Reply


1Northampton, UK, 2London, UK, 3Edinburgh, UK, 4Coventry, UK, 5Dublin, Ireland, and 6Norwich, UK

*E-mail: chris.frerk@ngh.nhs.uk

Editor—We’d like to thank Drs Kennedy and Coakley for their interest in the Guidelines.1
They raise several interesting points regarding oxygenation, anaesthesia and difficult airway management. It was not part of the remit of the DAS Guidelines group to comment on individual anaesthetic techniques, unless they impacted directly on airway management. Thus we cannot recommend an inhalation technique over an i.v. one—unless for example one was planning a deliberately apnoeic anaesthetic as described in Patel’s THRIVE paper.2

The recently published Guidelines on Essential anaesthetic monitoring equipment,3 describe as essential the use of a vapour analyser whenever an inhalation anaesthetic is used. NAP5 highlighted the risk of AAGA during difficult airway management and anaesthetists should bear this in mind.

Declaration of interest

None declared.

Evidence no longer supports use of cricoid pressure

H.-J. Priebe*

Freiburg, Germany

*E-mail: Hans-Joachim.Priebe@uniklinik-freiburg.de

Editor—The authors of the Difficult Airway Society 2015 Guidelines for Management of Unanticipated Difficult Intubation in Adults are to be congratulated for their excellent work.1 My only serious concern relates to the continued recommendation for routine application of cricoid pressure (CP). This is in marked contrast to several guidelines recently published by various national and international professional societies. For example, the 2010 Scandinavian Clinical Practice Guidelines on General Anaesthesia for Emergency Situations,2 the 2015 Guideline on Airway Management released by the Board of the German Society of Anaesthesiology and Intensive Care Medicine,3 and the 2015 European Resuscitation Council Guidelines for Resuscitation4 no longer recommend routine application of CP.

The reason for such worldwide change in recommendation is obvious. CP was introduced into clinical practice in 1961, based on a small case series without exact information on the applied cricoid forces and the type of induction of anaesthesia.5 Subsequently, not a single controlled clinical study provided convincing evidence that the use of CP is associated with a reduced risk of pulmonary aspiration.6,8 At the same time, there is good evidence that nearly all aspects of airway management are adversely affected by CP.7,8

The authors of the revised Guidelines decided to not list individual techniques against their levels of evidence.1 This is both unusual for a guideline and unsatisfactory for the critical practitioner. No one would disagree with the authors’ statement, that recommendations will have to be based on expert consensus when there is insufficient scientific evidence for or against a particular technique. Noteworthy, the author of the publication which is cited in support of this approach states, “Both evidence and opinion have their place, but I believe that it should be possible to distinguish between them in the finished guideline. Experts commonly disagree, especially when the evidence is lacking, and this should also be made explicit”.9 Similarly, the Appraisal of Guidelines Research and Evaluation-II (AGREE-II) Instrument states, “An explicit link between the recommendations and the evidence on which they are based should be included in the guideline. The guideline user should be able to identify the components of the body of evidence relevant to each recommendation”.10 Although faced with the identical insufficient level of evidence regarding CP, the 2010 Scandinavian Clinical Practice Guidelines nevertheless graded the level of evidence of the recommendations.2 The fact that CP “is a standard component of a rapid sequence induction in the UK”11 cannot be a

References

doi: 10.1093/bja/aew289

Evidence no longer supports use of cricoid pressure

H.-J. Priebe*

Freiburg, Germany

*E-mail: Hans-Joachim.Priebe@uniklinik-freiburg.de

Editor—The authors of the Difficult Airway Society 2015 Guidelines for Management of Unanticipated Difficult Intubation in Adults are to be congratulated for their excellent work.1 My only serious concern relates to the continued recommendation for routine application of cricoid pressure (CP). This is in marked contrast to several guidelines recently published by various national and international professional societies. For example, the 2010 Scandinavian Clinical Practice Guidelines on General Anaesthesia for Emergency Situations,2 the 2015 Guideline on Airway Management released by the Board of the German Society of Anaesthesiology and Intensive Care Medicine,3 and the 2015 European Resuscitation Council Guidelines for Resuscitation4 no longer recommend routine application of CP.

The reason for such worldwide change in recommendation is obvious. CP was introduced into clinical practice in 1961, based on a small case series without exact information on the applied cricoid forces and the type of induction of anaesthesia.5 Subsequently, not a single controlled clinical study provided convincing evidence that the use of CP is associated with a reduced risk of pulmonary aspiration.6,8 At the same time, there is good evidence that nearly all aspects of airway management are adversely affected by CP.7,8

The authors of the revised Guidelines decided to not list individual techniques against their levels of evidence.1 This is both unusual for a guideline and unsatisfactory for the critical practitioner. No one would disagree with the authors’ statement, that recommendations will have to be based on expert consensus when there is insufficient scientific evidence for or against a particular technique. Noteworthy, the author of the publication which is cited in support of this approach states, “Both evidence and opinion have their place, but I believe that it should be possible to distinguish between them in the finished guideline. Experts commonly disagree, especially when the evidence is lacking, and this should also be made explicit”.9 Similarly, the Appraisal of Guidelines Research and Evaluation-II (AGREE-II) Instrument states, “An explicit link between the recommendations and the evidence on which they are based should be included in the guideline. The guideline user should be able to identify the components of the body of evidence relevant to each recommendation”.10 Although faced with the identical insufficient level of evidence regarding CP, the 2010 Scandinavian Clinical Practice Guidelines nevertheless graded the level of evidence of the recommendations.2 The fact that CP “is a standard component of a rapid sequence induction in the UK”11 cannot be a
rationale per se for its continued recommendation. After all, guidelines have considerable medico-legal implications.

The wording “A force of 30 N provides good airway protection, while minimizing the risk of airway obstruction” implies that limitation of CP to maximally 30 N ensures patent airways. The findings of the study referenced in support of this statement do not necessarily support this conclusion. Whereas no airway obstruction was observed in 52 patients in the absence of CP, it was observed in one (2%) during CP of 30 N, and in 29 (56%) when CP at 30 N was applied in an upward and backward direction. Similarly, cricoid cartilage occlusion and vocal cord closure were observed at a CP of 20 N in seven (23%) and 12 (40%) of 30 patients, respectively, and in 13 (43%) and 15 (50%) patients at a CP of 30 N, respectively. The supposed evidence that CP may improve the view on direct laryngoscopy if correctly applied, is based on the assessment of the laryngoscopic view under six different conditions in non-randomized order in the same patient, using highly questionable statistical analysis. More recent evidence suggests that CP may well worsen the laryngoscopic view, even if applied correctly. At the recommended cricoid forces between 10 and 30 N, the laryngoscopic view more often worsened than improved. As the cricoid cartilage is 2-3 cm caudad to the larynx, for purely anatomical reasons CP must be expected to hinder application of optimal external laryngeal pressure, thereby increasing the chance of poor laryngoscopic view.

The criteria of the Airway Device Evaluation Project Team (ADEPT) of the Difficult Airway Society consider level 3b trial evidence (i.e. single case-control or historical-control study) published in peer-reviewed scientific literature a sine qua non criterion for equipment evaluation. As has recently been pointed out, if CP were considered a new airway device, it would not be considered for further evaluation because level 3b trial evidence for its efficacy does not exist.

Finally, as the vast majority of anaesthetists are unable to reliably generate preset cricoid forces, the recommendation “Cricoid pressure should be applied with a force of 10 N when the patient is awake, increasing to 30 N as consciousness is lost” is entirely unrealistic. Even during very controlled experimental conditions (i.e., application of cricoid force on a CP training simulator by practitioners familiar with both device and simulator), during 114 attempts the target force of 30 N was achieved in only 15 (13%), and a range of forces of 25–35 N in just 35 attempts (31%). It is predictable that the results will be even less favourable in humans with highly variable neck anatomy.

In agreement with others, I strongly feel that any current guideline must be phrased in a manner that clearly reflects the lack of evidence for the effectiveness of CP in reducing the risk of pulmonary aspiration. This is certainly not the case in the current Guidelines. After all, when using CP we may well be endangering more lives by seriously interfering with optimal airway management, than we are saving lives by preventing pulmonary aspiration. “We need to prove that properly applied cricoid pressure is effective at preventing regurgitation or discard it. It is time to take stock of what we do and do it better. We owe it to our patients”.

Declaration of interest
None declared.

doi: 10.1093/bja/aew290

References
9. Smith AF. Creating guidelines and treating patients when there are no trials or systematic reviews. Eur J Anaesthesiol 2013; 30: 383–5