Blocked Tracheostomy

Set-up:	
Lines/access:	RIJ CVC, left radial arterial line, one peripheral cannula
Infusions:	Sedatives, 1L crystalloid at 80mls/hr
Airway:	Tracheostomy with inner tube in situ (both tracheostomy and inner tube occluded)
Ventilator:	V-SIMV 500/8 FiO_2 0.5 Rate 16breaths/min
Other:	Bedside "tracheostomy box" Local tracheostomy algorithm laminated and hanging at bedspace but facing away from scene and not immediately apparent Airway & cardiac arrest trolleys Lung simulator capable of reducing compliance

Clinical Setting

I: You are the ICU registrar and are called by the nurse to assess the patient in bed 5

S: Nurse wants a salbutamol prescription

B: 67M recently returned from theatre after surgical tracheostomy, fully mechanically ventilated and deeply sedated

A: High pressure alarms, falling saturations

R: Called for help

Potential Clinical Course

- Initially **A** Trachy, **B** SpO_2 95% on FiO_2 0.5, not ventilating, $ETCO_2$ 4.6kPa, reduced breath sounds, **C** HR 90bpm SR, BP113/67 **D** sedated
- Becomes more hypoxic and bradycardic
- If no intervention then cardiac collapse
- If appropriate management of blocked tracheostomy then patient will improve
- Identify blocked tracheostomy
- Remove tracheostomy and ventilate via bag valve mask
- Either stays with bag mask ventilation and calls for senior help or proceeds to intubate the patient orally.

The Faculty of Intensive Care Medicine

Info Sheet For Faculty

- Initial settings: SpO_2 95% on FiO_2 0.5
  - $ETCO_2$ 4.6kPa
  - Reduced breath sounds bilaterally
  - HR 90bpm
  - BP 113/67

- Progress to: SpO_2 90% whilst trachy in situ (on placement first sandbag)
  - $ETCO_2$ 6.7kPa
  - HR 116bpm
  - BP 101/54

- Progress to: SpO_2 86% (on placement second sandbag)
  - $ETCO_2$ absent
  - HR 49bpm
  - BP 88/42

- On removal of tracheostomy and manual ventilation:
  - SpO_2 86% then gradually up to 98%
  - $ETCO_2$ 6.8kPa immediately on return to ventilator
  - HR 49 then gradually up to 90bpm SR
  - BP 88/42 then gradually up to 105/62

Faculty Roles

Bedside Nurse 1:

- You are a CNS
- You are looking after a 67M who is day 19 post a subarachnoid haemorrhage and coiling, who has recently returned from having a surgical tracheostomy sited
- Patient remains sedated and mechanically ventilated
- In the previous hour the patient has been fine – you do not volunteer he has just returned from his surgical tracheostomy
- In the past few minutes you have been struggling to ventilate the patient
- You are concerned he has bronchospasm as he has had asthma in the past, and ask if we could give him a nebuliser.

Bedside Nurse 2:

- You are a Staff Nurse with a few years ICU experience
- You are actively changing ventilator settings and listening to the patient's chest as the candidate enters
- You are less convinced about bronchospasm and inform your nursing colleague that he has "quiet breath sounds", when bronchospasm is raised you volunteer your auscultation findings.

HiLLO: 10