Awake Intubation Made Easy

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By far the hardest part of performing an awake intubation should be the decision to do it! Once that decision is made, the mechanics of securing the airway should be routine – familiar to you and comfortable for the patient. A review of the strategy for deciding upon awake intubation can be found in the notes on “Decision making in airway management” lecture. **Technique of Awake Intubation:**

Awake intubation (AI) is one of the most important tools of the airway manager. If you are going to manage airways, you must be good at AI (one day you’ll need it)! And if you have not performed an awake intubation in years, you probably are not doing enough of them (Don’t confuse being good with being lucky.) After speaking to thousands of anesthesiologists, I have come to two conclusions: The typical anesthesia practitioner 1) is insecure about his or her technique and 2) confuse airway anesthesia with AI technique. The sentinel grounds for these conclusions are deduced from the single question I have been asked almost every time I speak about airway management (no matter what the lecture topic): “Dr. Rosenblatt, what local anesthetic do you use?” This question betrays the misconception most clinicians have about AI: that AI is about producing a “numb” airway. In fact the topical anesthetic(s) chosen matter little. AI involves a systemic approach to patient preparation – once appreciated, and a consistent technique developed, AI can become as easy as routine airway management.

AI has 6 distinct elements – in my technique, each element is essential, and rarely do I diverge.

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*substituting the word “Account” those who like pneumonics can recall “ADD a TSP” (Benjamin Sherman, MD)

**Explanation:** All patients presenting to the operating room for surgery harbor some degree of anxiety. Though we may be comfortable in the OR, it is a foreign environment for most others, and surgery is most often a daunting prospect. Patients want the safest experience possible. If you have determined (via the AAA or your own method) that AI is warranted, you have erred on the side of safety – and the patient will understand this. A clear explanation to the patient is usually all that is required to gain cooperation. Explaining that they will feel or remember very little and that they will have some sedation is all that is needed. My typical explanation is always some variant of the following:

“My job is to make sure that you are breathing during surgery. Your anatomy differs (a lot / a little) from normal, and I have to make sure I can find your breathing pathway. What I am going to do is to make your throat numb, just like the dentist does (except I will not use needles unless absolutely necessary). I will then be looking in your mouth in order to find your breathing pathway. After I make sure you are comfortable and feeling none of this, I will put the breathing tube in.”

**Desiccation:** To desiccate is to “dry.” Before you begin to manipulate the airway below the nasopharynx it must be dry: 1) saliva is a protective barrier – it will protect the mucosa from your topical agents. 2) saliva dilutes your topical local anesthetic, and decreases it’s effectiveness. 3) manipulation of the airway produces more secretions – these secretions are an airway stimulant, causing more cough, laryngospasm, etc. 4) I’m likely to use an indirect optical device which will be neutralized by secretions. I don’t exclude patients who have had airway radiation and are already complaining of “dry mouth.” My concern is that any remaining functional salivary tissue will counteract
my efforts. My favorite desiccant is glycopyrolate (0.2 to 0.4 mg). Atropine, clonidine and scopolamine are also effective. Whatever agent you use, it must be given time to be effective -- at least 15 minutes. I will often give the agent in the nursing intake area as soon as the patient has changed clothes. If there is no IV in place, I do not hesitate to use an IM injection. This assures that the agent will have time to be effective. If, by the time the patient reaches the holding area, they are not complaining of “cotton mouth” I consider giving another 0.2mg.

**Dilatation:** This is primarily an ellipsis for saying “prepare the nose” which is done in all cases unless medically contraindicated, regardless of my intent to intubate via the mouth or nose. A vasoconstrictor is used to decongest the nasal mucosa. This widens the space and reduces the risk of bleeding during manipulation. Oxymetazoline (e.g., Afrin, Genisol) is the most effective and long acting agent. Why prepare the nose in all cases? 1) During preparation of the nose much of the effect occurs in areas of the oropharynx by both cross innervation, and passive leak of local anesthetic. Nasal preparation can be started before desiccation has been effective. 2) In the case where an oral intubation is difficult, the nose is prepared for manipulation – too many times I have seen the plan changed from oral to nasal intubation, and the nose is not prepared. This leads to an ill-fated “rush job.” This is often started in the intake area.

**Topicalization:** Except for cases of retrograde intubation, where a cricothyroid puncture is part of the procedure, I have not used invasive airway blocks for more than 8 years. Though I have no objection to “needle” blocks, I have not found them necessary. Additionally I use the same topical anesthetic technique in all cases: I don’t discriminate based on my intent to intubate by a nasal or oral route, or depending on which instrument I plan to use. There are also topical blocks that I do not employ. Again, its not because I object to them – I just use the techniques which work best in my routine. I divide the airway into three areas, and use directed blocks for each: Nasal passage/nasopharynx, base of tongue/posterior oropharyngeal wall, hypopharynx/larynx-trachea. Note, that should the patient begin coughing during the topical administration, he or she should be assured that the “local anesthetic is getting to the right place.” I also do not use atomized local anesthetic: Atomization produces significantly higher blood concentrations of local anesthetic and completely abolishes the cough reflex, which may be useful in case of deep lung gastric content aspiration.

**Nasal passage/nasopharynx:** This area is innervated by the anterior ethmoid nerve (anterior 1/3) and nasopalantine nerve. I take cotton swabs soaking with local anesthetic (4% lidocaine solution or 5% lidocaine ointment) and advance them slowly into the nasal passage, first up towards the cribiform plate, and then directly posterior until the boney feel of the sphenoid bone is encountered. Progress is incremental, and I “push to pain” that is, I advance the swab only until the patient winces or otherwise exhibits discomfort. This may take up to 5 minutes to accomplish. I will often start this procedure in the nursing intake area. It is complete by the time the patient reaches the holding area.

**Base of tongue/posterior oropharyngeal wall:** These are the only two areas in the mouth and pharynx that concern me. I don’t concern myself with the oral cavity – my dentist regularly performs an aggressive oral exam which I readily accept unless he accidentally stimulates my gag reflex. The glossopharyngeal nerve is responsible for the gag. We can access the glossopharyngeal where it travels in the base of the palatoglossal arch – that arch of tissue which travels from the uvula to the base of the tongue. A new set of lidocaine soaked swabs are inserted along the tongue until they contact anterior surface of the base of the arch. Some patients will respond to this with a retch. This is a good indicator that you are in the correct position. A slight backing off will resolve the gag. A few moments later the swab can generally be readvanced. The patient can close their mouth on the swabs and hold them in position for 5 minutes. This, and the following technique are generally accomplished in the holding area.
Hypopharynx/larynx-trachea: Many years ago at an ASA annual meeting I learned an old pulmonologist trick from a young anesthesiologist: a 10 cc syringe fitted with a large plastic angiocatheter is filled with lidocaine (2%). The patient extends the tongue maximally, and the anesthesiologist takes an unfolded gauze, wraps the tip of the tongue and does not allow the patient to retract. After the patient is assured that there is no needle, the catheter is inserted over the tongue until the distal tip is at the oral-pharyngeal juncture. Slowly lidocaine is “dripped” on to the tongue base. The procedure may take up to 1-2 minutes, and all 10 cc of lidocaine need not be used: At first the patient will cough. Once the coughing subsides, yet you can hear the gurgling of the lidocaine deep in the airway, you can let go of the tongue. Holding the tongue in this manner prevents the patient from swallowing the lidocaine, and encourages its aspiration. SEE VIDEO 1

If a flexible fiberoptic scope is used for the tracheal intubation, local anesthetic can be injected down the “working channel.” I prefer a technique described by Dr. A. Ovassapian in the early 1990’s: an epidural catheter is placed via the working port. Local anesthetic is then administered via the catheter (be sure to cut off a multi-orifice end). This has several advantages: the image is not obscured by the liquid, the stream can be aimed to an area of need, suction or oxygen can be administered at the same time. SEE VIDEO 2

The “hardest” airways: I am often called by colleagues to advise on the care of patients who have undergone extensive upper airway surgery and/or radiation. In these patients, invasive blocks may be difficult or impossible (altered anatomy). Though these can be “frightening” airways to manage, they are, paradoxically, often the easiest! 1) The patients are usually aware of anesthetist’s problem, and are motivated and willing to cooperate 2) There is reduced saliva production vis-a-vis prior radiation and surgical manipulation 3) there is often post-surgical analgesia.

Sedation: Any number of sedative agents can be used: bezodiazpines, opioids, droperidol, haldo, benedryl. There are three general rules I follow: 1) judicious titration – do not give significant boluses of the drugs. 2) Avoid polypharmacy – stay with one or two agents. 3) Have reversal agents available. Lastly, don’t confuse deep sedation with awake intubation. During AI the patient should be able to 1) cooperate with procedures and 2) control their own airway (including coughing). As of October, 2008, Dexmedetomidine is FDA approved for sedation in the unintubated for or prior to a surgical procedure. Several authors have demonstrated good cooperative patient conditions with use of this agent during aware intubation.

Procrastination: AI is undertaken when the clinician has decided that it is necessary for the wellbeing of the patient. As such, the above procedures should be executed in a controlled pace and composed environment. “Procrastination” is a tongue-in-cheek way of saying, do not hurry to get into the operating room.” The OR is a highly pressured environment, and it is difficult to allow generous time for antisiialogoges and topical anesthetics to
reach their therapeutic effect. Of course, the demands of modern medicine hardly allow such luxury – but we can achieve this goal through starting our procedures early: Oxemetazone is applied and glycopyrrolate is injected in the intake area (IM if an IV is not yet available). Topical anesthetics are begun in the holding area and continued with the patient’s stretcher outside the operating room. The patient does not enter the OR until there is some objective evidence that a block is being achieved (e.g., the patient tolerates an oral airway.)

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