CAN'T INTUBATE CAN'T OXYGENATE (CICO)

Management of the Critically Obstructed Airway

Session 5: Infraglottic Airway Rescue - Practical Session

Format: Practical sessions

Aims: Practice content of Session 4

Description:

In rounds 1-3 participants rotate through three different workstations that run concurrently. In round 4 groups remain at the last station they completed. The setup is changed such that all stations run an identical station simultaneously, the aim of which is to practice an integrated scenario involving all three stages covered in stations 1-3.

1. Cannula cricothyroidotomy and jet oxygenation
2. Conversion of cannula to definitive airway – Melker™ device
3. Scalpel-bougie technique
4. Integrated practice
   The purpose of this workstation is to:
   - become familiar with the steps and decisions of the CICO algorithm and work through each of these steps *in order*
   - think about how the team should be managed/lead during this crisis.
   - practice the scalpel-finger-cannula technique

Duration: 120 minutes (4 x 30 minute stations)

Documents and resources: See equipment list infraglottic rescue; lap-tops with videos and PowerPoint slides for review; laminates of algorithms.

Venue: Breakout areas

Equipment: See Infraglottic Airway Rescue

Structure:

1:Cannula cricothyroidotomy / Jet oxygenation	2: Melker™ conversion	3: Scalpel-bougie /Scalpel-Finger-Cannula techniques
3: Scalpel-bougie /Scalpel-Finger-Cannula techniques	1: Cannula cricothyroidotomy/ Jet oxygenation	2: Melker™ conversion
2: Melker™ conversion	3: Scalpel-bougie /Scalpel-Finger-Cannula techniques	1: Cannula cricothyroidotomy / Jet oxygenation
4: Practice scenario	4: Practice scenario	4: Practice scenario

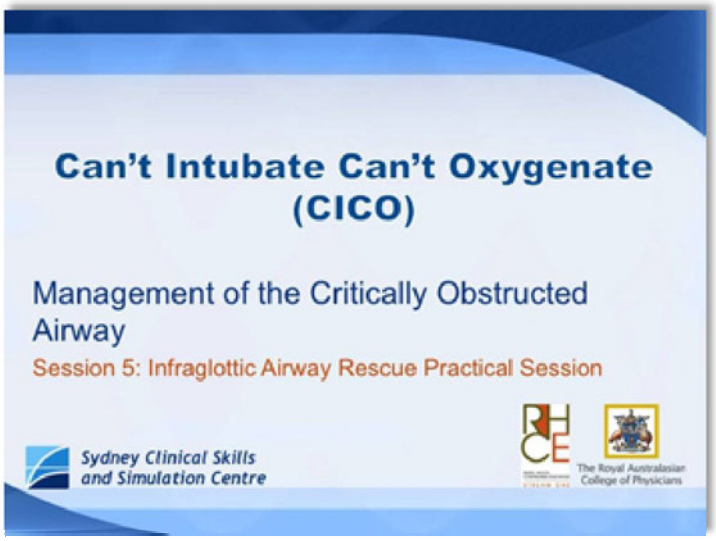
CAN'T INTUBATE CAN'T OXYGENATE (CICO)

Management of the Critically Obstructed Airway

Workstation 2 can be run as doctors' (practice techniques) and nurses (practice setup) version.

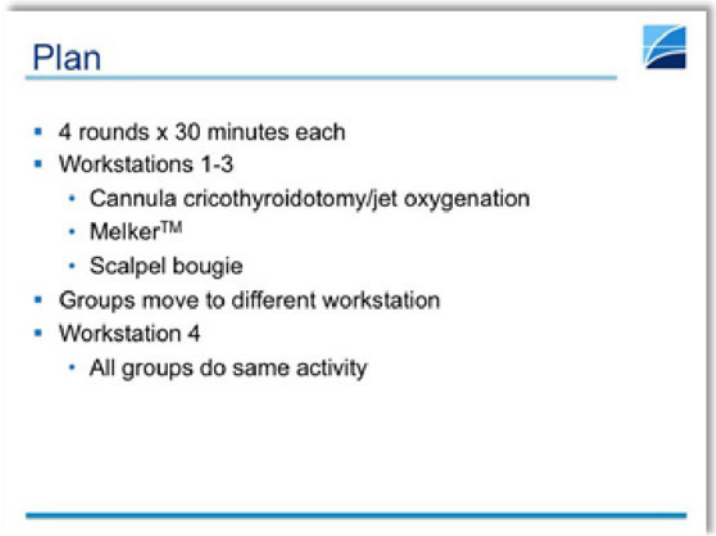
Notes to accompany PowerPoint slides

Slide 1



This practical workstation provides participants with an opportunity to rehearse aspects of supraglottic airway rescue presented in Session 2.

Slide 2

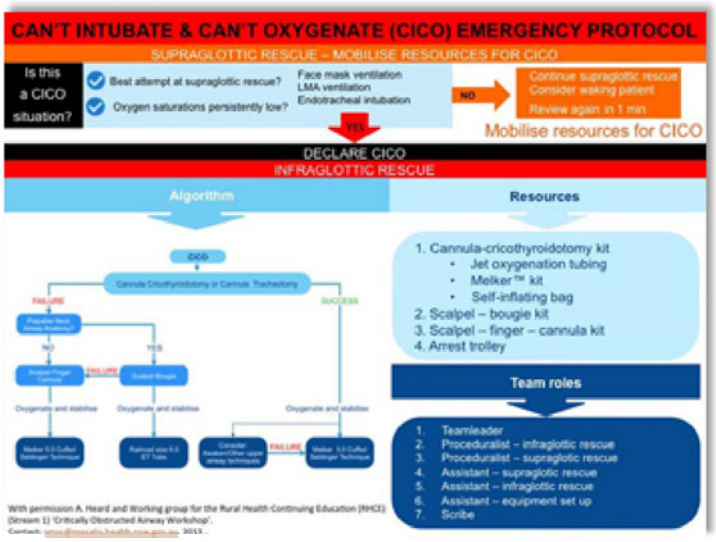


The facilitator explains the flow of the workstations for this practical session

CAN’T INTUBATE CAN’T OXYGENATE (CICO)

Management of the Critically Obstructed Airway

Slide 3



Slide from Session 4 to be available during the workstations.

Workstation 1:
Cannula Cricothyroidotomy/Jet oxygenation

Steps

1. Revise the CICO algorithm highlighting the 'success' pathway: cannula cricothyroidotomy – jet oxygenation –conversion to ETT using the Melker™ Kit (if waking patient is not feasible).
2. Demonstrate the cannula cricothyroidotomy technique.
3. Demonstrate how to jet oxygenate.
4. Have participants to practice this in pairs with one person as proceduralist and the other as assistant.

Workstation 2:
Conversion to endotracheal tube with Melker™ Kit

Steps

1. Revise the CICO algorithm highlighting the "success' pathway: cannula cricothyroidotomy – jet oxygenation –conversion to ETT using the Melker™ Kit (if waking patient is not feasible).
2. Demonstrate how to use Melker kit to convert to a definitive airway.
3. Oxygenate with Manual Resuscitation bag.
4. Have participants to practice this in pairs with one person as proceduralist and the other as assistant.

Workstation 3:
Scalpel-Bougie and Scapel-Finger-Cannula Techniques

Steps

1. Revise the CICO algorithm highlighting the 'failure' pathway. For example:
    - Context: The CICO has already been declared. Cannula cricothyroidotomy has been performed.
    - First decision: Has it enabled successful jet oxygenation? If 'no' then prepare for a Scalpel-based technique
    - Second decision: Feel the neck for palpable anatomy. Is the anatomy palpable? If 'yes' then perform the scalpel-bougie technique, if 'no' then perform the scalpel-finger-cannula technique.
    - Third decision: If scalpel-bougie has been performed has it enabled oxygenation? If 'no' then perform the scalpel-finger-cannula technique.
2. Demonstrate the scalpel-bougie technique.
3. Have participants practice this.
4. Demonstrate the scalpel-finger-cannula technique.
5. Have participants practice this.

Workstation 4: Practice

In the fourth round all groups undertake an identical workstation.

Aims

The purpose of this workstation is to:

1. Rehearse each of the steps and decisions in the CICO algorithm *in order*
2. Consider how the team should manage this crisis including roles and when to mobilise specific pieces of equipment.
3. Rehearse as a team

Overview

Each participant takes a turn demonstrating the emergency algorithm in sequence with other members of the group playing another team role. They should run this like a game. The participants should start by declaring a CICO and follow the next step shown in the algorithm (cannula cric). They then assume that their initial step has failed and refer to the algorithm for guidance on their next step (e.g. scalpel-bougie if neck anatomy is palpable). Each procedure should be assumed to fail until they finally reach the scalpel-finger-cannula procedure which succeeds.

Steps

1. Start with a short introduction

The facilitator places the procedures in the context of the CICO team algorithm. He/she walks through the algorithm steps whilst demonstrating the algorithm on a neck trainer asking participants to take on assisting roles (show them the CICO protocol).

2. Brief the participants on how to run the scenarios

"You have just declared a CICO emergency. I'd like you to work in teams through the steps of the CICO algorithm, so (then pointing to the algorithm):

- *Begin at the start of the algorithm by performing a needle cricothyroidotomy.*
- *Then I want you to assume that the cannula cricothyroidotomy fails (e.g., there was blood or vomit in the airway) so you need to move to the surgical arm of the algorithm.*
- *Start by feeing the neck.*
- *If you think that the neck anatomy is palpable then attempt a scalpel bougie technique.*
- *If you don't think the neck anatomy is palpable* ***OR*** *if for some reason you have been unsuccessful in intubation with a scalpel-bougie technique (e.g., you did not correctly identify the neck structures) then move on to the scalpel-finger-cannula technique and jet ventilate.*
- *Finally, use the Melker set to convert a cannula technique to a definitive airway.*

3. Run the scenarios

The participants should start by declaring a CICO and follow the next step shown in the algorithm (cannula cric). They then assume that their initial step has failed and refer to the algorithm for guidance on their next step. Each procedure should be assumed to fail until they finally reach the scalpel-finger-cannula procedure which succeeds. For example:

- Declare CICO, allocate roles (as per CICO protocol), refer to algorithm.
- Follow the next step laid out in the algorithm (cannula cricothyroidotomy). Perform cannula cricothyroidotomy.
- They then assume that their initial step has failed and return to the algorithm (e.g., failure due to blood or vomit present in the airway or there may be no obvious reason).
- They palpate the neck and imagine they can feel the trachea or cricothyroid membrane (they should be able to on these models).
- Perform scalpel-bougie cricothyroidotomy.
- Assume it fails (e.g., unable to advance bougie due to incorrect anatomy identified/incorrect technique).
- Return to the algorithm and proceed to next step: scalpel-finger-cannula.
- Jet oxygenate through the cannula.
- Convert to Melker™ airway.