Airway Management- Need For Indian Guidelines and Protocols

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ABSTRACT
BACKGROUND: Maintenance of oxygenation and management of difficult airway are two most important tasks for the anesthesiologist. Problems related to difficult airway are known to be the primary cause of life threatening anesthesia related morbidity and mortality. After development of difficult airway management guidelines by various anesthesia societies across the world, especially in developed countries, airway management practice has improved with significant impact on patient outcome and survival. The difficult airway may be as prevalent in our diverse country, but we do not have data on its incidence as well its impact. This lack of data combined with the unavailability of various newer devices due to their economical consideration, leaves us far behind other part of world in airway practice. We also do not have a standardized teaching program which includes all essential steps of difficult airway management algorithm. We need to develop our own difficult airway management guideline. To develop our own guideline we need work with multi prong strategy. First, we need to know the current airway practice, including the availability and expertise of various airway equipment and techniques via survey. Second, we should also increase the awareness and technical skill to use various airway devices like Supraglottic airway, flexible fiberoptic guided intubation, videolaryngoscopy and emergency surgical airway techniques by repetitive workshop, conference with hands on training and live demonstrations. Airway society should also take initiative to develop common basic airway curriculum , structured training course for teaching various advanced airway techniques. They also should encourage various enthusiastic and well equipped centers to come forward and take part in the teaching of advanced airway management techniques. Airway society should also build the team of anesthesiologist from diver’s area of practice to develop consensus difficult airway management guidelines for India and third world countries.

Key words: difficult airway, Indian guidelines, aidsa

INTRODUCTION
It is widely recognized that the two most important tasks for the anesthetist are the management of a difficult airway and the maintenance of oxygenation. Problems related to difficult airway are known to be the primary cause of life-threatening anesthesia related morbidity and mortality¹. The need for definitive guidelines, as developed for the ACLS and ATLS, was clearly felt in early 90's. This led to publication of first ever guideline by the American society of anesthesiologist-ASA guidelines for difficult airway management in 1993². Before the guidelines were made available the response during airway crisis was dependent on the individual skill and experience from previous events. Implementation of these guidelines has really improved the airway management practice with significant effect on patient outcome and survival.¹⁰,¹¹ The main problem of these guidelines is lack of evidence to support the majority of clinical decisions and behaviors. They do not represent the standard of care and universally accepted algorithm. Following the 1993 ASA guidelines², 1996 the French group published their guidelines, and in 1998 the Canadian³ as well as Italian guideline were published. DAS UK ⁹ and Germany published in 2004⁷.

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This guideline was updated by ASA in 2003, 2013, French in 2006, Italian in 2005. All these documents are based on the same published literature with the main differences being guidelines language, as well as management choices at various stages. India has not made attempt to develop our own guidelines. The present review will focus on comparison among the various published guidelines and challenges as well as possible roadmap for development of India specific guidelines development on management of difficult airway.

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DISCUSSION

Table 1: Laryngoscopic attempt difference among the various guidelines

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<th>ASA® 2003</th>
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<td>Laryngoscopic Attempts</td>
<td>&gt; 4</td>
<td>&gt; 4, 5th experience anesthetist arrives</td>
<td>Repeated if CL® &lt; 4 (&gt;2 times), only once if CL® 4 &amp; twice if obstetrics</td>
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<td></td>
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<td>&quot;Repeated &quot; if CL® &lt; 4 (&gt; 4), once if CL® 3b or 4</td>
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# CL- Cormac Lehane View, ®-DAS UK- Difficult airway society UK,* ASA - American Society of Anesthesiology

Prediction of difficult airway is also dealt differently among the various guidelines - as the ASA has only mentioned the non reassuring findings. There is no cut off guideline in DAS UK. DAS UK has used a serial approach in management where response depends upon the pure consequentiality of events, while Italian & French guidelines clearly mention the prediction of difficult airway and defines the different strategies for such patients.

All guidelines clearly define the need of a dedicated airway cart, but differs in what constitutes the dedicated airway cart and its location. While ASA guidelines suggest a large and expensive cart, including Fiberoptic Bronchoscope (FOB) and almost all available airway devices without any mention of the location of such a cart. On the other hand Italian, French & Canadian guidelines suggest a cart with a few familiar and practiced devices, but not mandatory devices (including alternative to a face mask and a tracheal access device) and consider that the FOB should be available on request.

There are important differences between the availability and use of various supraglottic airway (SGA). ASA guidelines allow all SGA 's to be located on the airway cart, while French, UK and German guidelines are strongly oriented towards the use of Laryngeal Mask Airway (LMA) and Intubating LMA (ILMA) for ventilation as well as intubation with or without Fiberoptic Bronchoscope (FOB). The Italian guidelines give you the freedom to use LMA or any other commercially available device of your choice.

All guidelines clearly emphasize the role of Fiberoptic Bronchoscope (FOB) in failed intubation. While ASA suggest the use of the fiberoptic intubation (FOI) as a second line of management in case of failed intubation, as also the UK and German guidelines, while Italian and
French guidelines discourage its use in emergencies. Canadian guidelines suggest its use in the emergency, only if an expert is available.

There is a difference in "Can't intubate Can't ventilate " scenario management where ASA and UK gives preference to the surgical cricothyroidotomy, while the Italian, German and French guidelines suggest Seldinger-guided techniques. Emergency tracheotomy is only considered by the ASA but all others have considered it risky, inappropriate and time consuming.

When we consider various European guidelines, considering the use of the LMA and ILMA as dedicated airway devices for ventilation and intubation, their current practice reflects their choice of particular devices. A recently published national audit report on major airway complication in UK -NAP4 , suggests supraglottic airway devices were used in nearly 56% of all general anesthesia, & majority among them was classic LMA. This is reflected in the choice of LMA as their second line of management if the initial attempt at intubation fails.

India is a diverse country with wide diversity even among the practice of anesthesia. The difficult airway may be as prevalent among us as in the other parts of the world, though, we do not have any local data on its incidence and impact. When we search for airway practice related reviews, we hardly find any data except one by Dr Ramkumar- how current are we? This lack of data, combined with diverse practice, and unavailability of various newer devices due to their economical impact leaves us far behind other part of the world in airway practice. Diversity of practice and lack of data raises many doubts regarding management protocol for difficult airway in India. Can we accept the established guidelines of other countries?

Systemic reviews of strategies for changing professional behavior show that, relatively passive methods of developing and implementing guidelines rarely leads to effective changes. This observation raises the concern that in order to maximize the likelihood of a clinical guideline being used we need effective implementation strategies. For effective implementation, we need to develop guidelines which are applicable and acceptable to large sections (teaching institutes, corporate hospitals, private practitioner in larger cities or smaller towns) of anesthesiologists in India. We also need to consider the legal and economical impact while developing our own or accepting other guideline.

Supra Glottic Airway (SGA) usage:

- Is use of supra glottic devices, widespread among Indian anesthesiologist?

Sales data of the LMA company suggest, only 6000 disposable/classic LMAs are used annually, while in UK that is probably requirements of two days. Considering the nearly same number of anesthesiologist, is our majority of anesthesiologist confident about using LMA in case of difficulty?

- Considering the less frequent usage & familiarity with various supraglottic airway (SGA), can we accept a guideline which has SGA as second line of management after initial intubation failure, as accepted in almost all guidelines?

Intubation with flexible fiberoptic bronchoscope (FOB):

- Are all anesthesia departments across India equipped with FOB?
- In case if available, expertise to intubate with fiberoptic bronchoscope available round the clock?
- Have we got any established method of teaching, the art of intubation with fiberoptic bronchoscope?
- Can we suggest the mandatory availability of FOB where a large section of small hospitals cannot afford it?

Emergency Surgical Airway:

Similar types of questions can be raised for emergency surgical airway in case of
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can’t intubate can’t ventilate (CICV) situation.

➢ Is surgical airway part of standard teaching program in anesthesia department in our country?
➢ Can we suggest that all anesthesiologists should know how to establish a surgical airway, when it may not be part of anesthesia curriculum?
➢ Use of Video Laryngoscope for intubation:

Video laryngoscopy is part of routine practice in developed countries and last updated report of ASA in 2013\(^1\) has included same as routine, first line of management for difficult airway.

➢ Can we consider the same, where the majority of anesthesia departments in our country does not have the video Laryngoscope equipment or expertise to use them?

In spite of all these concerns and limitation that we have, we still need to develop the India specific guidelines, because these guidelines across the world has directed health community's attention towards the airway problem. It has encouraged the practitioners to call for help when crisis occurs. It has encouraged various departments and individual to develop difficult airway cart, and improved focus on various surgical airway techniques. It has improved the patient outcome in terms of the airway catastrophe\(^9,10\).

CONCLUSION
To develop a guideline which applies to a large section of Indian anesthesiologist, we need to have three prong strategy-

First, we should exactly know what is our current practice of airway management, via survey, which should include large numbers of anesthesiologist from a diverse area and practice. We also should inquire about availability, knowledge & preference for various devices like Supraglottic airway, flexible FOB, Videolaryngoscope.

Second, we should increase the awareness and usage of supraglottic airway (SGA), fiberoptic intubation (FOI), Videolaryngoscopy and surgical airway with the help of repetitive workshop, conference with hands on training &/or live demonstration of various airway devices. AIDiAA (All India Difficult Airway Association) can take up the role of developing common airway curriculum for various academic institutions. We should develop a structured training course\(^13,16\) and workshop module which would facilitate a focused teaching and awareness regarding airway problems and its management.

Third, we should build a team of anesthesiologist from different specialty practice, geographical areas, and at different stage of practice (e.g. Teaching institutes, corporate hospitals, private practitioners, critical care specialists, metro city, small town hospitals, senior consultant, junior consultant, etc.) to develop a consensus guidelines on difficult airway management.

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Conflicts of interest-Non declared

Manuscript has been read and approved by all the authors. The requirements for authorship have been met and each author believes that the manuscript represents honest work.

Table 2: laryngoscopic attempt difference among the various guidelines

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