Sugammadex and the cannot intubate/cannot ventilate scenario in patients with predicted difficult airway (1)

Letter 1

Editor—Curtis and colleagues1 presented an interesting case in which a patient with anticipated difficult intubation was paralysed with rocuronium and developed a cannot intubate/cannot ventilate (CI/CV) situation. Sugammadex was administered, resulting in successful recovery of the patient’s motor strength, but ventilation was still impossible, presumably due to swelling of the airway and bleeding caused by repeated intubation attempts. The patient’s life was saved by timely performing of transtracheal needle oxygenation followed by an emergency tracheostomy. In the article, the authors claim they report what they believe ‘to be the first case of the use of sugammadex in a CI/CV scenario’. However, we found a case published before by Desforges and McDonnell,2 of sugammadex administration in a CI/CV scenario. In their case, a patient with a BMI of 38.5 kg m\(^{-2}\) and Mallampati class 3 undergoing sleeve gastrectomy received rocuronium to facilitate tracheal intubation which proved to be impossible. Considering that ‘no convincing capnography trace could be detected while the Sp\(_O_2\) decreased to 69%’, sugammadex was administered and successfully reversed the CI/CV condition, enabling effective spontaneous ventilation within 45 s of sugammadex administration. We consider the case report by Curtis and colleagues important for three reasons. First, we congratulate the authors for their systematic, step-by-step planning of anaesthesia and airway interventions in this case. Secondly, this case demonstrates that sugammadex will not recover effective spontaneous ventilation in all CI/CV cases. Repeated laryngoscopy and intubation attempts may cause airway oedema with obstruction and difficult ventilation even with regained motor strength. Furthermore, the patient may not be able to ventilate spontaneously due to the administration of central nervous system depressants (i.e. midazolam, fentanyl) during induction of anaesthesia. Thirdly, this case re-emphasizes the need for considering the performance of an awake intubation technique whenever facing a predicted airway management difficulty. It is our routine to opt for awake fibreoptic intubation whenever we expect a difficult-to-manage airway. The use of a short-acting neuromuscular blocking agent such as succinylcholine, hoping for a quick recovery of spontaneous ventilation in case a CI/CV will develop, seems unsafe as well. The time to functional recovery (i.e. 50% recovery of the control single twitch height of the adductor pollicis brevis muscle), a time that should permit adequate spontaneous ventilation with a patent airway, after 1 mg kg\(^{-1}\) succinylcholine was reported as 8.5 min.3 They also mention that the majority of patients will develop life-threatening desaturation before functional recovery.

Declaration of interest

None declared.

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3 Benumof JL, Dogg R, Benumof R. Critical hemoglobin desaturation will occur before return to an unparalyzed state following 1 mg/kg succinylcholine. Anesthesiology 1997; 87: 979–82

doi:10.1093/bja/aes280

Letter 2

Editor—We read with interest the case report by Curtis and colleagues1 on the use of sugammadex in a can’t intubate, can’t ventilate (CICV) scenario. They state that the case highlights that rapid reversal of neuromuscular block with sugammadex will not necessarily relieve airway obstruction caused by the instrumentation of a compromised airway and that it is not a substitute for emergency tracheal access. While we can only agree with this statement, we feel that the message of the report is misleading because we believe that they simply chose the wrong strategy for securing the patient’s airway. Applying this inappropriate strategy then led to the total mechanical obstruction of the airway, thus creating the CICV situation. Therefore, the subsequent use of sugammadex, although returning patient’s spontaneous respiration, did not restore airway patency. Is this not what one would expect in a situation like this?

It appears that they may have mistaken planning for an anticipated difficult intubation for dealing with an unanticipated difficult intubation. They wasted the advantage of anticipating difficult intubation and turned from ‘how to avoid it’ into just simply ‘how to deal with it’. Their plan was basically to follow the Difficult Airway Society (DAS) guideline for the management of an unanticipated difficult intubation.2 However, the authors of the DAS guideline explicitly state that this guideline is for a patient without upper airway...