



# Australian Society of Dental Anesthesiology

June 2012

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## Presidents Message

Message from the President

Greetings to all our members and guests, 2012 is almost half the year is over and the annual conference is but a few months away. The preparations continue and 2012 promises to be a departure from our tired formula. This year we'll be running two pre conference courses: one on the "Medical Emergencies in the Dental Surgery" and one on "Relative Analgesia, Nitrous Oxide Oxygen Sedation". The morning session of the conference, to a large degree, will be given over to a seminar on oral sedation with panel discussion from experts in the areas of paediatric and adult oral sedation. Many will be aware that this is a "hot" topic in the broader oral health community. The thinking behind these changes is that we must reach out to the community and establish ourselves as the peak body in sedation and pain control in dentistry. At the moment the membership is sliding as members retire and the numbers graduating from the graduate diploma course are not sufficient to make up for these retirements. The conference promises to be an exciting change with some controversy guaranteed.

Last weekend, Assoc. Prof Doug Stewart, Dr Michael Walker and I ran 2 full one day courses on Relative Analgesia in conjunction with the ADAQ in Brisbane. Over the two days we had 35 attendees and the ADAQ is particularly keen to hold another course in August during their annual conference. Clearly, there is a pent up demand for the course as the first course was booked out within the first week. It is the executive's intention therefore to investigate offering the course in other states. Using the ADA state branches has the advantages of risk sharing; being to use their communication network and their facilities.

Our relationship with the Dental Board of Australia (DBA) continues to evolve and I believe that we have established that our overriding principle on patient safety and theirs are the same. In the coming months are expecting to see communications on sedation which reinforce importance of patient selection and dental staff training in the provision of sedation. Many of you would be aware that there is some confusion on some of the terminology on sedation and the anxiety relief which we hope will be clearer to all.

Finally, it is important that members understand how the Australian Health Practitioner Regulation Agency (AHPRA) and the DBA may operate when it comes to a complaint. I can assure members that all aspects of their practice are investigated even if the original complaint is not about the performance of the sedation they receive. Of particular interest, at the moment, is the scope of practice. Therefore some of the types of questions asked are:

- Does the dentist have the necessary training to perform that procedure?

## 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>

- Does the sedation conform to the regulations? and
- Would it be considered appropriate to perform that procedure with the dentist as the operator/sedationist?

These questions are put to experts who, in some cases, may be ASDA members but they may also be specialist in other areas. This will make for an interesting discussion at our conference. For example, is the provision of some implant and oral surgery procedures under IV sedation too complex to be safely performed by the sole operator/sedationist? It appears that AHPRA is trying to determine the scope of practice through the courts and precedence. This is, in essence, credentialing of a significant area of health provision by lawyers.

Looking forward to catching up with as many members as possible at the Sheraton Mirage Gold Coast on the 9-11<sup>th</sup> November.

Regards

Greg

Greg Mahoney President of ASDA

Bellasario Award

This is a notice to all members that we are still accepting nominations for the This years Bellasario Award. Please forward all nominations to Dr. Douglas Stewart. The Bellasario award recognizes major contributions to dental sedation/anesthesia within the Australian dental community.

## Treasurers Report

As stated in the previous newsletter. The society remains solvent despite the difficulties last year posed by hosting IFDAS. The Society should be in even a better financial position after the subs come in and the next Scientific meeting.

Regards  
Andre Viljoen

## Annual Meeting For ASDA

Members are reminded that registration for the ASDA annual meeting is now open. The program is being finalized within the coming weeks and will offer a wide range of topics pertinent to intravenous sedation in Australia.

As continuing education in sedation above that provided by the medical emergencies course alone is now a requirement( see below). I urge all sedationist's to consider attending this meeting.

You can register through the link on the ASDA website to ensure you have a spot for this years meeting. Through the same link you can also signup for a CREST run medical emergencies course being provided on the Friday and now also on the Sunday. Space is limited ad on a first come first serve basis.

## **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  
Member, Dental Board Of Australia

## **RA Courses Run By The Society AND Queensland ADA. A Report by Dr. Michael Walker.**

Two days of RA course were run at Queensland ADA in conjunction with ASDA. The Tutors were Doug Stewart Greg Mahoney and Michael Walker.

The course attracted 35 participants.

Airliquid through the help of Mike Latta ensured 4 machines were available for teaching and assisted in the demonstration of machines .

Qld ADA were outstanding with their support as this truly was a joint venture.

These Ra course introduced **35** dentist to RA and also introduced them to ASDA. All participants received a free 1 year assoc. membership .I personally cannot think of a better way to introduce our society to general dentists. At the moment due to our low profile many general dentists are not even aware of ASDA.

I ask you how will we grow if we do not have a national profile?

Also the time given up by the people giving the course brings in revenue to the society and on paper we have increased our membership by 35 members .

We are the Australian Society of Dental Anaesthesiology and this means by definition we are the branch of dentistry that deal with the study teaching and

application of anaesthesia for dentistry in Australia. Therefore RA should be taught under our auspices. Ra is often the foundation of many IV techniques.

## **From The Editors Desk**

Firstly let me apologise for being so late with this edition. As many of you know

I have recently moved full-time to Australia and am practicing in Biloela

fulltime . As such I was a bit swamped with the move and thus

late with this edition.

Continuing Education Supplement

Over the next 2 newsletters we will discuss some fundamentals of

airway management. I would like to thank Dr. Jafer Faraj

( Senior Consultant Hamad Medical Corporation Qatar) for

allowing me to use material from his Fundamentals of Airway Management

course.

## **The Questions**

1) Briefly describe the pertinent anatomy of the airway

2) Briefly describe the innervation of the airway

3) Describe an appropriate preoperative assessment of the airway

4) What are indicators of a patient that will be difficult to mask ventilate

5) Describe the techniques used for holding the facemask.

6) What are some possible complications of an improperly applied facemask.

## The Answers

### 1) BASIC AIRWAY ANATOMY:

The upper airway is divided functionally into the nose, the pharynx, and the larynx. The pharynx can be defined further as the nasopharynx, the oropharynx, and the hypopharynx (fig. 1)

1) The nasopharynx encompasses the region posterior to the termination of the turbinates and nasal septum and extends to the soft palate. The oropharynx encompasses the area below the soft palate to the level of the hyoid bone. The tongue lies within the oropharynx, and the tonsillar pillars are situated in its lateral walls. The hypopharynx is the area immediately behind the larynx. The larynx is a complex structure of bone, cartilage, and muscles. The larynx comprises the hyoid bone; the thyroid, cricoid, and arytenoids cartilages; and the epiglottis, cuneiform, and corniculate cartilages (fig. 2). The false and true vocal cords are also cartilaginous structures of the larynx (fig. 3). The lower airway includes the trachea and the major bronchi.

### 2)The Larynx

#### Functions of the larynx

The larynx is continuous with the trachea and has a specialized constrictor–dilator mechanism in the airway. The constrictor mechanism of the larynx results in an effective and rapid closure that prevents food, liquid, and other foreign material from entering the lower airway. In addition, the vocal cords have a vibratory effect on the expiratory air column and produce the sound used in voice production.

## Laryngeal skeleton

The thyroid cartilage is responsible for the visible bulge (especially in male patients) known as the Adam's apple. This forms an effective shield (Greek thyros, shield) for the opening of the airway and supports most of the soft tissue folds in the larynx. Two downward projections, inferior horns, articulate with the cricoid cartilage below.

## Cricoid cartilage

Cricoid cartilage (Greek cricos, ring) is the only complete ring in the larynx and serves to support the posterior laryngeal structures.

The Thyroid cartilage is attached below to the cricoid cartilage by the cricothyroid membrane. Because of the relatively superficial location of the laryngotracheal complex, the cricothyroid membrane may be penetrated (cricothyroidotomy) to establish an airway in an emergency.

## Epiglottis and arytenoid cartilages

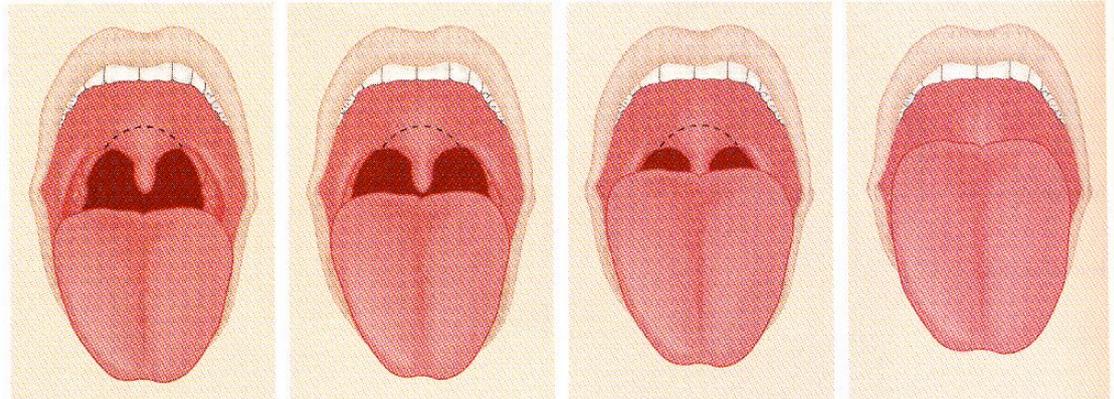
Two additional cartilages contribute to the laryngeal skeleton.

The epiglottic cartilage forms the anterior border of the laryngeal inlet and is attached to the hyoid bone and thyroid cartilage by several ligaments. The epiglottis is composed of cartilage and a covering mucous membrane. The bulk of the epiglottis projects posteriorly to the tongue and into the pharynx. The anterior surface of the epiglottis is concave; this feature, combined with laryngeal elevation, aids in airway protection during deglutition. Arytenoid

### 3) Airway Assessment

A) Review of the medical record for a history of previous difficulty in the management of the patient's airway. For the office based sedationist ask if the patient was ever told they had a difficult airway by a previous anesthetist.

B) Ask the patient open his or her mouth as widely ( In the sitting position) as possible and extend the tongue. This step accomplishes two important assessments: the presence of any potential limitation in mandibular opening and observation of the pharyngeal anatomy, with determination of the Mallampati classification. Class 1 through 4



Soft palate, uvula,  
fauces, pillars visible

No difficulty

Soft palate, uvula,  
fauces visible

No difficulty

Soft palate, base  
of uvula visible

Moderate difficulty

Hard palate only  
visible

Severe difficulty

C) Mouth opening should be more than 4 cm.

D) Measure the thyromental length—ideally, greater than 6 cm. See picture below.

E) Assessment of the patient's teeth, specifically for inspection for maxillary overbite or "protruding incisors." This will increase the difficulty of mask ventilation

4. Observation of the patient's neck (short, thick neck or long neck mean increased difficulty with both ventilation and intubation)).
5. Review of any systemic or congenital disease requiring special attention during airway management (e.g., respiratory failure, significant coronary artery disease, acromegaly).
6. Assessment of body habitus i.e. BMI 9 see previous neslettter)
7. Assessment of neck mobility and ability to assume the "sniffing" position.
8. Overall, think "LEMON" (fig. 8)

Assessment of the patient's ability to protrude the lower jaw beyond the upper incisors (prognathism).

Assessment of the patient's teeth, specifically for inspection for maxillary overbite or "protruding incisors."

Observation of the patient's neck (short, thick neck or long neck).

Review of any systemic or congenital disease requiring special attention during airway management (e.g., respiratory failure, significant coronary artery disease, or acromegaly).

Assessment of body habitus i.e. BMI

Assessment of neck mobility and ability to assume the "sniffing" position.

Overall, think "LEMON" (fig. 8)

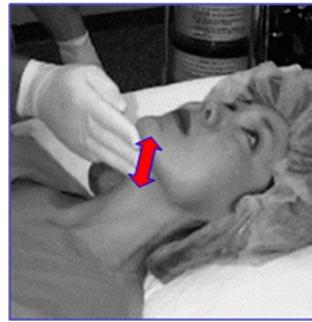


Fig. 7 measuring Thyromental distance

When assessing the airway, always think “LEMON”

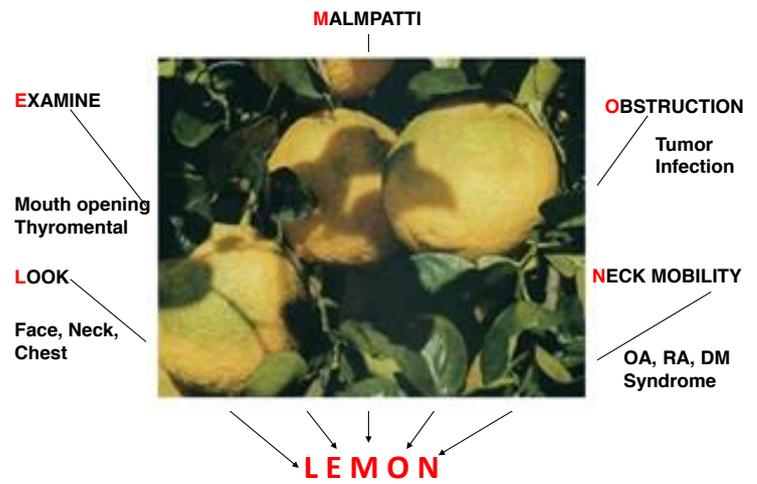


Fig. 8: summary of airway assessment “LEMON”

#### 4) Indicators of Difficult Mask Ventilation

##### Recognizing the difficult-to-mask-ventilate patient

The ability to mask ventilate a patient remains of paramount importance throughout every case. Ultimately, when all is said and done, so long as the patient can be ventilated, failure to intubate the trachea is much less of a problem (one can ventilate the patient until he or she awakens or apply further techniques to definitively secure the airway).

Several specific factors have been identified that allow the astute clinician to improve the likelihood of recognizing the patient who may be difficult to ventilate.

##### A) Presence of beard

The presence of a beard should alert to the potential of (1) underlying abnormality (such as a previous disfiguring cancer of the jaw, which may have caused the patient to grow the beard to improve the aesthetic appearance) or (2) difficulty in creating an effective seal and ventilation volume using a standard mask and flows.

##### B) Body mass index

Patients with a large body mass index ( $> 30 \text{ kg/m}^2$ ) also may be at risk of difficulty in mask ventilation. These patients also may be at greater risk because of the inherent decrease in functional residual capacity and difficulty in generating the required force to ventilate a large or heavy chest. Ensuring the use of a large enough mask and oral airway, using the two-person ventilation technique.

##### C) Lack of teeth

Patients who are edentulous or who have few teeth may make it difficult to establish an effective seal across the lower jaw, making ventilation difficult. It is commonly easier to leave false teeth in place (so long as they are well applied) until the patient is well oxygenated and ready for intubation (whereupon one can remove the upper dentures for laryngoscopy). Using a large mask (to cover the lateral aspects and angle of the mouth) with a firm placement of the third finger across the mentum (to keep the mouth closed and ventilate mainly through the nose) may be of help. Again, a large oral airway, centrally placed in the midline, may be useful in this setting.

##### D) Age and snoring

Patients older than 55 years and those with a history of snoring are at increased risk of difficulty with facemask ventilation (probably associated with varying degrees of obstructive sleep apnea). Continuous application of gentle, continuous positive airway pressure (CPAP) during induction with a good mask fit may be helpful in this situation.

##### E) Jewelry and piercings

Creative and imaginative ways to identify oneself as an individual are occasionally of importance. Among them and related to airway management is the piercing of the face (lips, tongue, cheek, chin, eyebrow, and ear—all parts). Although the more obvious penetrations will be seen on the patient, it is the less obvious ones that require some attention, as in tongue piercing. It seems most prudent to remove the item for the duration of the procedure and to replace it promptly, when feasible. The basic evaluation, including an examination of the mouth and tongue, has retained importance.

## 5) Techniques for Properly Holding a Face Mask and the Risks Involved in Using A Face Mask.

### Purpose

The face mask establishes a connection between the breathing circuit and the patient's face. Ideally, it can establish an air-tight seal along the skin around the nose (below the bridge), the sides of the cheeks, along the side of the mouth and under the lower lip, and above the bulb of the chin. This seal is established by a combination of forces applied from the mask onto the face and by maneuvers of grasping the face, chin, and cheeks into the mask.

### General description

The body constitutes the main portion of the device between the sealing portion and the fresh/controlled-gas connector. Historically it has been made of opaque rubber, but more recently it has been made of clear, more or less pliable plastic. This material allows the user to continuously view the face under the mask and to monitor for changes in color, position of lips, teeth, and tongue and the presence of secretions, blood, or vomitus.

The seal is the portion of the mask that comes into contact with the patient's face and allows the creation of an effective seal. It may be made simply of a preformed flap extension of the body of the mask (e.g. Rendell-Baker), it may be made of a pre-formed spongy cushion, or it may be a pre-inflated and sealed air-filled tube. Several manufacturers have included a valved access to this cushion to allow modulation of the pressure within the sealing part. This modification allows the user to change the conformity of the mask for the patient's face.

The connector is a standard-sized (22-mm) extension of the body of the mask opposite the face seal. It provides a connection to the fresh gas source, which can be the anesthesia circuit or a bag-valve apparatus.

### Using the facemask

#### The patient's face

Careful attention must be paid to the structure of the patient's face if one is to apply a mask to the face and expect to attain any effective seal or air movement through the airway. Complications may arise if the user is not gentle and attentive to the apparent and inapparent structures of the face when performing mask ventilation.

#### Apparent structures

##### Eyes

The eyes and eyelids are particularly vulnerable to trauma from the inadvertent brushing of the anesthetist's hand across the face, grazing the cornea with a watchband or fingernail, or accidental scraping with the mask itself. Likewise, one must be careful not to apply pressure to the globe by inappropriate placement of the mask or by using a mask too large for the face of the patient. Caution also must be used if the eyelids are not closed—there may be a jet of gas escaping from an ill-fitting mask that can dry the eye, causing corneal abrasion.

### Nose

The nose is also at risk for pressure, especially at the bridge at the top of the angle of the mask. Particular attention should be paid to this area, especially if the inflatable cushion seal is compressed markedly, which can cause the harder edge of the mask body to become a pressure point.

### Lips

The lips are at risk of compression by the mask, especially if it is too small (lower lip), by compression against the teeth or gums.

### Tongue

The tongue can be caught between teeth or gums while applying the mask, especially if a significant chin lift or submental pressure is applied when the tongue is protruded. This consideration is especially important if an additional adjunctive device such as an oral airway or cuffed oropharyngeal airway (COPA) is used.

### Cheeks and zygoma

The cheeks and zygoma are also at risk if the upper sides of the mask press too firmly against this area. Undue pressure against the chin, either above by the mask or below by a supporting finger, also is a risk.

### Chin

The soft structures of the lower jaw, including the angle of the jaw and the temporomandibular joint, can be damaged by inappropriate pressure at these sites.

### Inapparent structures

#### Facial artery and nerve (and branches)

Inapparent structures, such as the facial artery (especially where it crosses over the mandible by the angle of the jaw), the facial nerve branches, and infraorbital nerves can be at risk of compression injury.

#### Neck structures

Various neck structures also can be damaged by undue pressure or force on the carotid, jugular, and superior laryngeal nerves if caution is not used when adjusting or maintaining a facemask seal.

### Variations in gums and teeth

Pressure applied to the chin, lips, and cheeks may apply pressure to the underlying structures of the teeth and gums. Attention must be given to reduce the risk of such pressure on fragile or loose teeth or over malpositioned, broken, chipped, or everted teeth overlying the buccal surface of the lip.

Orthodontic brackets may cause point pressure; if care is not taken, frank lacerations on the inside of the lip may occur.

### The bearded male patient: (camouflaged danger)

Particular attention should be paid to the patient who presents with a beard. The beard may cause difficulty in establishing an effective seal; it also may camouflage unrecognized congenital or acquired abnormalities.



fig. 10.1 One-hand E-C technique



fig. 10.2 One-hand E-C technique.



fig. 10.3 Alternate one-hand technique



fig. 10.4 Two-hand technique.



fig. 10.5 Alternate two-hand technique