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Difficult airway: Challenges, phobias and options

Airway management is the most important skill that all airway managers (anaesthesiologists, intensivists, emergency physicians, resuscitation team members) require to master. Multiple definitions for difficult airway (DA) and unreliability of the predictors thereof are a source of considerable apprehension regarding the right approach to a given situation. Most definitions derived from anaesthesia literature consider factors such as the skills, experience, device, technique, number of attempts and duration, etc.^[1,2] The ultimate goal for management of DA is to prevent the patient's oxygenation or haemodynamic status from deteriorating to dangerous, life-threatening levels.^[1,3]

In an emergency, a patient's compromised physiological status often forces the clinician to manage the airway with limitation of time, resources, personnel and choice. In non-anaesthesia settings, the luxury of awakening the patient or managing the patient under regional anaesthesia is not an option. This explains the higher incidence of DA and failed intubation (FI) among other specialties and emergency anaesthesia settings.^[4,5] The continued incidence of DA and FI even in elective anaesthesia settings, albeit at much lower rate, might be due to negligence or overconfidence in few instances, but unreliability of the predictors is a major factor. Future research, therefore, should focus on establishing definitive predictors of DA considering ethnic variations in normal limits for airway parameters. Research should also focus on developing equipment and techniques that reliably overcome difficulties in airway management. This issue of the Indian Journal of Anaesthesia features articles that explore some of the predictors of difficult airway in Indian population and newer supraglottic airway devices (SGAD).^[6-9]

Although enormous data are available on DA predictors, broadly they can be categorised as clinical, radiological and invasive tests.^[1,10] It is neither always possible nor appropriate to subject every patient to radiological or invasive airway evaluation. The decision should be guided by clinical prediction of DA. Measurement of the airway dimensions using calipers and tapes is cumbersome and inconvenient to carry out routinely even in elective situations, especially when none have a high positive predictive value.^[1,10]

No single predictor or strategy can work reliably for all. However, multiple predictors of DA, when present, identify DA with more certainty.^[1,10] Therefore, barring individuals who are in cardiac arrest or are about to arrest, airway of all others should be thoroughly evaluated. After optimal evaluation, airway can be classified as 'easy', 'at risk' and 'problem' airway. Absence of predictors of DA in elective setting can be considered an 'easy' airway. Presence of one predictor or emergency setting can be considered as 'at risk' airway. Multiple predictors, previous DA, radiation to head and neck, and airway malignancy may be considered as 'problem' airway.^[1,10] However, the lack of fool-proof predictors means a rare but real possibility of DA exists even with airways assessed to be 'easy'. Therefore, irrespective of the outcome of airway evaluation, the location should have appropriate size supraglottic airway device (SGAD), bougie and equipment for front of the neck access (FONA).^[11] Every airway manager should acquire sufficient proficiency in bag mask ventilation, laryngoscopy and intubation, as also with the locally available SGAD, bougie and FONA devices. Asking for help while managing DA is a sign of maturity and wisdom and NOT weakness. Help should be sought at an early stage for better patient outcome.^[12]

Ensuring optimal preoxygenation and positioning the patient for best first attempt at airway management are vital for management of all airways and should not be neglected because the airway appears easy. ‘Problem airway’ management revolves around doing surgery under regional anaesthesia, achieving intubation or FONA with patients spontaneously ventilating whether awake or otherwise. A problem airway may be managed along the lines of ‘at risk’ airway by more experienced operators with the aid of advanced airway equipment.

The decision making is straight forward for ‘easy’ and ‘problem’ airway. It is the ‘at risk’ airway which gives rise to maximum challenges and phobias because the line of management cannot be clearly demarcated. It depends upon the nature of anticipated difficulty, expertise of the airway manager and the resources at disposal. Apprehension of ‘what if I lose the airway?’ may lead some to shy away from shouldering the responsibility (thus losing crucial learning experience) or take a very safe path of resorting to awake intubation/FONA, which may not always be in the best interest of the patient. The apprehension may also lead to administration of anaesthetic agents at suboptimal doses and/or avoidance of neuromuscular blockers. This can paradoxically increase the airway difficulty contributing to multiple attempts, airway trauma and oedema which are a recipe for disaster - development of ‘impossible to oxygenate’ scenario. Though optimal and judicious use of these drugs is useful in easing airway management in patients with normal anatomy, it may not be applicable to patients with abnormal airway anatomy.^[13]

No single airway predictor has a high positive predictive value nor will all aspects of airway management be affected by one abnormal parameter. Hence, apprehensions about losing an ‘at risk’ airway should not create a paralysis of effort in the right direction. The right direction, of course, will be an open query. The debate between factions that believe in “fortune favours the brave” versus factions who champion “fools rush in where angels fail to tread” will continue. A given scenario will rarely be approached in the same manner by two airway managers.^[14] However, as long as their approach is based on sound principles with patient safety at the core, the approach is justified.

Safe airway management plan for the ‘at risk’ airway should be built on a strong foundation of the following factors: optimal patient position and preoxygenation,

marking cricothyroid membrane or prophylactic insertion of a transtracheal catheter,^[15] early use of SGAD for difficult bag mask ventilation and bougie for difficult laryngoscopy,^[3] provision of gentle positive pressure ventilation with peak pressures <20 cm H₂O in rapid sequence inductions.^[16,17] The need to CONTINUOUSLY OXYGENATE cannot be emphasised enough.^[18]

Use of reliable confirmation techniques for tracheal intubation (e.g., waveform capnography, ultrasonography) and a diligently planned extubation strategy (with a plan for reintubation if necessary) will fill the remaining gaps in safe management of DA. Safe airway management does not end with safe extubation but should ensure patient safety in subsequent exposures by educating the patient and their caregivers by providing relevant information.

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