USE OF AIRWAY EXCHANGE CATHETER FOR AN AT RISK EXTUBATION...

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introduction

Airway exchange catheters (AEC) have been reported to be easy and safe to use. AEC are thin, long, rigid, hollow tubes that can be left in place as a safety device to be used as a guide for reintubation when inserted through an endotracheal tube (ETT) before its removal if extubation fails. Alternatively, AEC can be used to insufflate O_2 , monitor $ETCO_2$ or jet ventilation.

case report

- ♦ A fit and healthy 37-year-old male presented for an elective laparoscopic cholecystectomy. Airway examination raised concerns for a potential difficult airway: MP 3, TMD < 6cm, prominent incisors, presence of overbite, beard, short and thick neck. He also had a BMI 34.
- ♦ Difficult intubation and ventilation was therefore expected. Prior to induction, he was placed in a ramping position and preoxygenated with a tight fitting mask to an EtO_2 of 90%. Anaesthesia was induced and ventilation was possible only with a guedel airway and 2 person BMV technique. McGrath videolaryngoscope revealed a CL grade 3. He was successfully intubated with a size 8 ETT on the second attempt with a bougie. Upon skin closure, we decided to extubate him with an airway exchange catheter in situ, in the unforeseen event that he needs re-intubation.
- ♦ He was kept under observation in recovery with the AEC in situ till he was fully awake. It was removed prior to him going to the ward.

discussion

Tracheal extubation is a critical step during emergence from GA. The DAS extubation guidelines promote the concept of an extubation strategy, involving a stepwise approach to planning, preparation and risk stratification, aimed at clear identification and management of patients 'at risk' during extubation. In the NAP4 of the Royal College of Anaesthetists and the DAS, major airway complications occurred during emergence or in recovery, in approximately one third of the reported cases relating to anaesthesia. Extubation is an elective process, and it is important to plan and execute it well. The goal is to ensure uninterrupted O_2 delivery to the patient's lungs, avoid airway stimulation, and have a back-up plan, that allows ventilation and re-intubation with minimum difficulty and delay in case extubation fails. Patients for which re-intubation is expected to be difficult may benefit from continuous airway access and this may be achieved via an AEC. This device is inserted through the ETT before extubation and stays in situ till the patient is awake and fully conscious. Our patient tolerated the AEC comfortably without any problem and it was removed uneventfully prior to him going to the ward.

DAS Extubation Guidelines: 'At-risk' Algorithm

STEP 1 Plan extubation

PLAN

Assess airway and general risk factors

'At-risk' extubation:

- ♦ Ability to oxygenate uncertain
- ♦ Reintubation potentially difficult and/or general risk factors present

STEP 2 Prepare for extubation

PREPARE

Optimise patient and other factors

Optimise patient factors:

- ♦ Cardiovascular
- ♦ Respiratory
- ♦ Metabolic/Temperature
- ♦ Neuromuscular

Optimise other factors:

- ♦ Location
- ♦ Skilled help assistance
- ♦ Monitoring
- ♦ Equipment

Key question: is it safe to remove the tube?

STEP 3 Perform extubation

YES

**Awake
extubation**

Advanced techniques*

1. Laryngeal mask exchange
2. Remifentanyl technique
3. Airway exchange catheter

NO

**Postpone
extubation**

Tracheostomy

STEP 4 Post- extubation care

RECOVERY/HDU/ICU

- ♦ Safe transfer
- ♦ Handover/ communication
- ♦ O_2 and airway management
- ♦ Observation and monitoring
- ♦ General medical & surgical management
- ♦ Analgesia
- ♦ Staffing
- ♦ Equipment
- ♦ Documentation

*Advanced techniques: require training and experience