

## Extubation of the difficult airway

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### Abstract

First some facts:

- complications associated with extubation are more common than those relating to intubation and range from mild <sup>1</sup> to devastating <sup>2,3</sup>
- extubation-related complications accounted for nearly 25% of all events reported in the 4<sup>th</sup> National Audit Project (NAP4) <sup>4</sup>
- among anesthesia cases it was virtually tied with failed intubation and aspiration <sup>4</sup>
- complications relating to extubation are more likely to result in brain injury and death <sup>2</sup>
- claims relating to extubation are more likely to result from inadequate planning or poor judgment<sup>5</sup>
- in the U.S. a comparison of medical-legal claims involving intubation have declined between the years of 1983-1992 and 1993-1999 while those relating to extubation have not <sup>2</sup>
- a recent examination of the airway literature reveals that only one article on *extubation* is published for every 36 articles on intubation <sup>3</sup>

While intubation is a skill, extubation is an art. It should always be elective, timed and planned for maximum safety. Complications associated with extubation may be non-respiratory such as hypertension, tachycardia, raised intra-ocular, intra-cranial or intra-gastric pressure all of which may be transient but in the susceptible patient can be very injurious. Respiratory complications include hypoxemia, hypoventilation, airway obstruction or the inability to clear secretions.<sup>6</sup> Proper planning can reduce (but not eliminate) the frequency of these events.<sup>7</sup> Some patients who experience one of more of these complications will not respond to conservative management and will require reintubation.

There are two separate considerations at play. First is the identification of patient at increased risk of failing extubation. Second, is identification of patients for whom emergent reintubation may be difficult. Although an easy and uneventful (elective) intubation is reassuring, this does not guarantee success in an emergent reintubation where the airway may be more difficult, the patient may be more physiologically compromised and the context (information, personnel and equipment) more stressful.

Having identified the patient at increased risk, a strategy should be communicated to the care team, optimizing extubation but preparing for management in the event that it fails. Identification of higher-risk patients will be discussed as well as strategies to manage their extubation.<sup>6</sup>

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