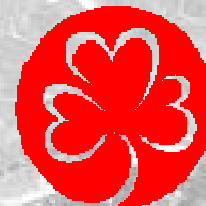


Airway crisis in anaesthesia



Dr. Libby H Y Lee



The University of Hong Kong

31 Mar 2007

1. Definition

2. Incidence

3. Algorithm

4. Prevention

1. Definition

2. Incidence

3. Algorithm

4. Prevention

Difficult airway

ASA Task Force 2003

*'the clinical situation in which a
conventionally trained anesthesiologist
experiences difficulty with face mask
ventilation, difficulty with tracheal
intubation, or both'*

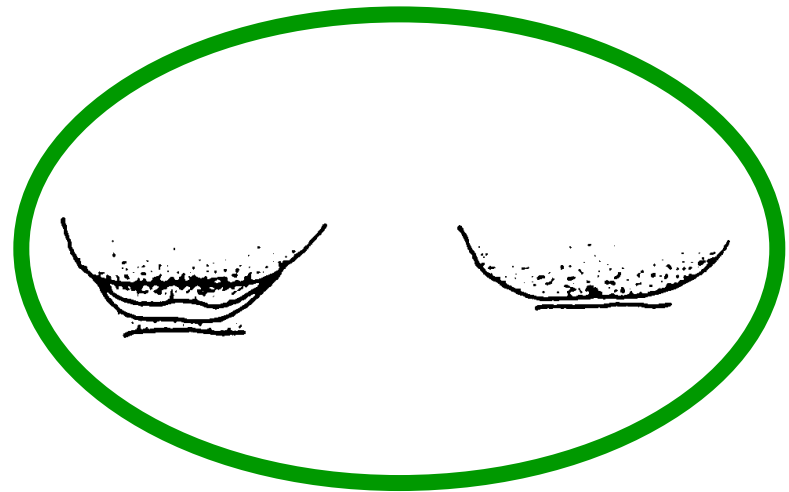
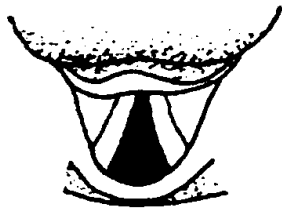
Difficult intubation

ASA Task Force 2003

‘proper insertion of the tracheal tube with conventional laryngoscopy requires more than three attempts or more than 10 minutes’

Difficult laryngoscopy

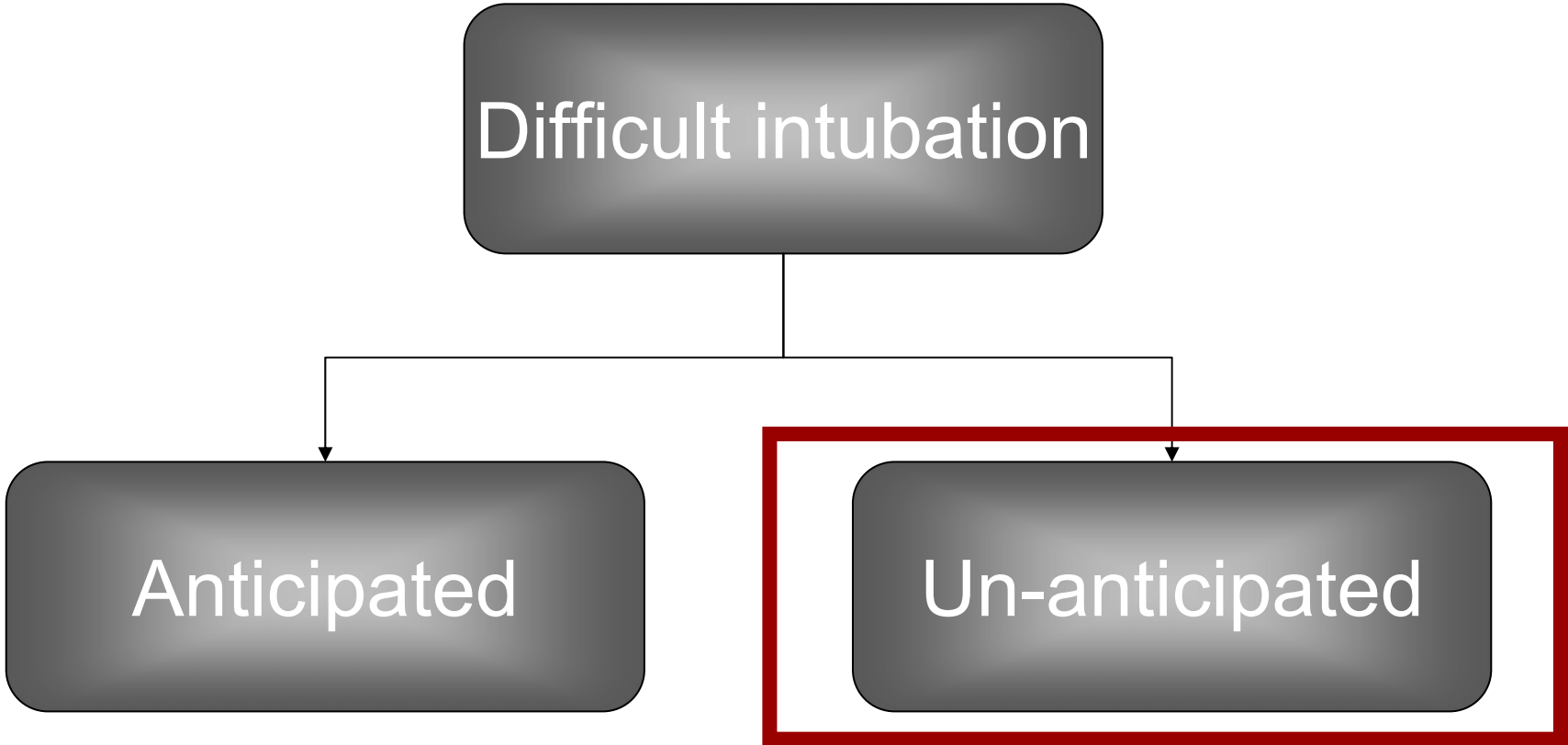
'It is not possible to visualize any portion of the vocal cords with conventional laryngoscopy'



Failed intubation

*'placement of the endotracheal tube fails
after multiple intubation attempts'*

Difficult intubation



```
graph TD; A[Difficult intubation] --> B[Anticipated]; A --> C[Un-anticipated];
```

A flowchart illustrating the classification of difficult intubation. The root node is 'Difficult intubation', which branches into two categories: 'Anticipated' and 'Un-anticipated'. The 'Un-anticipated' node is highlighted with a red border.

Anticipated

Un-anticipated

1. Definition

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Incidence

Rocke:

- 7.9% (119/1500) of parturient: some difficulty in intubation for LSCS
- 3.2% (30/1500) : very difficult to intubate

Incidence

Rose:

- In a non-obstetrical, mixed surgical population

→ 2.5% : two laryngoscopies

→ 1.8% required more than three

Rose DK. Can J Anaesth 41:372,1994.

Incidence

Difficult intubation: 1-8% (level 4 evidence)

Failed intubation: 0.13-1.3%

Difficult-impossible mask ventilation: 5%

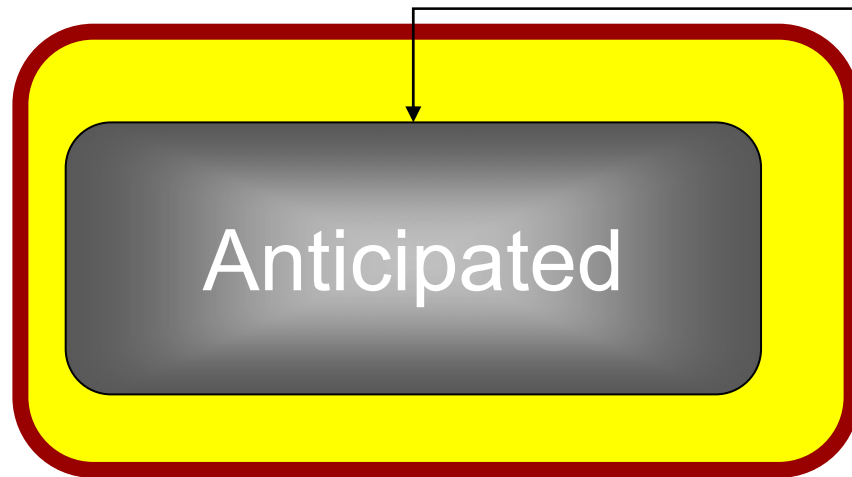
1. Definition

2. Incidence

3. Algorithm

4. Prevention

Difficult intubation



Un-anticipated







Epiglottitis









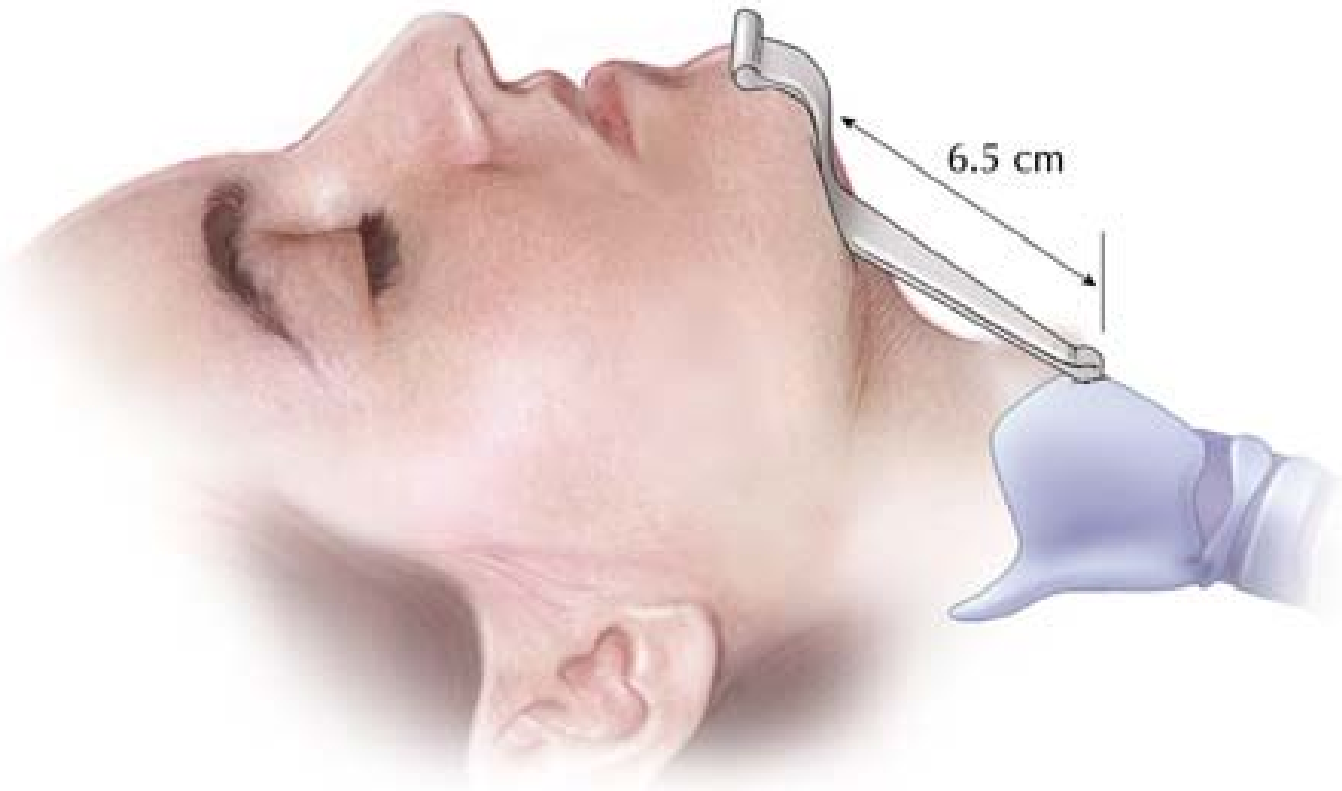




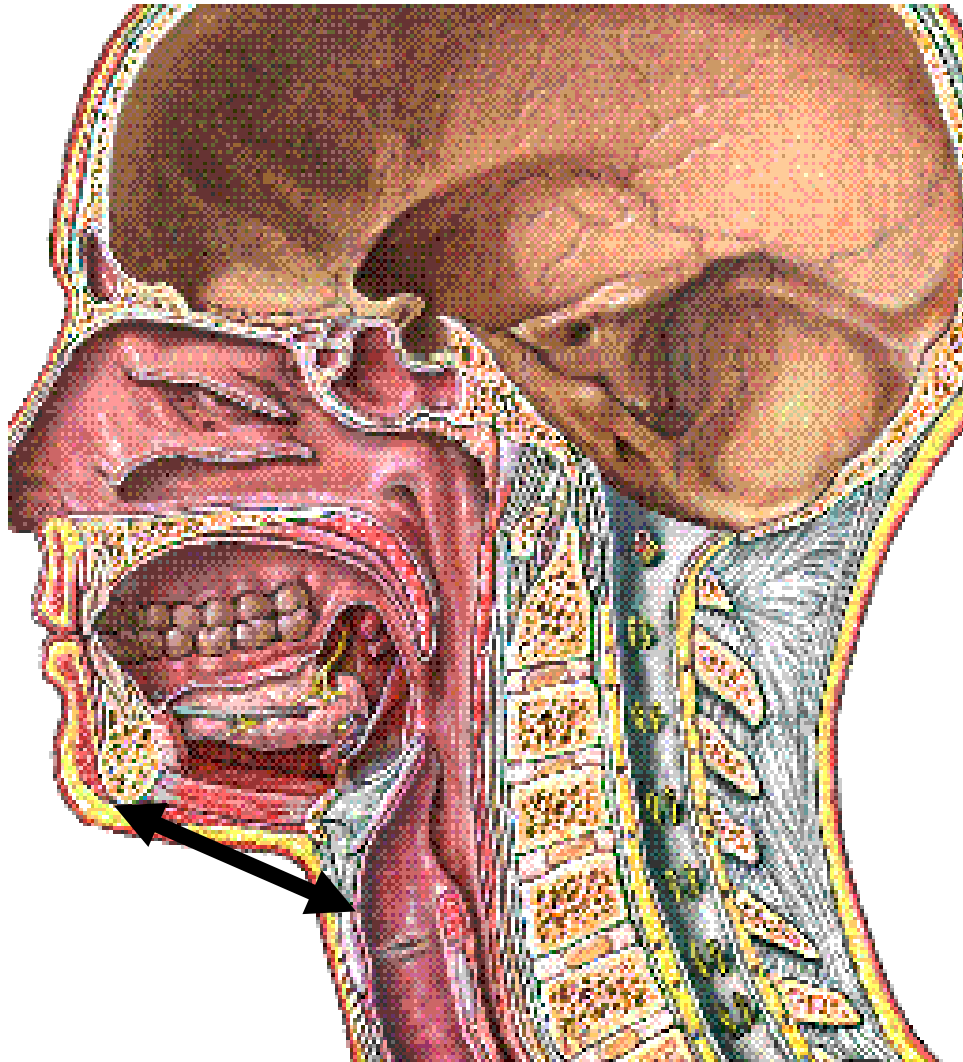
Mallampatti Score



Thyromental distance

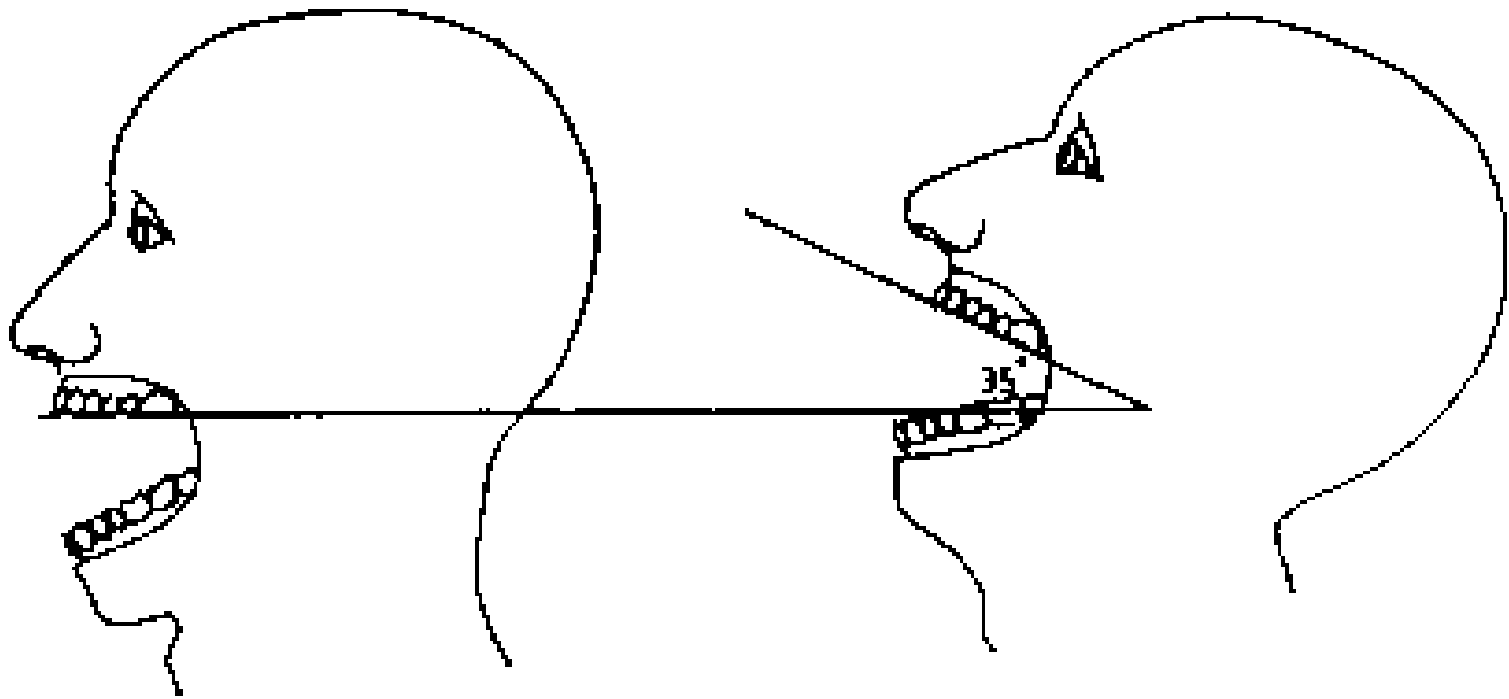


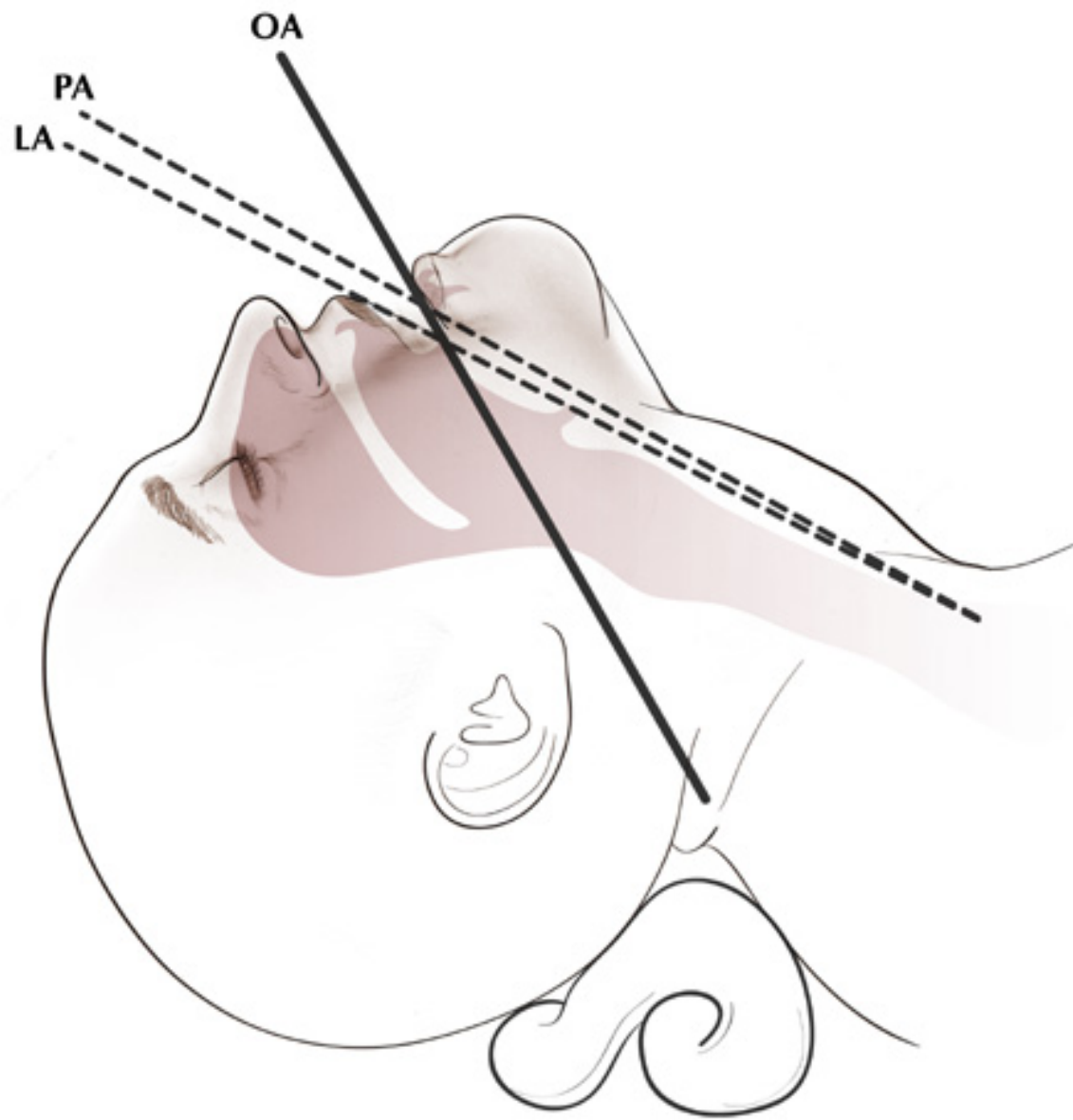
Thyromental distance



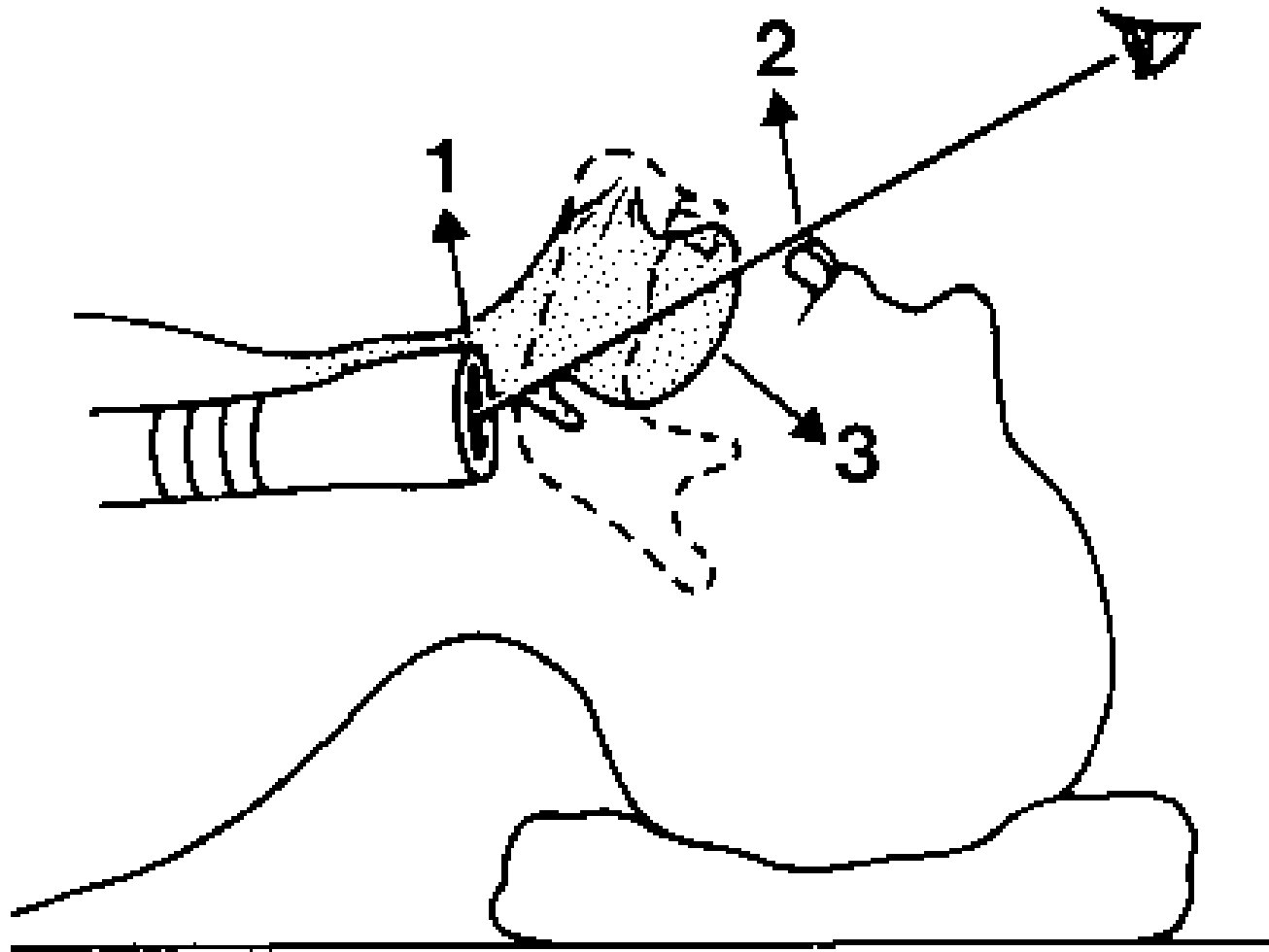
Neck Movement

Atlanto-occipital joint extension





Mandibular space



Predictors of difficult intubation

- Using > 1 test increase predictability

Acta Anaesthesiol Scand. 1996 Apr;40(4):421-4

Br J Anaesth. 1998 Feb;80(2):140-6

Predictors of difficult intubation

<u>Test</u>	<u>Sensitivity</u>	<u>Specificity</u>	<u>+ve PV</u>
MP grading	62%	98%	57%
TM distance	15%	98%	22%
Sternomental distance	0%	100%	0%
Length of Mandible	30%	76%	4%
Incisor gap	30%	97%	30%
	85%	95%	36%

Predictors: meta-analysis

“The most useful bedside test for prediction was found to be a combination of the Mallampati classification and thyromental distance.....”

Algorithm

Failed intubation won't kill the patient, but failed ventilation does

Algorithm

USA: American Society of Anesthesiologists

J Clin Anesth 2003; 15:418-422

UK: Difficult Airway Society

Anaesthesia 2004; 59:675-694

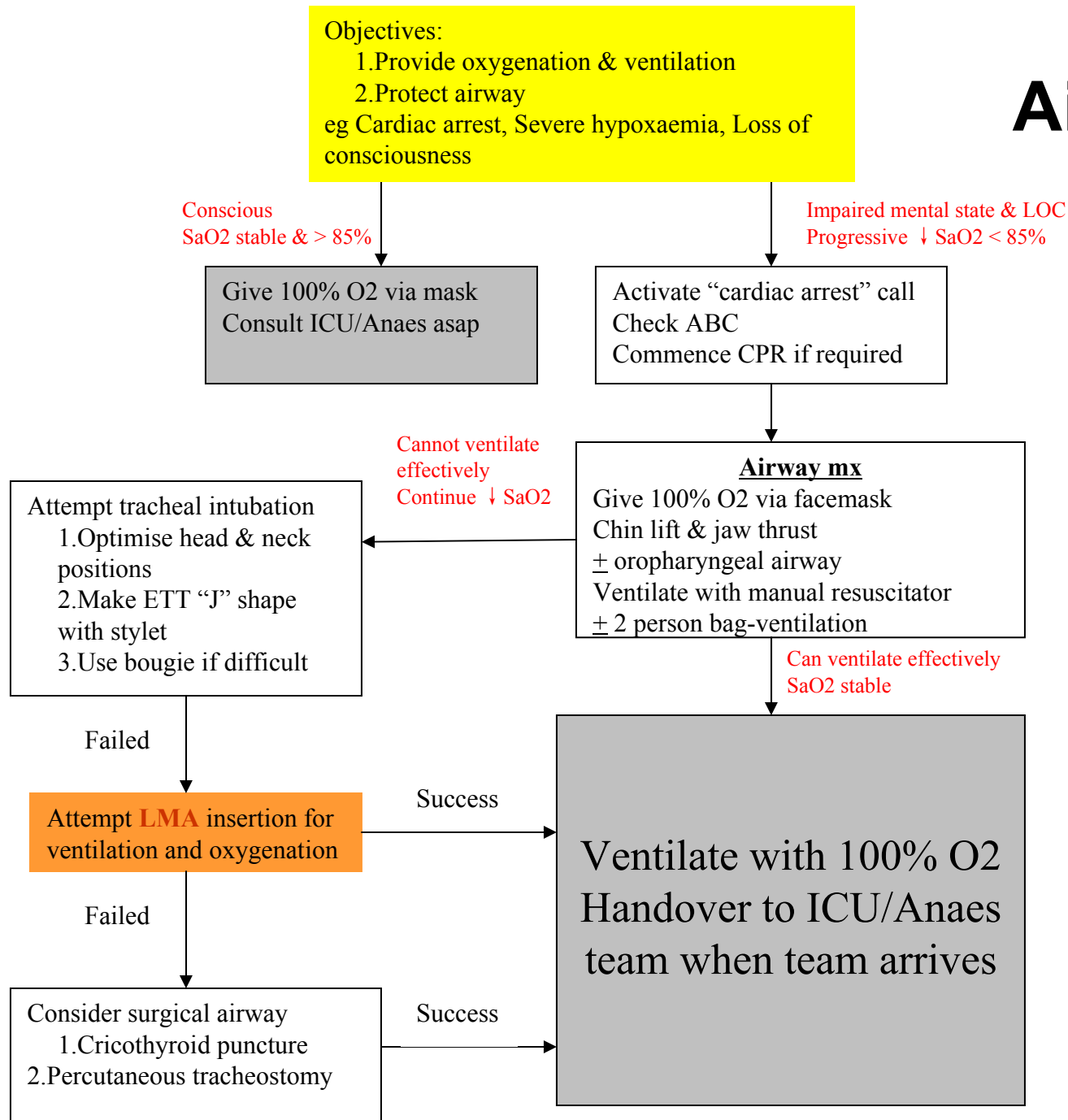
Australia: COVER ABCD -A swift check

Anaes Intens Care 1993

France: intubating LMA and bougie

Anesthesiology 2004; 100:1146-1150

Airway Mx



Direct Laryngoscope



Airway Equipment



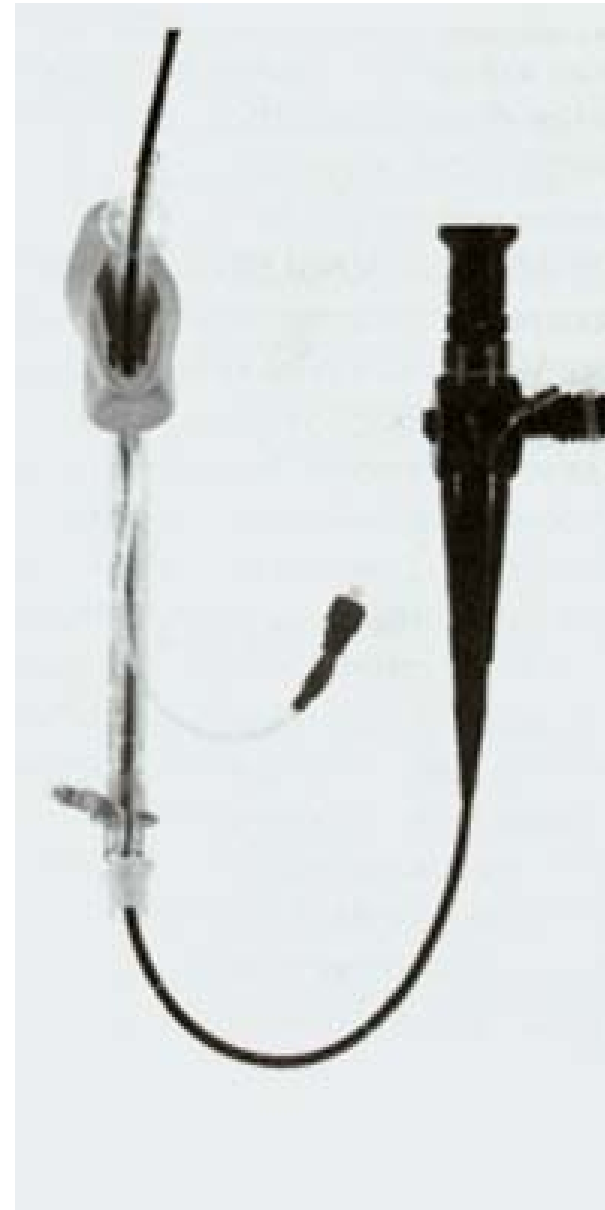
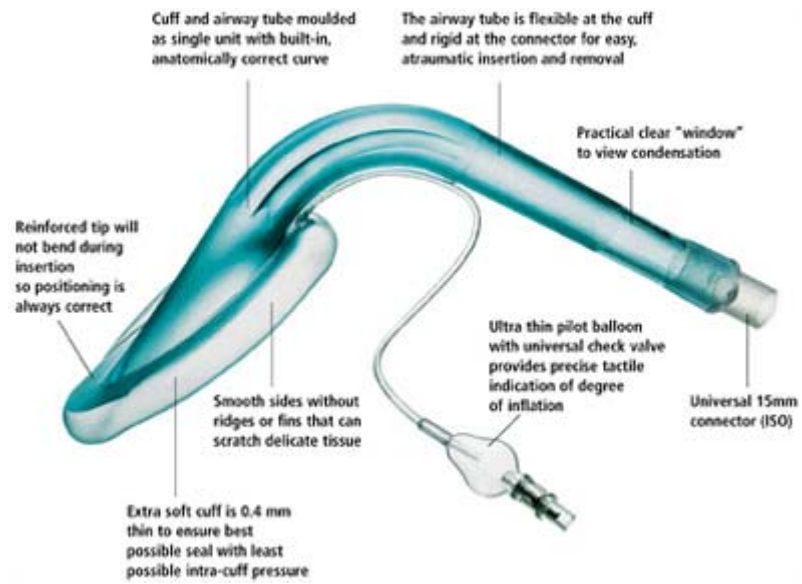
Macintosh blade
with handle

Wisconsin blade

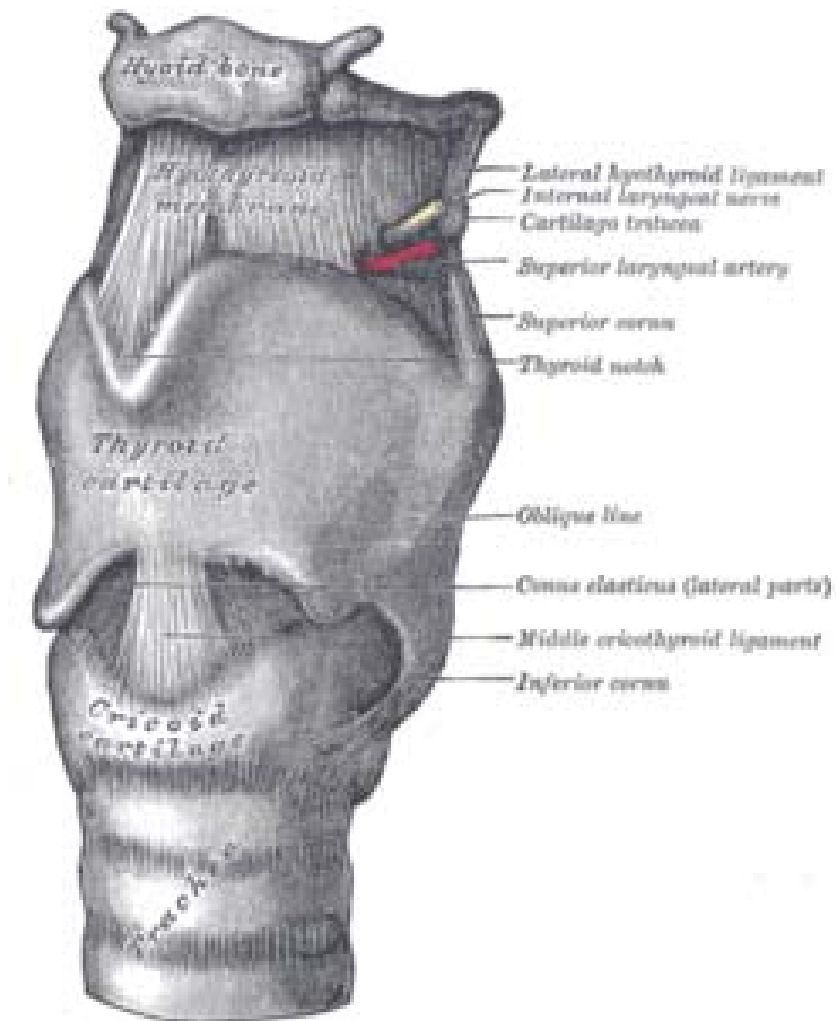
Miller blade

Laryngeal Mask

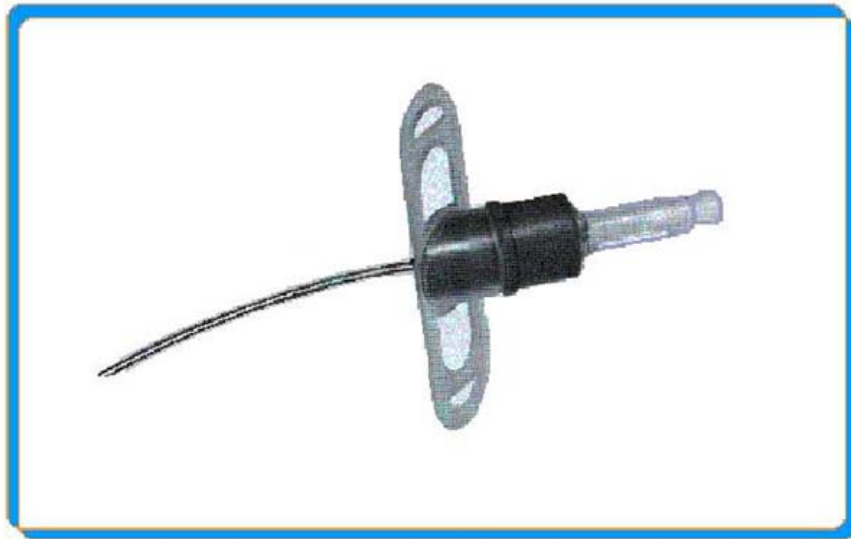




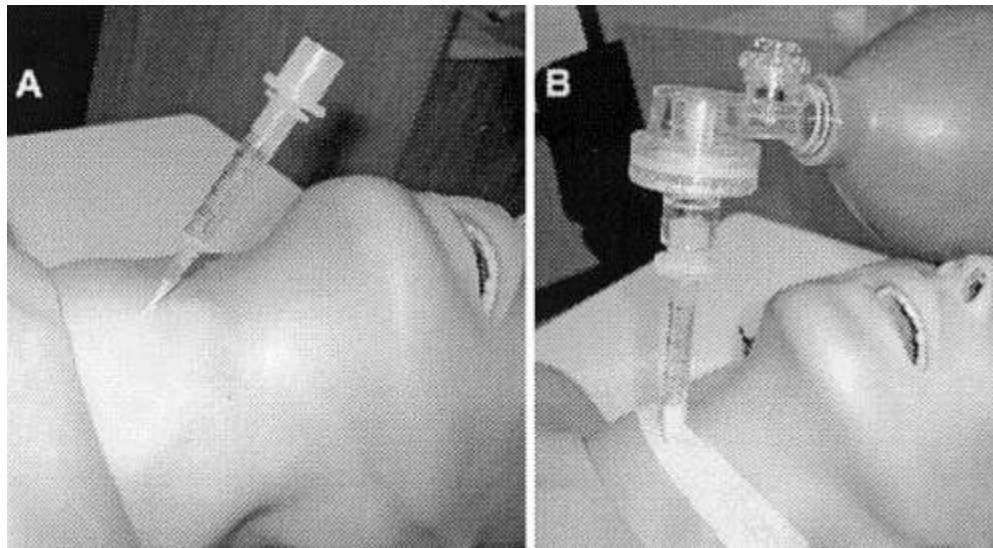
Cricothyrotomy



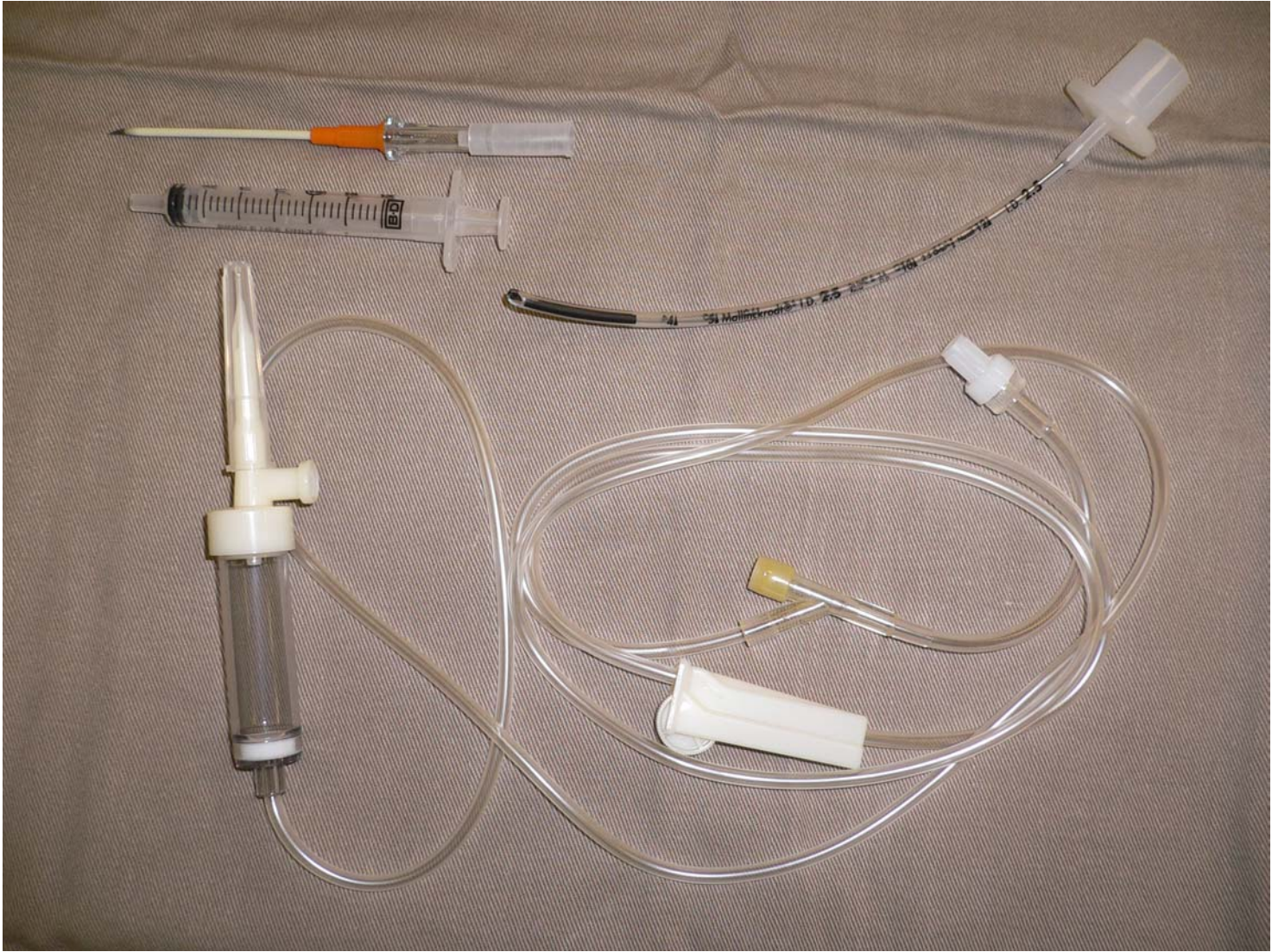
Jet ventilator



Needle Cricothyrotomy



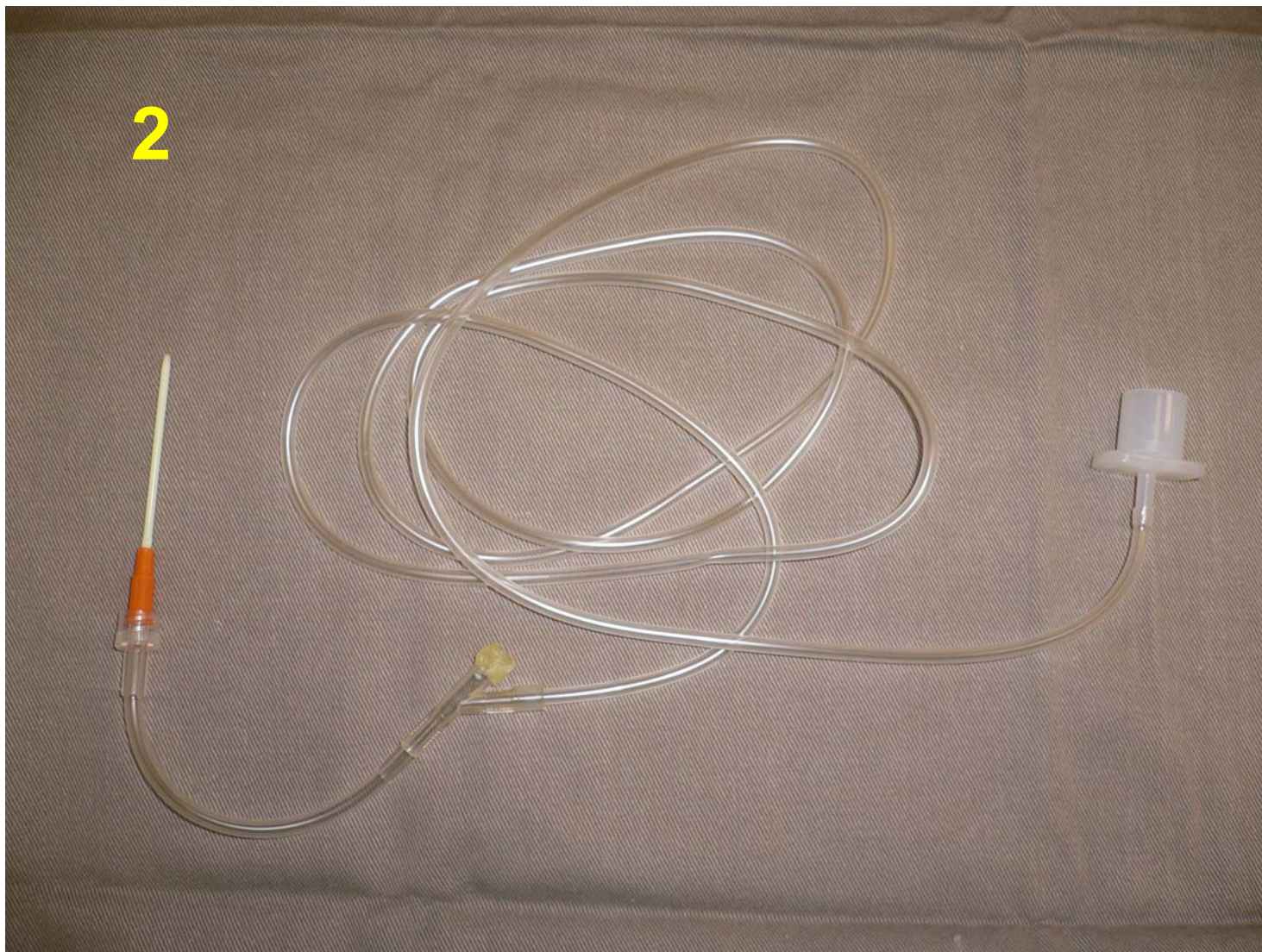
A collection of medical equipment is laid out on a light-colored, textured fabric surface. The items include: a syringe with a black plunger and a white barrel, marked with '10' and '100'; a clear plastic catheter with a black plunger and a white barrel, marked with '10' and '100'; a clear plastic drip chamber with a black plunger and a white barrel; and a clear plastic tube with a black plunger and a white barrel. The equipment is arranged in a loose, overlapping manner.



1

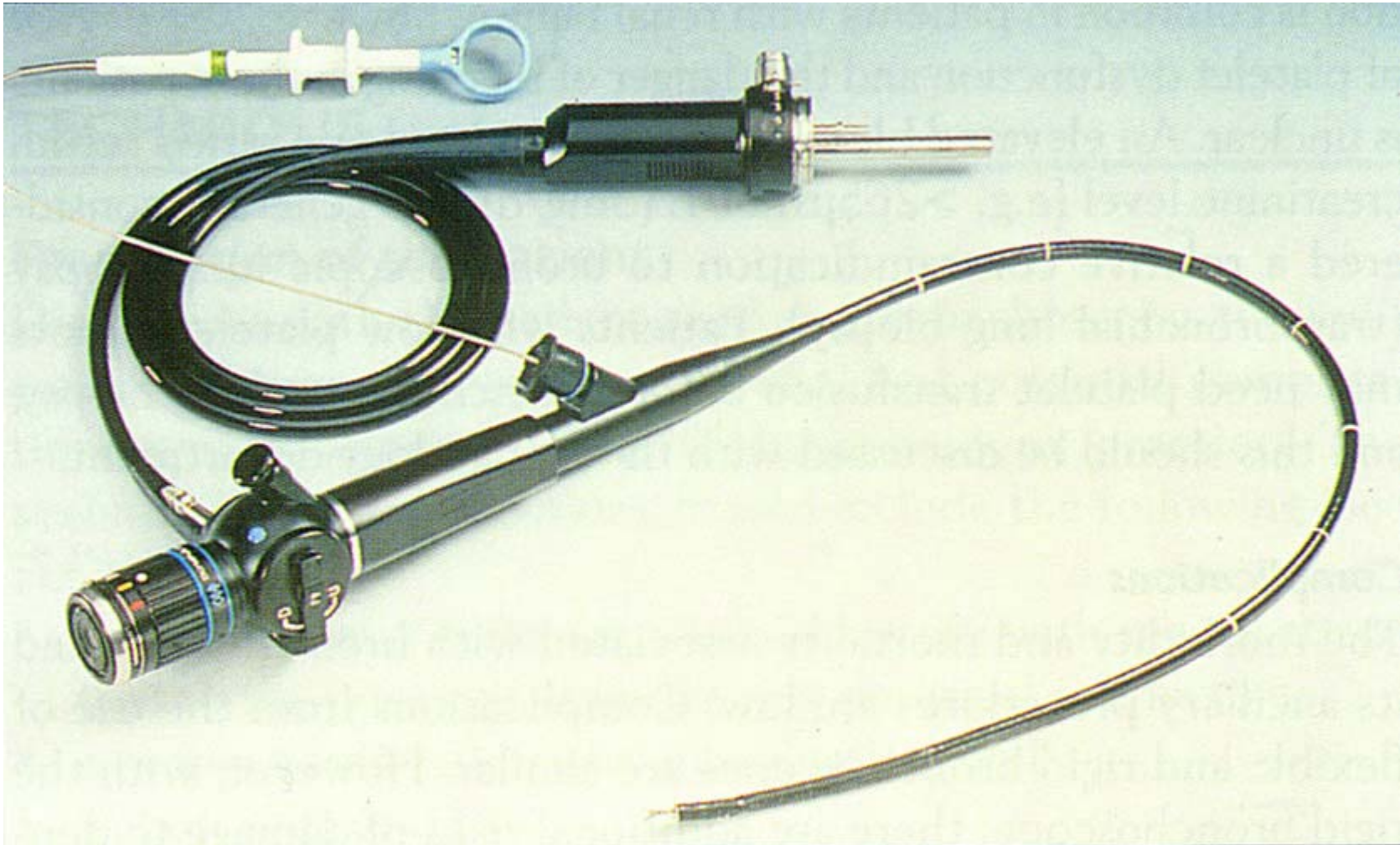


2





FOB



Prevention = Training

More important.....

- Refine the existing skills >>> using new tools!!!!

Training

1. Practise under supervision
2. Algorithm, guidelines
3. Simulator, workshop

Simulation

The Institution of Clinical Simulation

The Hong Kong College of
Anaesthesiologists



From the College

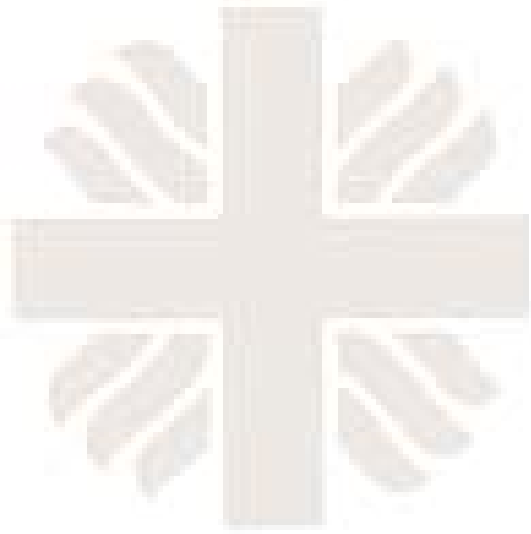


The Institute of Clinical Simulation

**A Collaboration between the Hong Kong College of
Anaesthesiologists and North District Hospital**



**Advanced Difficult Airway Management
(ADAM-D) Workshop for Doctors**



ACLS Training Centre

Caritas Medical Centre









Annual Scientific Meeting **in** **Anaesthesiology**

17 – 18 November 2007, HKCEC

Expanding the Boundaries



The Hong Kong College of Anaesthesiologists



The Society of Anaesthetists of Hong Kong



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E-mail: meeting.hk@asia.cmpmedica.com

Web-sites: www.hkca.edu.hk/asm2007.htm

www.sahk.hk/upcomingevents.html

Conclusion

Difficult Intubation

- Inevitable event
- Preventive medicine:
 - Unanticipated → Anticipated event
- New Gadgets, not useful without practise
- Algorithm, guidelines
- Workshops and Simulation