, David MD[2]; Messika, Jonathan MD[1,3,4]; Bertrand, Fabrice MD[1]; Gaudry, Stéphane MD[1,3,4]; Rafat, Cédric MD[1]; Labbé, Vincent MD[1]; Dufour, Nicolas MD[1,3,4]; Jean-Baptiste, Sylvain MD[1]; Bedet, Alexandre MD[1]; Dreyfuss, Didier MD[1,3,4]; Ricard, Jean-Damien MD, PhD[1,3,4]

Critical Care Medicine: March 2015 - Volume 43 - Issue 3 - p 574–583

Nonrebreathing Bag Reservoir Facemask	High-Flow Nasal Cannula Oxygen

CONCLUSION

In conclusion, use of HFNC for preoxygenation significantly reduced the prevalence of severe hypoxemia during intubation compared with NRM. We believe that the use of HFNC during intubations in the ICU represents a major advance in patient safety during these potentially high-risk procedures.

ICM DEC 2016

New method of preoxygenation for orotracheal intubation in patients with hypoxaemic acute respiratory failure in the intensive care unit, non-invasive ventilation combined with apnoeic oxygenation by high flow nasal oxygen: the randomised OPTINIV study protocol

Samir Jaber,[1,2] Nicolas Molinari,[3] Audrey De Jong[1,2]

FLOW = 60 L/min to the patient
FiO2 = 100 %

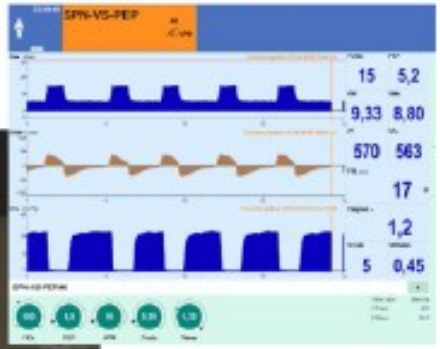
A. Interventional group =
Real HFNC + NIV
(patient received 4 min HFNC oxygen flow = 60 L/min)

PS = 10 cm H2O
PEEP = 5 cm H2O
FiO2=100%

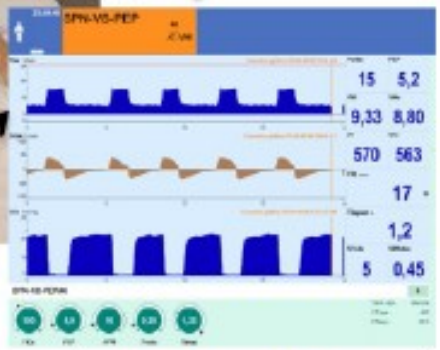


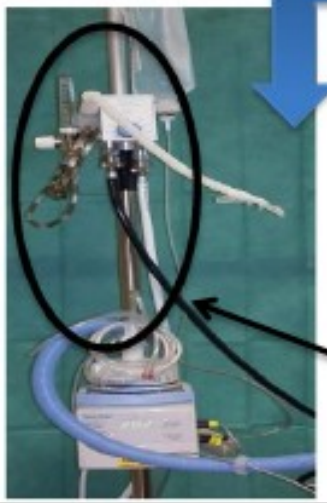
HFNC
device blinded





NIV
screen/
ventilator





B. Reference group =
Sham HFNC + NIV
(patient received 4 min HFNC oxygen flow = 0 L/min)

FLOW = 60 L/min to the
room atmosphere
FiO2 = 100 %

PS = 10 cm H2O
PEEP = 5 cm H2O
FiO2=100%

In conclusion, the OPTINIV randomised trial showed that HFNC combined with NIV, in comparison to NIV alone, allowed significantly higher minimal SpO_2 values during the intubation procedure of severe hypoxaemic acute respiratory failure ICU patients. This proof-of-concept study has to be confirmed with a large multicentre randomised controlled trial.

HOW DO I INTUBATE ?

RAPID SEQUENCE INTUBATION (RSI)..MODIFIED

- Goal: to prevent aspiration
  - use with suspected full stomach
- The National Emergency Airway Registry
  - 7,712 intubations
  - RSI success rate >98.



ALWAYS REMEMBER

Emergency Airway Pharmacology

Anaesthesiology	*Critically ill*
• Stabilized • Optimized • Planned	• Hypotensive • Hypovolemic • Sympathetic overtone • Low reserves • Co – morbidities • Does not give time

PHARMACOLOGY

- **Proper drug selection:**
  - ***facilitates laryngoscopy***
  - ***improves like hood of successful intubation***
  - ***attenuates the physiological response of intubation***
  - ***reduces the risk of aspiration and other complications – 50 to 70%***
- **Depending upon situation combination of :**
  - ***pre-induction drugs***
  - ***induction agent***
  - ***paralytic agent***
- **Muscle relaxants - Beware**
  - ***compel the physician to ventilate or intubate***

Sivilotti ML, Filbin MR, Murray HE, et al. Does the sedative agent facilitate emergency rapid sequence intubation? Acad Emerg Med 2003; 10:612–620

INDUCTION AGENTS: SEDATIVES

- Etomidate
  - Single dose may cause adrenal insufficiency for up to 72 hr
  - Discouraged in sepsis, seizure DO
  - No cardiac depression
- Propofol
  - Rapid onset
  - May cause hypotension, bradycardia
  - Not safe in cardiac dysfunction
- Ketamine
  - Analgesic, sedative, amnestic
  - Raises HR and BP, caution in elevated ICPs, MI
  - Does not ablate spontaneous ventilation

INDUCTION AGENTS: SEDATIVES

- Fentanyl and Midazolam
  - Good choice in cardiac patients

- Always have a vasopressor quickly at hand in case of hypotension

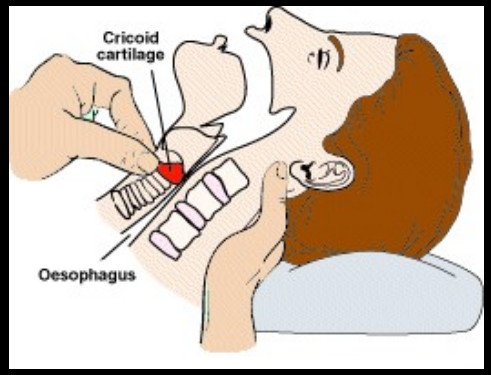


PARALYTICS

- Succinylcholine
  - Drug of choice
  - Depolarizing neuromuscular blocker
  - T1/2: 5 min
  - Contraindications: renal failure, hyperkalemia, burns, history of MH, crush injury, chronic debilitation
- Rocuronium
  - Only acceptable alternative to Sch
  - Comparable to SCh at dose of 1.0-1.2 mg/kg

PASSING THE ETT

- Cricoid pressure (Sellick's maneuver)





DL VS V



Intensive Care Med (2014) 40:629–639
DOI 10.1007/s00134-014-3236-5

ORIGINAL

Audrey De Jong
Nicolas Molinari
Matthieu Conseil
Yannael Coisel
Yvan Pouzeratte

Video laryngoscopy versus direct laryngoscopy for orotracheal intubation in the intensive care unit: a systematic review and meta-analysis

In conclusion, this systematic review and meta-analysis provides evidence that VL for OTI in ICU helps to reduce difficult OTI, esophageal intubation, Cormack 3/4 grades, and increases first-attempt success, but does not reduce severe hypoxemia, severe cardiovascular collapse, or airway injury. Further large randomized studies are needed to determine if video laryngoscopes are able to reduce complications related to intubation.

Randomized Trial of Video Laryngoscopy for Endotracheal Intubation of Critically Ill Adults

David R. Janz, MD, MSc[1]; Matthew W. Semler, MD[2]; Robert J. Lentz, MD[2]; Daniel T. Matthews, MD[2];

Crit Care Med 2016

CONCLUSIONS

Among critically ill adults undergoing endotracheal intubation by PCCM fellows, VL does not improve the rate of intubation on first attempt. These results do not support the routine use of VL for all ICU intubations. Future study should focus on whether VL improves the rate of intubation on first attempt in operators with limited intubating experience.

MACMAN trial

JAMA | Original Investigation | CARING FOR THE CRITICALLY ILL PATIENT

Video Laryngoscopy vs Direct Laryngoscopy on Successful First-Pass Orotracheal Intubation Among ICU Patients

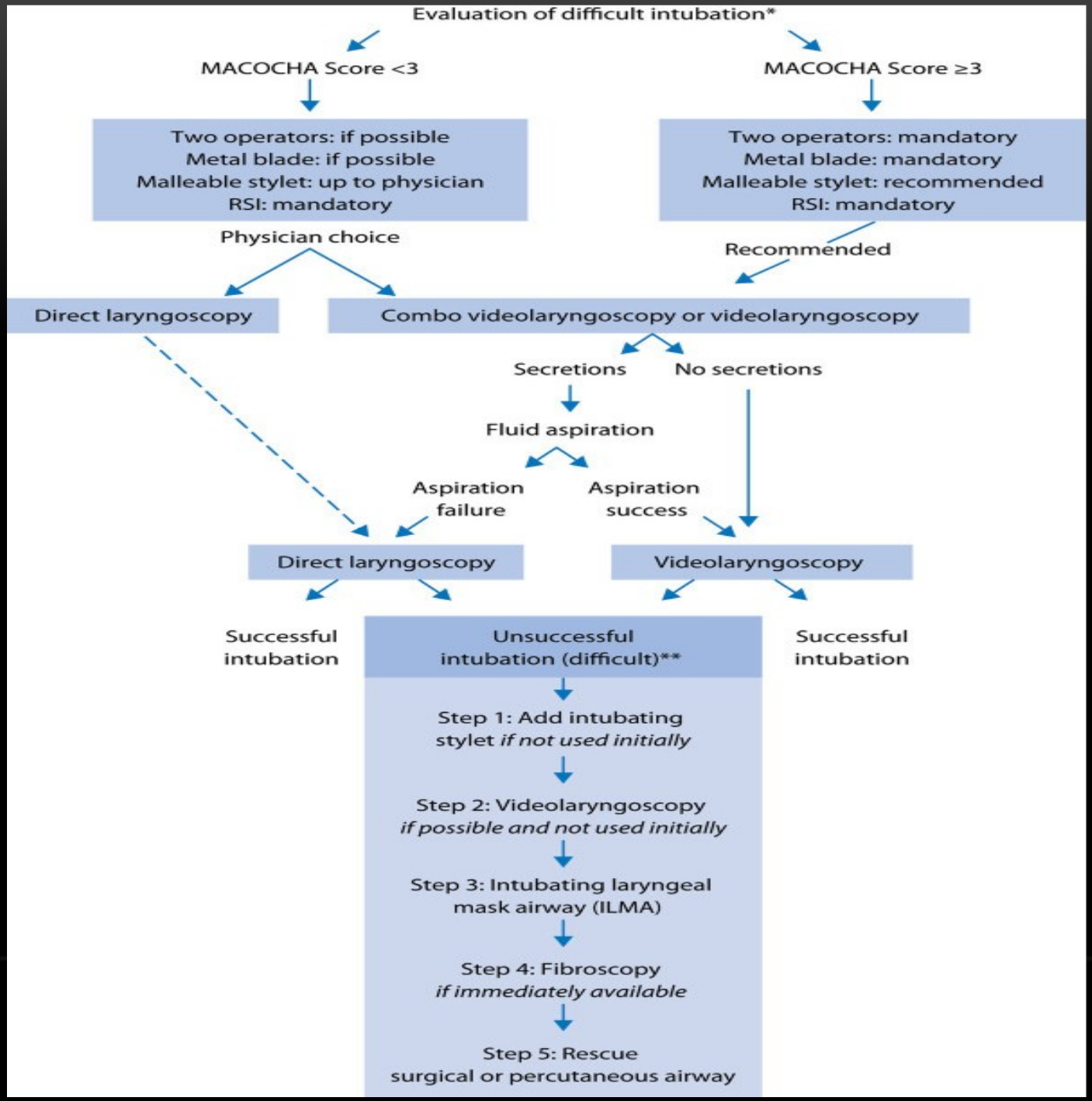
A Randomized Clinical Trial

JAMA. 2017;317(5):483-493.

The McGrath Mac Videolaryngoscope Versus Macintosh Laryngoscope for Orotracheal Intubation in the Critical Care

Conclusions

Among patients in the ICU requiring intubation, video laryngoscopy compared with direct laryngoscopy did not improve first-pass orotracheal intubation rates and was associated with higher rates of severe life-threatening complications. Further studies are needed to assess the comparative effectiveness of these 2 strategies in different clinical settings and among operators with diverse skill levels.


Evaluation of difficult intubation*
MACOCHA Score <3
MACOCHA Score ≥3
Two operators: if possible
Metal blade: if possible
Malleable stylet: up to physician
RSI: mandatory
Two operators: mandatory
Metal blade: mandatory
Malleable stylet: recommended
RSI: mandatory
Physician choice
Recommended
Direct laryngoscopy
Combo videolaryngoscopy or videolaryngoscopy
Secretions
No secretions
Fluid aspiration
Aspiration failure
Aspiration success
Direct laryngoscopy
Videolaryngoscopy
Successful intubation
Unsuccessful intubation (difficult)**
Successful intubation
Step 1: Add intubating stylet if not used initially
Step 2: Videolaryngoscopy if possible and not used initially
Step 3: Intubating laryngeal mask airway (ILMA)
Step 4: Fibroscopy if immediately available
Step 5: Rescue surgical or percutaneous airway

DEFAULT STRATEGY FOR FAILED RSI IN ADULTS

Plan A:
initial tracheal intubation plan

direct laryngoscopy

- **RSI CHECKLIST**
- pre-oxygenate
- position: 'ear to sternal notch'- 'RAMP' if obese
- paralysis & sedation for all
- cricoid pressure for all initially but release if poor view and apply External Laryngeal Manipulation
- bougie for all

succeed → **tracheal intubation** verify with $ETCO_2$

- **maximum 2 attempts in 2 mins**
- re-oxygenate if SpO_2 <90% with 2 person BVM + OPA + NPA
- **CALL ANAESTHETICS IF PLAN A FAILS (ext: 3186)**

fail ↓

Plan B:
secondary tracheal intubation plan

video laryngoscopy

- as difficult airway, maximise laryngeal view by avoiding cricoid pressure and by using External Laryngeal Manipulation

succeed → **tracheal intubation** verify with $ETCO_2$

- **maximum 2 attempts in 2 mins**
- re-oxygenate if SpO_2 <90% with 2 person BVM + OPA + NPA

fail ↓

Plan C:
maintenance of oxygenation/ ventilation

LMA

- avoid cricoid pressure

improved oxygenation → **contact anaesthetics (ext: ____) for fibreoptic intubation**

- **maximum 2 attempts in 2 mins**
- plan D if SpO_2 <75%

fail ↓

Plan D:
rescue techniques for "can't intubate can't ventilate" situation

scalpel/ finger/ tube cricothyroidotomy



scalpel | finger | tube

modified from www.das.co.uk

THE DIFFICULT AIRWAY

- Call for help
- Have a backup plan readily available



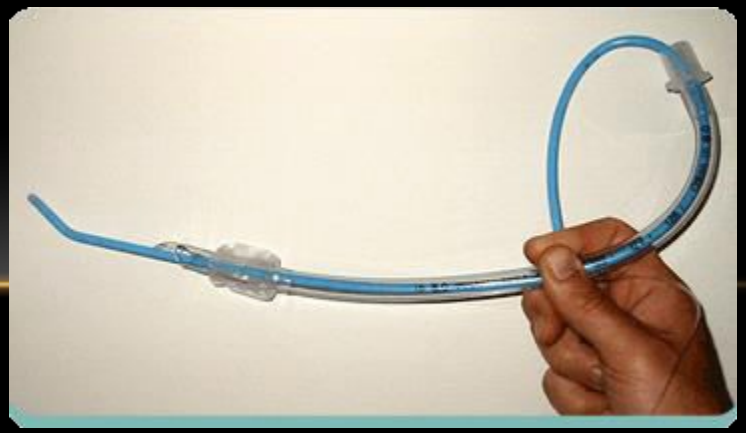


CAN'T INTUBATE, NONEMERGENT PATHWAY: ADJUNCTS TO INTUBATION

- LMA
- Bougie
- Flexible Fiberoptics
- Rigid

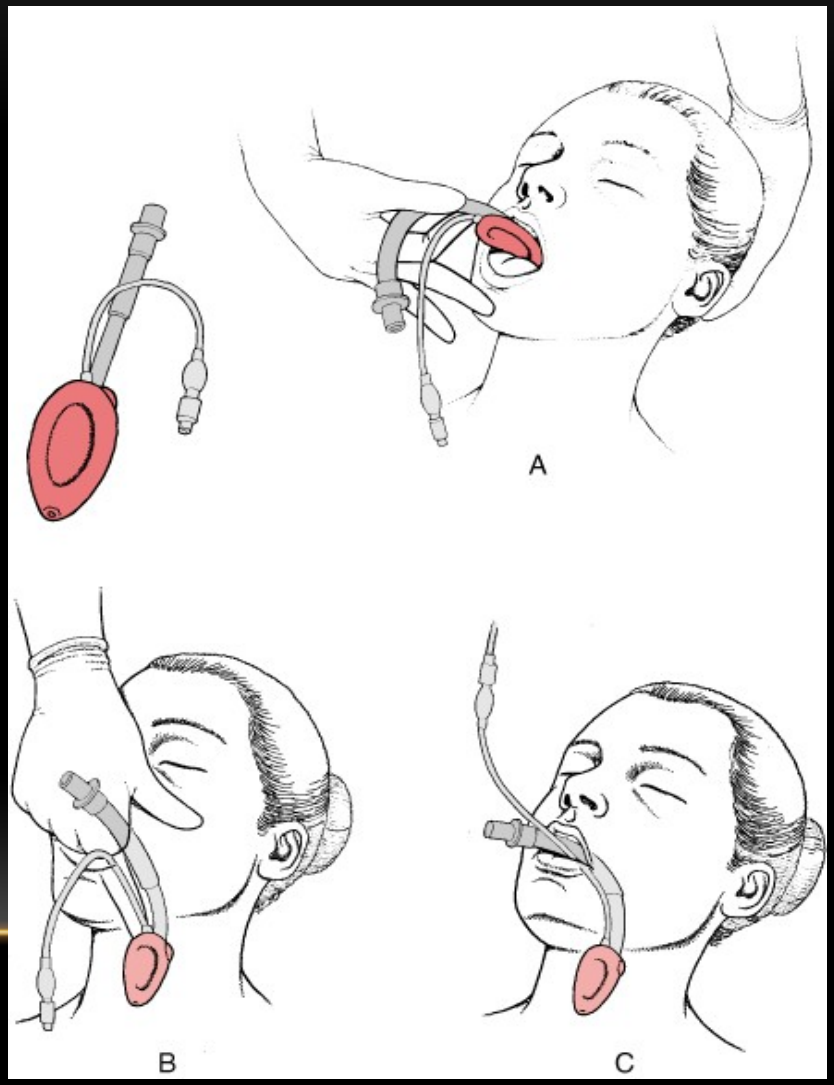






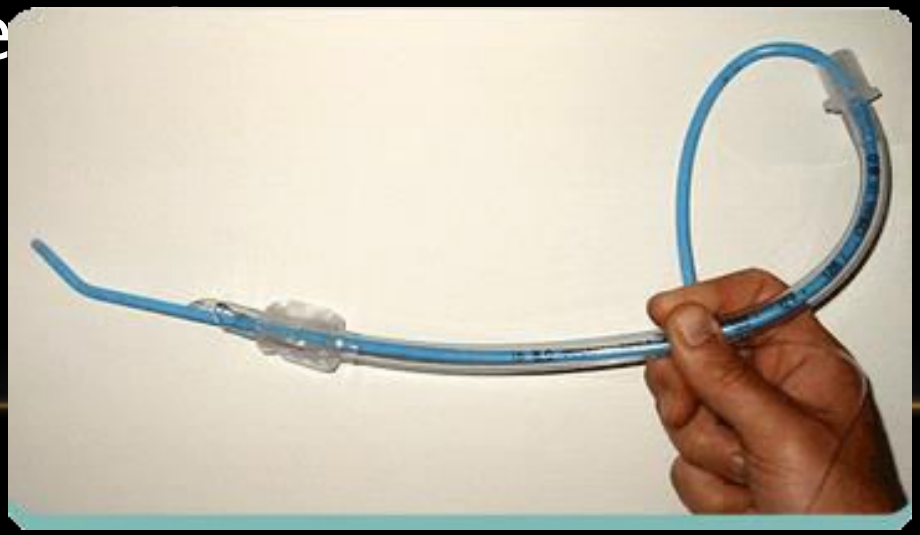
LARYNGEAL MASK AIRWAY

- Extraglottic airway device
- No protection from aspiration
- Place along posterior pharynx into the laryngeal inlet
- May be used as a bridge to tracheostomy
- Do not use: pregnancy



INTUBATING STYLET (BOUGIE)

- Gum elastic
- For directional control when the laryngeal inlet cannot be seen
- Blind passage, confirm with clicks on the trachea
- Cheap, e



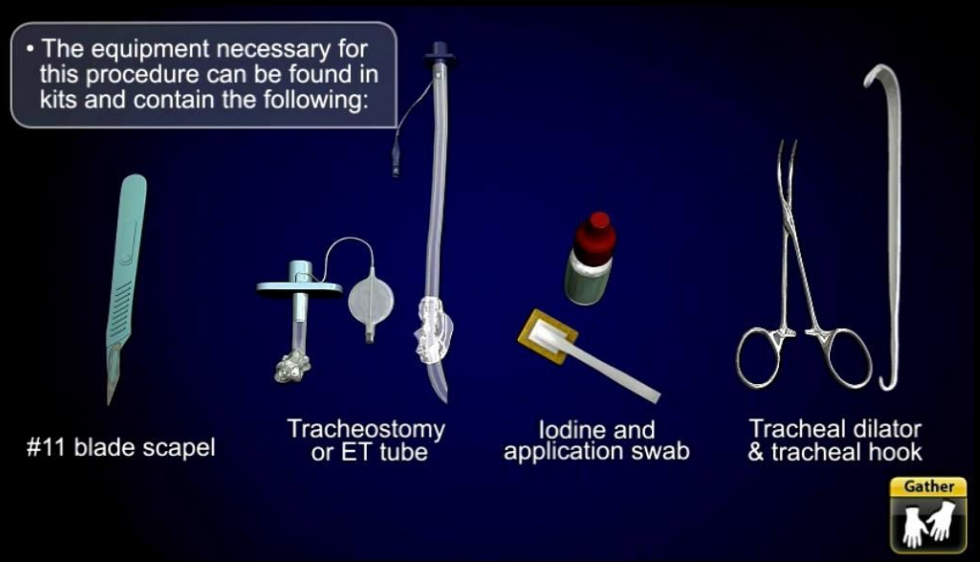
CAN'T INTUBATE, CAN'T VENTILATE…

- Emergent invasive airway access

CRICOTHYROIDOTOMY: SURGICAL AIRWAY

- An emergent procedure to secure a surgical airway

- Equipment:
  - Eye protection, ma
  - Knife (11 or 10 bla
  - Hemostat
  - ETT
  - suction



HARDEST PARTS ABOUT A CRIC:

1. Knowing when to do it

2. Knowing your anatomy

The Montpellier-ICU intubation algorithm

Bundle to limit complications related to intubation.

The Montpellier-ICU intubation algorithm

PRE-INTUBATION

1. Presence of two operators
2. Fluid loading (isotonic saline 500 ml or starch 250 ml) in absence of cardiogenic edema
3. Preparation of long-term sedation
4. Pre-oxygenate for 3 min with NIV in case of acute respiratory failure (FiO_2 100 %, pressure support ventilation level between 5 and 15 cmH_2O to obtain an expiratory tidal volume between 6 and 8 ml/kg and PEEP of 5 cmH_2O)

PER-INTUBATION

5. Rapid sequence induction:
   - Etomidate 0.2-0.3 mg/kg or ketamine 1.5-3 mg/kg
   - Succinylcholine 1-1.5 mg/kg (in absence of allergy, hyperkalemia, severe acidosis, acute or chronic neuromuscular disease, burn patient for more than 48 h and medullar trauma)
   - Rocuronium: 0.6 mg/kg IVD in case of contraindication to succinylcholine or prolonged stay in the ICU or risk factor for neuromyopathy
6. Sellick maneuver

POST-INTUBATION

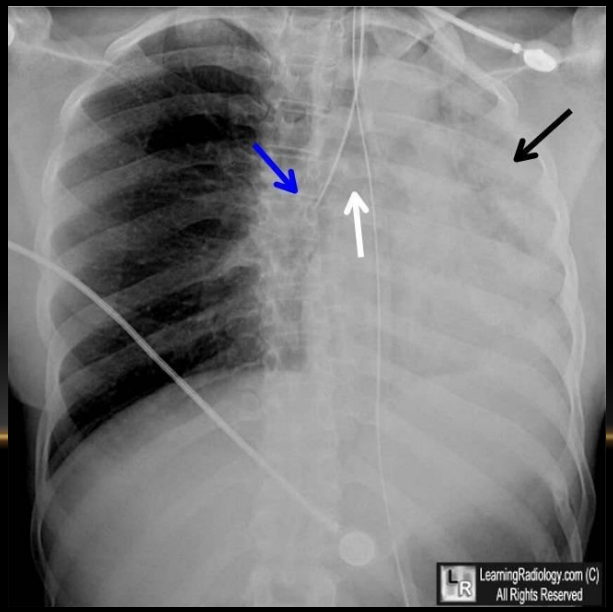
7. Immediate confirmation of tube placement by capnography
8. Norepinephrine if diastolic blood pressure remains < 35 mmHg
9. Initiate long-term sedation
10. Initial 'protective ventilation': tidal volume 6-8 ml/kg, PEEP < 5 cmH,O and respiratory rate between 10 and 20 cycles/min, FiO_2 100 % for a plateau pressure < 30 cmH2O
11. Recruitment maneuver: CPAP 40 cmH_2O during 40 s, FiO_2 100 % (if no cardiovascular collapse)
12. Maintain intubation cuff pressure from 25-30 cmH_2O

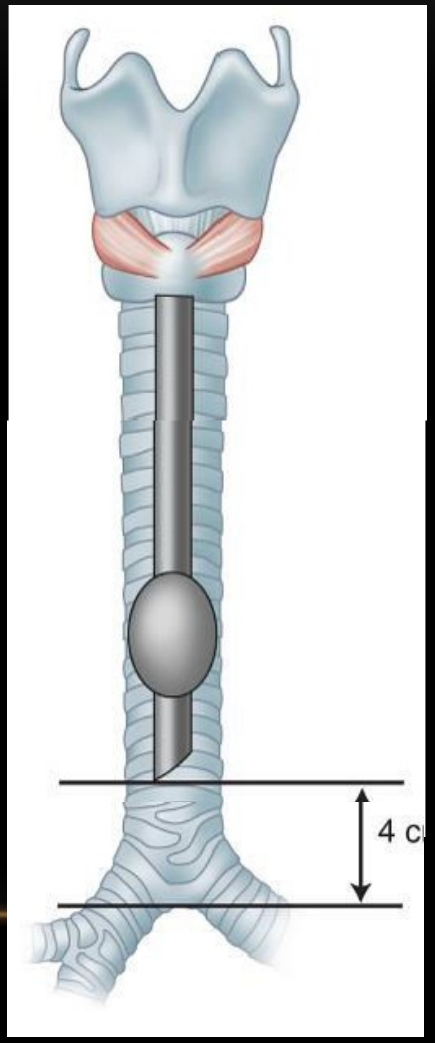
NIV, non-invasive ventilation; CPAP, continuous positive airway pressure; FiO_2, inspired fraction of oxygen

Postintubation Care: Confirming Placement

- Auscultate
- ETCO2
- CXR
- bronchosc







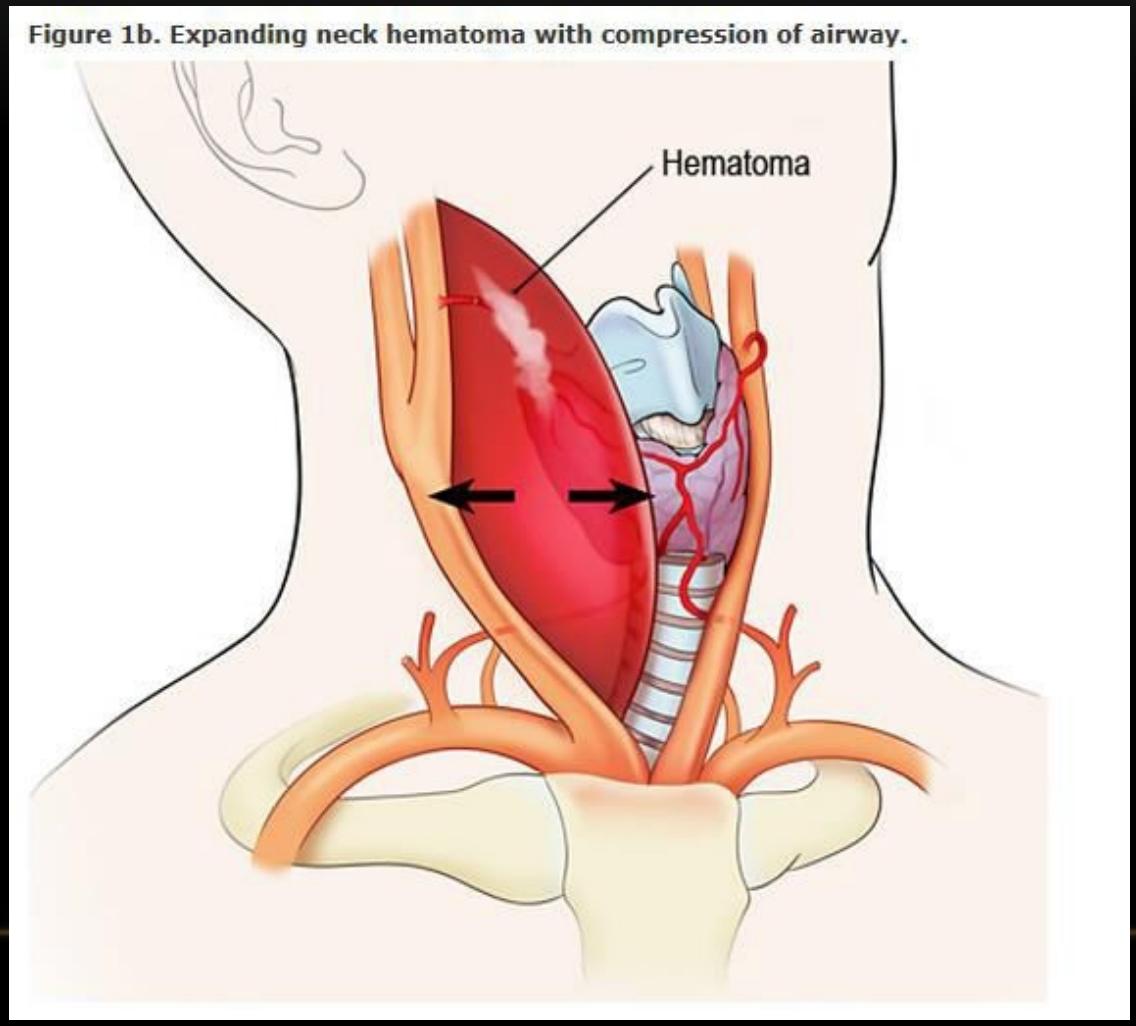
Confirmation of tracheal Intubation

The NAP4 report[7] showed that failure to use capnography, contributed to 17 deaths or brain damage in ICU. Esophageal intubations and accidental tube displacements accounted for 82% of events leading to death or brain damage. This report strongly recommends the use of capnography for confirmation of TI in all critically ill patients, irrespective of location.

OTHER AIRWAY ISSUES

- The Expanding Neck Hematoma
- Obstructed ETT
- Unplanned Extubation
- Extubation of the Difficult Airway

EXPANDING NECK HEMATOMA



THE OBSTRUCTED ETT

- Secretions, kinking, biting, blood clots, cuff herniation
- Presents:
  - high peak inspiratory pressures
  - steadily increasing ETCO2 +/- desats

OBSTRUCTED ENDOTRACHEAL TUBE



- 100% oxygen
- Chin lift/jaw thrus
- Attempt to pass suction catheter, bag ventilate
- If stable: irrigate, pass bronch, c/s airway
  exchange catheter
- If unstable: remove ETT and reintubate +/- airway exchange

AIRWAY EXCHANGE CATHETER



UNPLANNED EXTUBATION

- Self-Extubation & Accidental Extubation
  - 60% require reintubation
  - Listello et al: 87% require reintubation within 4 hours
- Associated with longer ICU stay, vent days, morbidity and mortality
- UE incidence considered an indicator of

LITERATURE REVIEW
doi: 10.1111/j.1478-5153.2012.00542.x

Unplanned extubation in critically ill adults: clinical review

Panagiotis Kiekkas, Diamanto Aretha, Eleftheria Panteli, George I Baltopoulos and Kriton S Filos

- UE incidence varies widely
  - 0.5- 14.2% of patients
- 68- 95% are self-extubations
- Major risk factors: agitation, inadequate sedation, decreased patient surveillance
- Restraints controversial
  - Can still reach tube, may worsen

EXTUBATION OF THE DIFFICULT AIRWAY

- Airway obstruction is a primary cause of respiratory distress after extubation
  - Incidence 3-30%
  - ~7% reintubation

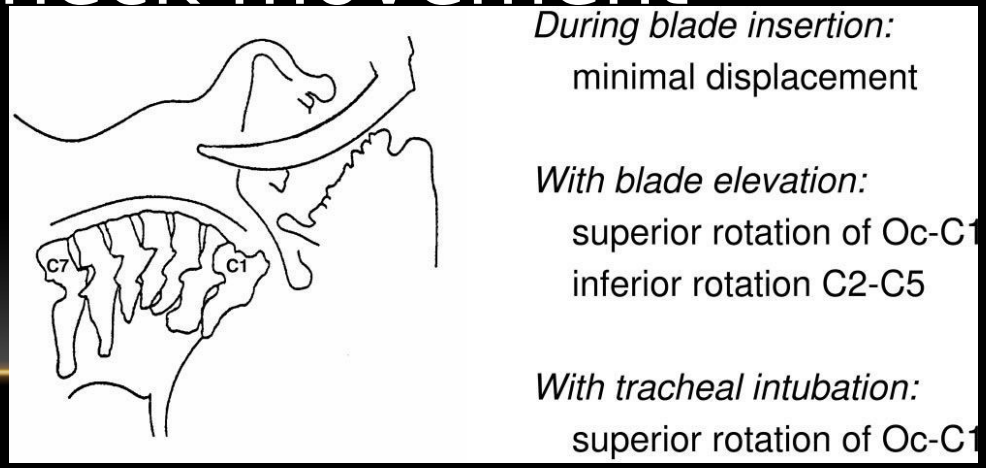
EXTUBATION OF THE DIFFICULT AIRWAY

- Airway complications more likely with extubation
- Obesity, OSA, head/neck/airway surgery= high risk extubation failure
- Routine Extubation Criteria
- Cuff Leak test
- +/- Airway Exchange Catheter
- Steroids- Cochrane Review 2009:
  - In adults, multiple doses of corticosteroids begun 12- 24 hours prior to extubation do appear beneficial for patients with high risk

INTUBATING WITH A C-SPINE INJURY

- Manual in-line immobilization = gold standard
  - Ok to remove anterior portion of collar
- All airway maneuvers will cause some degree of neck movement

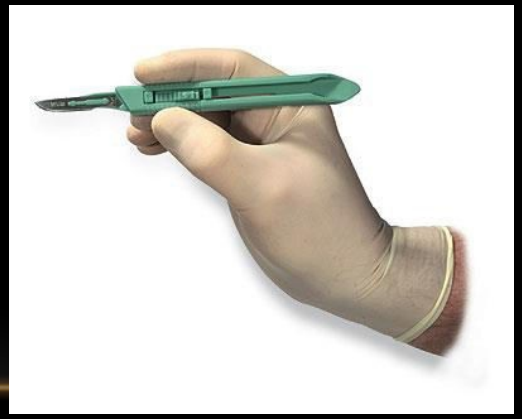




INTUBATING WITH A C-SPINE INJURY

- Fiberoptic bronchoscope-assisted intubation for limited mobility
- HALO: be prepared for surgical airway





TAKE HOME MESSAGE

- **Maintaining and securing a patent airway is primary goal in any emergency and difficult airway situation**
- **It’s a challenge**
- **But not impossible if we know correct techniques**
  - **Recognize the difficult a**
  - **How much time do you h**
  - **Who else is around?**
- **What is your backup procedure**



THANKYOU