



# Australian Society of Dental Anesthesiology

November 2012

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## Presidents Message

ASDA President's report 2012

I believe that 2012 will be seen in the years ahead as a watershed year for the Society. As 2010 and 11 were our nadir as our numbers had dropped and we faced the challenges of the national dental board regulations, the crippling financial costs of IFDAS2009, and our conference had become stale which did not reflect the community needs.

I truly believe that we have turned the corner as witnessed by Annual Scientific Meeting today. To achieve this turn around a number of initiatives had been undertaken.

Firstly at the 2011 AGM our executive was expanded to include assistant positions. There is no doubt in my mind that the new blood injected a new sense of enthusiasm into council and with it came new ideas. I would like to thank my fellow executive members for their support as all have really gone that extra mile to assist. While all have contributed I would like to acknowledge Rob Turnbull and Angelo Preketes for their efforts in organising the ASM.... well done! Rob has learnt a lot this year, stood on a few toes along the way and found out how easy it is to upset a certain health professionals.

On the executive, this year has seen the resignation of Assoc Prof Doug Stewart as the executive secretary; he still has a role in an ex officio capacity as the society's educational officer. However his active role has taken a step back but we hope that this will be a pause rather than a cessation. It is appropriate, I feel, at this stage to acknowledge his contribution to the Society and council as secretary over the past 17 years. Doug came to the society as a breath of fresh air and helped the Society in improving the Grad Diploma and establishing an enduring relationship with anaesthetic department as Westmead. Many times Doug has represented the Society at meetings, National and International forums, Dental Boards, Court cases and was THE face of the Society. We all are acutely aware that in recent times that Doug has had to deal with a number of crises in his personal and professional life and that it is probably appropriate, at this time, that he takes

## Links

**The American Dental Society of Anesthesiology**

**Links**

<http://www.adsahome.org>

**The Society for the Advancement of Anesthesia in Dentistry**

<http://www.asdahq.org>

**The American Society of Dental Anesthesiologists**

<http://www.asdahq.org>

some time out. In recognition of his outstanding contribution to the Society, the council has commissioned a certificate of appreciation to Doug on behalf of the Society. Unfortunately, Doug isn't here to accept as he is at an International meeting in China.

Our relationship with the Dental Board of Australia continues, I believe, to improve. One of the unintended consequences of the DBA regulations has been the decrease in the number of dentists performing sedation. The Board's primary role is to ensure patient safety and sometimes that has meant that the sledge hammer has been used rather than a tweak with a spanner. Having said that, the Society is recognised by the Board and the ADA as the authoritative Society when it comes to sedation through our an active participant in responding to the Board's discussion papers on sedation. At this stage, I wish to apologise, on behalf of the President and the executive officer of the DBA as they were hoping to attend our meeting. The ADA, and in particular Dr Rick Olive, have been extremely helpful over the last couple of years and the amount of work they have done in assisting is way out of proportion to our membership base. Therefore, in the presence of Dr Carmelo Banano, I would like to formally thank the ADA for their support.

Other initiatives the society has taken has been the running of 3 courses in conjunction with the ADAQ on Relative analgesia, the RA course at Westmead is now under our umbrella and we have a course here this weekend and we have actively sought to be seen in the areas of sedation, hence the oral sedation seminar.

One of the consequences of the RA courses has meant that we have 60 new associate members in the society which is particularly important given the fact that the number of new graduates in conscious sedation has been fewer than the number of retiring members.

Our Website has a new look and is a vast improvement on the old one and we are looking at new ways to value add to the site for our member. I like to thank Matthew Hunter and Jeff Field for their efforts

Our Financial situation continues to improve and I won't steal our treasurer's thunder on this but suffice to say that 2009 is now a distant yet painful memory.

Our future directions in 2013 will be to run more courses in RA and look to expand to other states [Michael Walker in doing a sterling job in this regard] and to improve the medical emergencies in the dental surgery course by moving from the hotel setting to a purpose built simulation

centre. The society has already established a relationship with the UQ facility at Greenslopes and hopes to inspect the Griffith University facility in the near future. This will mean that we may have to base our meeting at the Gold Coast for the foreseeable future as Noosa is just too far away. We will continue to represent our membership with the Dental Board and we are already planning our submission to the review in sedation regulations in 2013.

Finally I wish to take all members of council for their support and enthusiasm over 2011/12 year and I look forward to a new and invigorated Society that will bring recognition and benefits to its membership so that they can continue to provide an important service to Australian community.

Greg Mahoney President of ASDA

### **RA course 2013**

Dates:

Friday, 18 January (NSW)

Friday, 22 March (QLD)

Friday, 12 July (NSW)

Friday, 19 July (QLD)

Friday, 8 November (QLD)

Friday, 29 November (NSW)

Use the link below for booking. See the website for details.

<http://wmcps29nov13.eventbrite.com.au>

CPD Value: 6 hours

Courses compliant with section 4 of DBA

## Belisario Award

Congratulations to this years Belisario Award winner Dr. Michael Walker.

Dr. Walker started his career in sedation in 1984 after obtaining his sedation certificate through ASAAD. He also started his affiliation with ASDA that same year.

He was mentored in the early years by two very experienced clinicians, Dr. Tony Cruikshank and Dr. Shirley Snyman both of whom were providing sedation on a daily basis. As a result Dr. Walker gained valuable experience in a supervised environment.

During this time Dr. Walker became known in dental sedation circles and caught the eye of Dr. Bill Winspear, who at that time held a number of university and dental hospital positions. Dr. Winspear was instrumental in introducing Dr. Walker to Dr. Barry Turner, who at the time ran both a sedation and general anesthesia practice, in addition to teaching in ASAAD sedation programmes. This provided Dr. Walker the opportunity to gain advanced experience in both dental sedation from Dr. Turner and general anaesthesia from Dr. Turner's visiting anaesthetist. In addition he gained invaluable experience in treating patients under both sedation and general anaesthesia.

When Dr. Turner took the opportunity to join his long-time friend Dr. John Murray in a IV practice in Bondi Junction, Dr. Walker took over Dr. Turners practice, where he continues to practice very successfully to this day.

Dr Walker has made a large and ongoing contribution to the practice of dental sedation in Australia.

In 1990 Dr. Walker become a Federal council member of ASDA and continued on in his role in the NSW state branch.

From 1990 to 1999 Dr Walker was President of the NSW state Branch of ASDA. He remained in that position until the state branches were consolidated in to the Federal branch of ASDA.

During the 90's Dr Walker was involved with the teaching of relative analgesia courses for ASDA on the Gold Coast and in Sydney.

From 1991 to 1994 Dr Walker assisted the Dental Board of NSW in accrediting dentists to provide intravenous sedation. In this capacity he spent hundreds of hours both coordinating and travelling to perform the

accreditation of new dentist wanting Dental Board approval to provide intravenous sedation.

From 1996 to 2000 Dr Walker was the President of the Federal Branch of ASDA and from 2000 to 2002 continued as the Vice-President.

Dr. Walker continues to teach and is an examiner in the GRADUATE DIPLOMA IN CLINICAL DENTISTRY (CONSCIOUS SEDATION AND PAIN CONTROL) at Westmead Hospital in Sydney. This at present is the only program of its kind in Australia.

After his term in 2002, he stepped down from ASDA council to devote more time to his personal life. He was married in 2004 to his beautiful wife Natchaya. He and Natchaya have two children, Jack who was born in 2006 and Sabrina who was born in 2008.

Dr. Walker joins a distinguished group of dental and medical professionals who have preceded him as Belisario Award winners.

These include:

Professor Douglas Stewart, 2009, for his tireless efforts in support of dental sedation in Australia. Dr. Stewart not only founded and has been the head of the only university based dental sedation program in Australia, but has been instrumental throughout his tenure in ensuring the rights of dentists to provide sedation.

Dr Ken Harrison, 2005 for his tireless support and championing of the cause of the use of IV sedation by dentists, and as an enthusiastic educator on our training courses.

Dr. Peter Kleinberg 2002 for his ongoing support of the dental sedation program at Westmead Hospital and his ongoing and continued teaching within the Westmead program

Dr Angus Kingon, in 1999. Angus joined Dr Geoff Stacey and Professor Iven Klineberg in 1991 and helped set up what is now the very well established Grad Dip Clin Dent (Conscious sedation and pain control) at the university of Sydney. Angus was involved in the evolution and structuring of this program from 1991 to the end of the academic year of 1994.

Dr. Peter Magnus and Dr George Gow-Gates in 1996 were co-recipients. Dr George Gow-Gates received the award for his work on regional block anaesthesia and being an innovator of the technique which bears his name. Dr Peter Magnus received the award for being a long-time educator in sedation and founding member of ASAASD.

James Auld in 1993. He was given the awarded based on his long term service to ASDA. He has been a member since 1972, Federal Councillor since 1985, President in 1987/8, Secretary 1989/93, Newsletter Editor 1991-5, and Treasurer since 1993. He also has a career long commitment to teaching with an extensive background in hypnosis, having been a member of ASH since 1974. He has taught R.A., hypnosis and psychology for dentists at ASDA courses, Sydney University Diploma Course, and has spoken on these subjects at numerous ADA congresses and at the international dental anaesthesia conferences.

Graham Southwell in 1990 for his work for the Society on Council and his teaching of the combined use of methohexitone and diazepam, but particularly for his training in the use of R.A.

Dr Jim Grainger in 1987 for his academic and historical contribution and clinical advancement of IV sedation and in being the first Australian President of IFDAS.

David McDonald in 1984 for his tireless work as Secretary of the Society and his academic contribution, especially the study of IV Brietal.

Dr Tom Scahill in 1981 for his work for the Society on Council, and in particular as Editor, and his teaching of techniques especially R.A.

Dr Noel Hodge in 1978 for his work in launching ASAASD as its first President and his great influence in clinical practice.

Dr Charles Sara in 1975 for his influence in the Anaesthetic teaching at Sydney University

Stanley Lithgow Drummond-Jackson in 1972 received the first Belisario award in recognition of the considerable mentor influence that he had on Australian dentists in the UK, and

consequently the profound spin-off on Australian Dental Practice. The Award was made in the presence of John Belisario's grandson - at that time a practising dermatologist in Macquarie Street, Sydney.

## Annual Scientific Meeting Report

As described in the President's report, the Annual Scientific Meeting held on the Gold coast over the weekend 09-11 November 2012 was a great success. With over 70 attendees over the weekend participating in Relative Analgesia, Medical Emergencies and the Sedated Dental patient courses, the Oral Sedation Workshop and Annual Scientific Meeting and AGMs.

The relationship with Air Liquide and Leardal was enhanced with their great support over the weekend. In particular, having the Simman 3G with its unparalleled fidelity in a simulation mannequin added great reality to the simulation training.

For 2013, we are planning an exciting program. The dates for next year are the weekend 10 - 13 October, 2013 and will be held between the University of Queensland Clinical Skills Center in Greenslopes and the Gold Coast.

As an exciting development, we are planning a clinical skills training day for Thursday 10 Oct at the Clinical Skills Center of the University of Queensland. We hope to cater for up to 50 participants and will review and practice many of the skills required to prepare for medical emergencies. We are developing a comprehensive program including CPR, AED use, airways management including LMA and ETT placement, drug protocols, fluids protocols, ECG interpretation and will involve experienced medical trainers and the best training aids from Leardal.

This will be the ideal preparation for the simulation based medical emergencies training, also to be held in the same center which is fitted with 2 SIMMAN 3Gs.

Saturday will again be the Annual Scientific Meeting, which we will program using this years participant feedback and suggestions received from members. Please send suggestions for topics to [courses@asda.net.au](mailto:courses@asda.net.au).

We will advise when the conference bookings are open and all look forward to seeing you in Queensland next year.

Rob

Dr Robert Turnbull

BDS(Hons)Syd, Grad.Dip.Clin.Dent.(Conscious Sedation&Pain Control)Syd  
Conference Coordinator



## **Clarification about Conscious Sedation Endorsement Requirements**

There has been some misinterpretation and confusion about the Dental Board Of Australia requirements for maintaining the Conscious Sedation endorsement.

The requirements are two fold.

1. Firstly everyone must attend ( on a yearly basis) a medical emergencies simulation course equivalent to that given by CREST.

2. The second component is the CPD component whereby endorsed sedationists are required to have some other form of yearly continuing education in the field of sedation/anaesthesia.

The second requirement can be fulfilled by attendance at the yearly ASDA conference or any other anaesthesia/sedation conferences.

Some have argued that the CREST course satisfies both requirements, but this is incorrect. If there is a complaint about your practice in the conscious sedation side, then any scrutiny will involve consideration about whether you have fulfilled the CPD requirement.

Carmelo Bonanno

## **From The Editors Desk**

Continuing Education Supplement

This CE supplement will continue with the fundamentals of

airway management. I would like to Again thank Dr. Jafar Faraj

( Senior Consultant Hamad Medical Corporation Qatar) for

allowing me to use material from his Fundamentals of Airway Management course.

This will be the last CE supplement in the newsletter as council looks at transitioning to website based continuing education package that will provide a more structured and focused continuing education package. This will provide verifiable CE hours/points.



## The Questions

- 1) What are the 2 most commonly used airway adjuncts.
- 2) Which manoeuvres can be used to open and maintain an airway.
- 3) How to assess how effective a particular manoeuvres is.
- 4) Define what is adequate ventilation in the case of both respiratory depression and respiratory arrest.
- 5) What are the advanced airway adjuncts appropriate to dental sedation practice in Australia

# The Answers

## 1) AIRWAY ADJUNCTS

The most common issue surrounding airway management is the obstruction by the tongue of the pharynx while the patient is lying supine. Tongue obstructions can often be managed by the head-tilt chin-lift method, but once the maneuver has been released the tongue may again fall back against the pharynx occluding the airway again. Typically there have to be two adjuncts at the disposal of resuscitator to help get the airway patent.

The Oropharyngeal Airway, (OPA), Oral Airway is a plastic device that is rigid with a flange on one end to rest on the teeth. The other end is curved with a hole down through the center for air to pass. The curved end is inserted into the oropharynx and helps displace the tongue. There are several standard sizes of OPA's to choose from that range from infant up to adult sizes. It is imperative that when selecting the appropriate sized airway that you measure from the corner of the patient's mouth to the angle of the mandible or from the corner of the mouth to the bottom of the earlobe. Remember that this adjunct is used only on a patient that does not have an intact gag reflex. Otherwise, the patient could end up vomiting and further compromising his/her airway.

Once the appropriately sized adjunct has been selected open the patient's mouth with the thumb and fore finger used in reverse scissor motion. Insert the airway so that the curved portion is toward the hard palate. Once the adjunct is inserted, gently rotate the adjunct 180 degrees so that the curve of the airway is parallel to the patient's tongue and that the flange rests on the patient's teeth. While the airway is being rotated, make sure that the tongue is not being pushed posteriorly.

An alternative way of inserting an oral airway is by using a tongue depressor. To use this method, press the tongue downward and with the oral airway curve parallel with the tongue, gently insert the device into the patient's mouth until the flange rests on the teeth. This way is preferred in pediatric and infant patients.

A Nasopharyngeal Airway, (NPA), Nasal Airway is an alternative airway adjunct that may be used when patient's have an intact gag reflex. An NPA is less likely to stimulate vomiting than an oral airway and may also be used on patients who are responsive, but still need assistance in keeping the tongue from obstructing the airway.

The nasal airway is a pliable tube that is inserted through the nose that when fully inserted, the tip is located in the posterior pharynx. To appropriately select the size, measure from the tip of the nose to the tip of the patient's ear. One thing to keep in mind is the diameter of the airway in relation to the patient's nostril.

Once the appropriately sized device has been chosen, lubricate the airway with a water soluble lubricant. The airway will then be inserted into the nostril with the bevel pointed toward the septum. Gently insert the device until the flange is resting atop the patient's nostril. If the airway does not insert fully into the nostril then attempt the same procedure in the opposite nostril.

Use of Nasopharyngeal airway or Nasogastric tube is contraindicated in basal skull fractures and those with severe facial trauma as they may enter the skull and exacerbate the injury to the brain. Signs to look for are Battle's sign and Raccoon eyes as they may be indicative of these types of fractures. Remember that these signs are generally late signs. A person may have a basal fracture and have no visible sign during assessment. Use of an oral airway is preferred in these cases, but as always may illicit a gag reflex.

## **2) SIMPLE MANEUVERS**

Several maneuvers, easily learned and performed in most patients, are used to improve the patency of the airway. The first four—head tilt, chin lift, jaw thrust, and head/shoulder position

### **☒ Head tilt**

Among the simplest and most effective maneuvers to restore an adequate airway patency is to tilt or extend the head and neck. Care should be taken in movement of the head and neck so as not to overextend the head, potentially causing obstruction of the vertebral vessels in older patients. In patients with trauma, one must be cautious not to extend the neck unnecessarily. Some patients may be prone to atlanto-occipital or atlanto-axial laxity (trisomy 21), and this maneuver should be used cautiously. The head is tilted backward by placing one's hand on the patient's forehead, with the other hand behind the neck.

### **☒ Chin lift**

This maneuver commonly is performed in conjunction with the head tilt. That is, rather than placing one hand behind the neck, one pulls the chin up toward the nose. This maneuver commonly closes the mouth and may create an obstruction for air passing through the mouth. An open nasal passage may be necessary if this technique is to be most effective.

### **☒ Jaw thrust**

A third maneuver that can be added to the previous two is the jaw thrust. In this technique, one advances the mandible under the maxilla to cause an underbite protrusion. This protrusion is possible because the mandible can be subluxed at the mandibular joint with the skull. The technique also can be managed using the fourth and fifth fingers (behind the angle of the jaw), advancing the jaw forward while holding the mouth slightly open with the thumbs on the front of the chin. This technique also helps to

hold the tongue away from the palate. These three techniques can be used together as the “triple airway maneuver” in synergy.

#### ☒ Head-and-shoulder position

Of utmost importance in establishing an effective airway for the patient who is breathing spontaneously or ventilated with a facemask is the anterior-posterior relationship of the head to the shoulders. A common mistake is to assume the presumed best position for laryngoscopy as the best for mask ventilation. This assumption is not so. In fact, significant flexion of the neck, despite extension of the head on the neck, can leave the patient with an obstructed airway. It usually is better to elevate the shoulders, using a rolled towel or blanket, leaving the neck in a neutral or slightly extended position, and to allow the head to extend off the neck. In large adults, it also may be necessary to place a head ring under the occiput for stability

#### ☒ Head turn

A common difficulty in patients who have significant amounts of redundant tissue in the pharynx and hypopharynx is obstruction. Simply turning the head to one side can increase, yet again, the stretch on these tissues, perhaps smoothing them out and improving airflow. Continuous positive airway pressure

#### ☒ Applying pressure to the airways

Once an effective mask fit is obtained, the addition of 5 to 10 cm H<sub>2</sub>O CPAP may help to improve airflow by expanding the hypopharyngeal structures a bit more. Caution should be taken not to overdo this application because with more than approximately 20 cm H<sub>2</sub>O, the risk of inflation of the stomach increases with little probable benefit for airway management. Here it is helpful to maintain the pressure throughout the ventilatory cycle (that is, keep the reservoir bag continuously inflated to approximately 8 cm H<sub>2</sub>O with one's hand); once the airway is established, it is maintained more easily with continuous pressure.

#### ☒ Two-handed mask ventilation

When supporting a difficult airway using a facemask, creating an effective seal can be challenging using only one hand (with the other hand on the bag to help ventilate). Simply using high fresh-gas flows, closing off the pop-off valve a bit more, and using two hands on the mask (and even one's own chin) can improve the effectiveness of the seal; one can release the seal to allow exhalation when necessary.

When difficulty in managing the airway is recognized and the preceding techniques fail to resolve the issue fast enough, additional assistance must be sought. Applying two hands to the mask while another clinician squeezes the bag is most often helpful. The clinician managing the facemask may assist from above (standing above the patient's head) or below (standing alongside the patient; that is, face to face).

### 3)Recognizing the Effect of Maneuvers

Clearly, the effective management of facemask ventilation requires continuous assessment of airflow. Attention to the details of the effects of good air movement allows the clinician to make minor modifications in technique to optimize management.

- 1  Thoraco-abdominal asynchrony  
Presence of this sign indicates failure to open the airway effectively, either because of intrinsic obstruction (tongue, epiglottis) or foreign body.
- 2  Mask fogging

A simple but effective means to observe movement of air during ventilation is to monitor the clarity of the mask above the patient's mouth and nose. A small amount of condensation (or fogging) occurs with good airflow in most people.

#### Use of precordial stethoscope

One of the basic and extremely valuable tools of the anesthetist is the simple precordial stethoscope. Placement location (midsternal, sternal notch, paralaryngeal, or axillary) are up to the clinician, in accordance with the condition and procedure.

### 4)DETERMINING ADEQUATE AND INADEQUATE ARTIFICIAL VENTILATIONS

The artificial ventilation rate must be within the ranges that are in accordance with the newest AHA Guidelines. For adults with or without a simple oral or nasal airway in place, a rate of 10 to 12 assisted breaths per minute is recommended. Children in need of artificial ventilations should be given between 12-20 breaths per minute according to recent AHA guideline changes. A new wider range of pediatric assisted ventilations was adopted in order to allow the resuscitator more freedom to tailor the assisted ventilations to the patient and situation. If your patient has had an advanced airway such as an ET tube, LMA or LTA used to secure the airway, the assisted ventilatory rate is reduced to 8-10 breaths per minute according to American Heart Association (AHA) guidelines. This is for adults and pediatric patients. Remember these ventilatory rates are for patients in respiratory distress only. If the patient does not have a pulse then CPR is required and you would deliver approximately 5-6 breaths per minute while allowing for approximately 100 chest compressions over that same minute. These numbers follow the current AHA ratio of 30 compressions to 2 breaths.

Inadequate assisted ventilations can be deadly and are often detectable by the absence of proper chest rise and fall. If the chest is not rising, air is

not likely reaching the alveoli and the body is not being properly oxygenated. Failure of chest rise can be attributed to several things, foremost is the blocked airway. When a patient is unconscious, the tongue often falls back against the pharynx blocking the trachea and inhibiting air from passing into the lungs. In fact, the tongue is the most common cause of obstruction in the pediatric population, anaphylaxis, and those adults with larger tongues, including those of African heritage. Use of a simple oral or nasal airway is useful in displacing the tongue and maintaining the open airway during assisted ventilations.

If the rate at which the patient is being ventilated falls outside of acceptable ranges stated above, the assisted ventilations are considered inadequate. Too many assisted breaths can increase the chances of gastric distention and cause vomitus which will further compromise the patient's airway. Not delivering enough ventilations can result in hypoxia and eventual tissue death if the problem is not corrected.

Inadequate assisted ventilations can also be the result of too large of a breath being delivered. Studies have shown that delivery of a breath that is too large can increase the pressure in the thoracic cavity. This increased thoracic pressure then puts pressure on the heart which decreases the venous return to the myocardium.

## **5) Airway Adjuncts Appropriate To Dental Sedation In Australia**

### **Laryngeal Mask Airway**

#### **Description:**

The Laryngeal Mask Airway is an alternative airway device used for anesthesia and airway support. It consists of an inflatable silicone mask and rubber connecting tube. It is inserted blindly into the pharynx, forming a low-pressure seal around the laryngeal inlet and permitting gentle positive pressure ventilation. All parts are latex-free. (fig. 15)

#### **Indications:**

The Laryngeal Mask Airway is an appropriate airway choice when mask ventilation can be used but endotracheal intubation is not necessary.

#### **Contraindications:**

Non-fasted patients

Morbidly obese patients

Obstructive or abnormal lesions of the oropharynx

### Advantages:

Allows rapid access

Does not require laryngoscope

Relaxants not needed

Provides airway for spontaneous or controlled ventilation Tolerated at lighter anesthetic planes

### Disadvantages:

Does not fully protect against aspiration in the non-fasted patient

Standard (Classic) LMA does not allow high positive pressure ventilation

### Special Features:

Used as a rescue airway and fiberoptic conduit when intubation is difficult, hazardous or unsuccessful with a special role in "Cannot ventilate Cannot Intubate" scenario.

It can be used for bronchoscopy in the awake or asleep patient

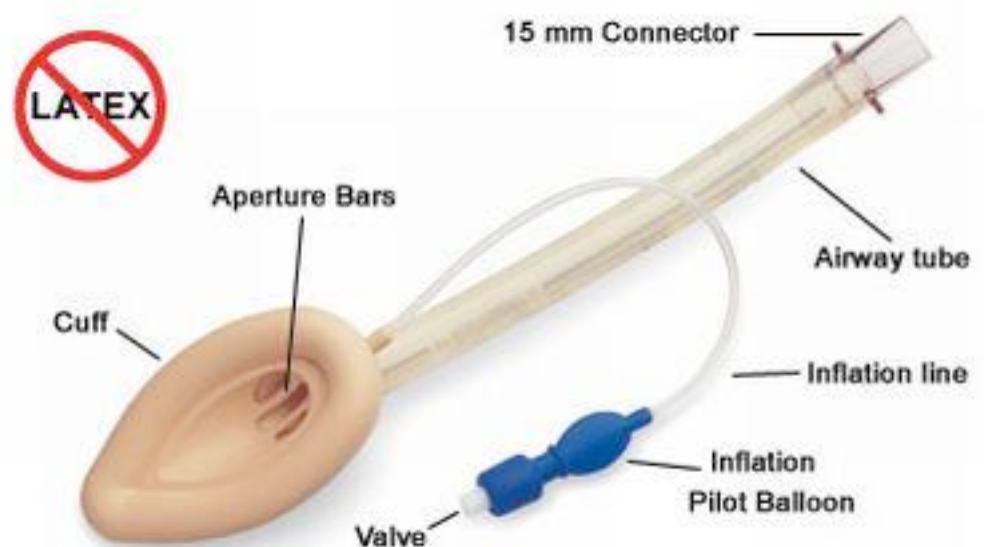
### Tips for Success:

Begin with ASA I & II patients

Learn and use standard insertion technique

Use appropriate size and do NOT over-inflate Maintain adequate anesthetic depth

Remove when the patient opens mouth to command





## AIRTRAQ Laryngoscope Introduction

The AIRTRAQ single-use optical laryngoscope is designed to provide a view of the glottic opening without aligning the oral, pharyngeal, and laryngeal axes. Compared to conventional direct laryngoscopy, rigid video laryngoscopes require minimal head manipulation and positioning. The AIRTRAQ requires a minimal mouth opening of 18 mm for the regular size and 16 mm for the small size AIRTRAQ.(fig. 16)

The blade of the AIRTRAQ has one channel acting as the housing for the placement and insertion of the endotracheal tube (ETT) while another channel terminates in a distal lens. A battery operated low temperature LED light at the tip of the blade provides illumination for up to 90 minutes. The image is transmitted to a proximal viewfinder through a combination of lenses and a prism, rather than fiber optics, allowing visualization of the glottis and surrounding structures, and the tip of the tracheal tube. An anti-fogging system for the optics is activated by turning on the LED light. For the anti-fogging system to be effective, the LED must be turned on at least 30 seconds before use.

The AIRTRAQ works with any style endotracheal tube: standard, reinforced (wired) and pre-shaped (RAE). Endotracheal tubes of inner diameter (ID) sizes 7.0 mm through 8.5 mm can be used with the regular size and 6.0 to 7.5 mm for the small size AIRTRAQ (16 mm minimum mouth opening).

These features likely make the AIRTRAQ a good option for scenarios where conventional direct laryngoscopy might prove to be difficult or dangerous: patients with anterior larynx, unstable cervical spine fracture, patients in the sitting position, upper body burns, trauma, TMJ immobility, and micrognathia.

### Preparation

Ideally, the AIRTRAQ is prepared before use: the LED light turned on for 30 s or longer, the proper sized ETT has the cuff deflated and is lubricated and loaded into the channel. The view through the eye-piece or displayed from the camera is checked to assure the view is not obstructed by the ETT being advanced too far down the channel. The tip of the AIRTRAQ is also lubricated. Following induction of anesthesia, the AIRTRAQ blade is inserted into the mouth in the midline and passed over the center of the tongue. To help with insertion, one can use a finger to open the mouth. Advancing the AIRTRAQ while applying some distraction on the blade will usually allow the intubationist to identify the uvula and then the epiglottis as the blade is advanced. Typically, the tip will come to be positioned in the vallecula where upon the epiglottis is lifted by elevating the blade. The tracheal tube is then advanced down the channel while maintaining the vertical lifting force that keeps exposing the vocal cords and the ETT cuff can be observed passing through the vocal cords. Once the cuff has

passed the vocal cords, one can inflate the cuff, connect the breathing circuit, and then separate the ETT from the guiding channel. The AIRTRAQ is then removed while holding the ETT in place.



## LMA ProSeal

Is a reusable supraglottic airway device that incorporates a gastric drainage tube placed lateral to the main airway tube and which ends at the tip of the mask. The gastric drainage tube is designed to separate the gastrointestinal and respiratory tracts, allowing regurgitated fluid to pass up the drain tube and bypass the glottis, thereby protecting the airway from soiling in the event of passive regurgitation. An important additional design feature is that a second, dorsally- located, cuff helps improve the airway seal, a particularly useful feature when positive pressure ventilation is desired. These design features were intended to achieve a better seal than an ordinary LMA permits, allowing patient ventilation using higher-than-usual airway pressures, as well as to reduce the likelihood of aspiration (because of the gastric drain tube). (fig. 17)

Besides expanding use of the LMA into clinical scenarios where the conventional LMA might be relatively contraindicated (e.g., obese patients), there have been several reports where the LMA ProSeal has extricated patients from “cannot intubate /cannot ventilate” patients, where the Intubating LMA and fiberoptic bronchoscope (FOB) were unsuccessful.

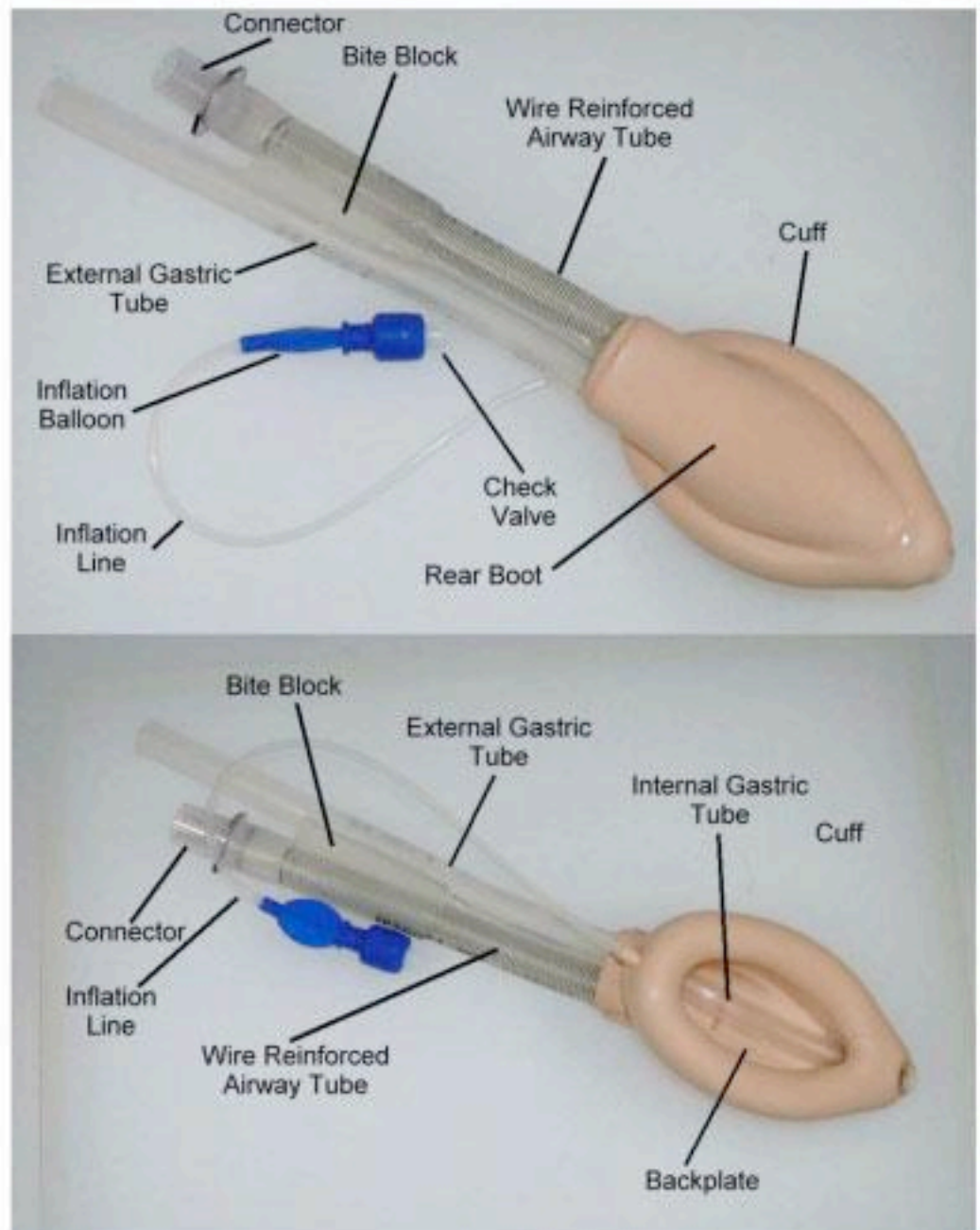
Insertion of the ProSeal™ LMA should be carried out following one of the manufacturer’s three recommended insertion techniques:

☒ Insertion using a special metal introducer instrument

1 ☒ Insertion using an index finger

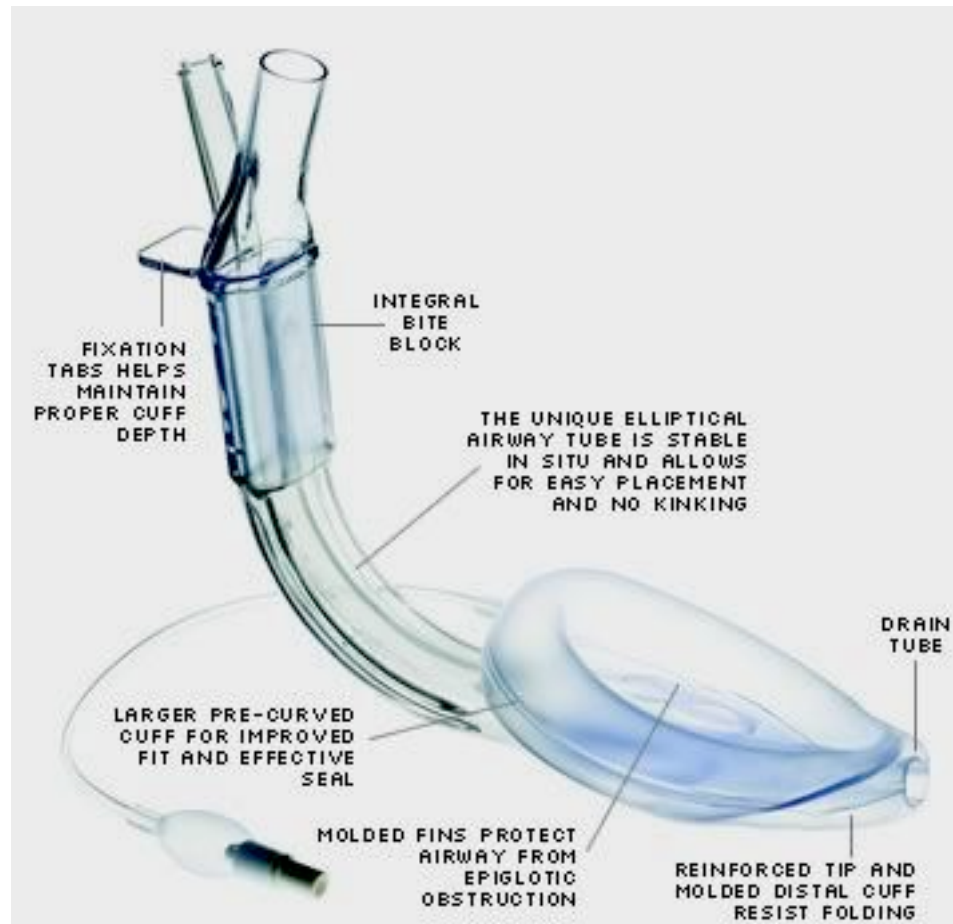
2 ☒ Insertion using a thumb

It has been reported that the LMA ProSeal is somewhat more difficult to insert than a conventional LMA, with a first pass success rates of 82% vs. 91% respectively; this has motivated some individuals to study alternative insertion methods. Using a Gum Elastic Bougie (GEB)/laryngoscope guided insertion technique produced a 100% first attempt success rate and a 100% success rate by preloading the LMA ProSeal with an orogastric tube.



## LMA Supreme

Is the first and only single-use LMA with a built in drainage tube designed to channel fluid and gas safely away from the airway and is used to verify accurate positioning. It is the disposable version of LMA Proseal with addition to have a hard tube anatomically designed to fit the airway. It is easy to use and thought to bridge the gap between ETT and LMA classic. It is thought to be superior to the LMA Classic because of its ease of insertion with low cuff pressure and high oropharyngeal leakage pressure.



## Intubating LMA

### Description:

The Intubating LMA has a rigid silicone-coated, anatomically curved steel airway tube, which closely follows the curvature of the palate and posterior pharynx. The distal end features an epiglottis-elevating bar to lift the epiglottis and allow passage of a tracheal tube or fiberoptic laryngoscope. (fig. 19)

### Indications:

- Guide for endotracheal intubation
- Unanticipated difficult intubations
- Failed intubation
- Intubation of patients with limited head/neck movement

### Contraindications:

- Lack of skill
- Non-fasted patient

### Advantages:

- 1  Portable, relatively inexpensive
  - 2  Large internal diameter to accommodate up to a size 8.0 ETT
  - 3  Allows ventilation/oxygenation throughout intubation attempts
  - 4  Rigid handle eliminates need to place fingers in the mouth and allows for manipulation of the device
- Disadvantages:
- Blind technique, potential trauma if not performed carefully
  - Requires mouth opening of at least 3cm

### Special Features:

- Allows intubation/ventilation in any patient position





## Laryngeal Tube Airway

The Laryngeal Tube Airway (LTA) is a supraglottic airway device. Created as an alternative to tracheal intubation or mask ventilation, this product was designed to permit positive pressure ventilation as well as to allow for spontaneously breathing patients. The LTA consists of a large bore tube with a large asymmetric balloon cuff at its middle part (proximal cuff) and a small balloon cuff located at the tip (distal cuff). There are two distal apertures in the tube between the two cuffs, through which gas movement takes place. The new version of the LT with a gastric drain has been commercialized. (fig. 20)

LTA is as effective as the classic LMA at providing a patent airway during controlled ventilation of the lungs, and that the laryngeal tube gave a significantly greater sealing pressure than the classic LMA. However, further studies have challenged this assumption and claim superiority of ProSeal LMA over LTA.

