

### **3 T's: Tips, Tricks, Techniques 4 (Apr 14, 1997)**

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#### **"Fluffers"**

The multiple cords, cables and other impedimenta which dangle from our anesthesia machines have the uncanny ability to become entrapped under the wheels despite cable ties, braiding, or suspension cables. At the least this is inconvenient, and occasionally presents more serious risk if the machine or any of the monitors piled up on top should topple.

A "Fluffer" represents a cost effective method to reduce, but not entirely eliminate, this problem. The basic principle is that of a wheel shroud which rests flush on the floor but permits the caster of the anesthesia machine to rotate freely (figure 1). When the anesthesia machine is moved the slope of the shroud keeps the cables up and away from the casters.

The basic component is a stainless steel (the heavier the better) dog food or bowl. This is modified by cutting out the inner container section but leaving the top of the rim. This rim needs to be curled back on itself to prevent the rough edge from catching on the wheel and being lifted off the ground. The internal dimensions of the bowl must be checked against the diameter of the wheel as there needs to be adequate clearance. There is significant variability of caster size even from the same the manufacturer.

Normally the "fluffer" need cover only the back two casters. Cables are not usually a problem with the front casters. When they are, they can be easily seen and relocated with a well aimed kick. At the front there is also a potential problem of tripping over the "fluffers" as they have quite a wide foot (paw?) print.

When transporting the machine a significant distance over a surface which may include obstructions (elevators, ramps) the "fluffer" can be hitched over the frame.

For those interested in trivia, the name is derived from two sources. The function of the device is to displace or "fluff" the cables out of the way. The second was the name of the cat "Fluff" whose picture appeared on the decorative sticker on the base of the bowl. The name of the dog was "Bob" but somehow a "Bobber" (Bobbet ?) did not seem to convey the right image.

I am aware of a device available commercially which works on a similar principle. However the device described here has the advantage of being an inexpensive option.

Submitted by: Richard Flowerdew, M.D., Maine Medical Center, Portland, Maine.

## Blood Pressure Cuff Storage

In our OR I have added a twenty inch strip of Velcro to the lateral (right) side of the anesthesia machines. I then keep several (5 or 6) different sizes of BP Cuffs readily at hand for the many different sizes of patient which I encounter.

Submitted by: James A. Kendall, M.D, Columbia Medical Center, Pampa, Texas

## "Miracle" Chin Bar

About thirty five years ago I was introduced to a method of supporting the chin for inhalational anesthesia administered via a face mask. The technique involves locating a specially prepared transverse bar under the chin which is supported by the mask straps (Figure 2). To prepare the "Miracle" Chin Bar three wooden tongue blades are wrapped in three inch wide foam tape. Strictly, any wide tape will do but it is less likely to cause pressure damage to the chin if it is padded. The ends of the wooden tongue blades project about an inch beyond each edge of the tape. This is important because the straps will be tucked between the ends of the tongue blades to act as a friction grip.

The mask strap must be positioned longitudinally under the head, i.e., the long axis of the harness is parallel with the table. The *end holes* of the two lower straps are attached to the face mask hooks even though this means that the strap will initially be hanging loose. This is important because the lower two straps are then hooked round the chin bar placed transversely under the chin; the straps must be long enough to form an angle when tightened to exert a lift under the chin - not just a backward drag. The straps are then pulled tight from the top of the table so that the assembly under the chin begins to work. The top two straps are crossed over to keep them on the top of the head and then attached to the face mask with some tension to balance the lift on the chin. Finally, the chin bar is dragged anteriorly on to the bony tip of the chin and is kept there by friction obtained by having the straps pass between the projecting tongue blades.

This technique works well for short cases and can usually be used without inserting an oropharyngeal airway. After approximately an hour it is essential to lift the bar off the chin for a few minutes to permit blood to circulate to the skin. This technique is not widely known and, since the introduction of the laryngeal mask airway, it may be used, and therefore known, even less. The name I have used for this bar was the name given it by my teachers who, I regret to say, are now nameless in my memory.

Submitted by: "Grog"

## **Children and the Truth in the OR**

Inappropriate language in the operating room makes our job harder. One of the commonest errors must be for someone in the operating room to inform a young patient: "We're not going to hurt you." Even the youngest child has learned just one very important lesson in life - any adult saying "I'm not going to hurt you" is not to be trusted.

The experienced practitioner knows this well. Other personnel providing assistance may be less conscious of this pitfall and try to reassure your patient. In our preparation we may need to brief other people in the operating room - and today this often includes the child's parents. Such efforts can forestall this unwanted "assistance". It then allows you, before an injection, to say something closer to the truth like: "This will hurt just a little bit . You stay very still and say 'Oh! Doctor - you're hurting me a little bit'."

Submitted by: "Grog"

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## **Inhalational Instructions**

We can be our own worst enemies during an inhalational induction when we instruct a child to "Take some nice deep breaths." The patient may comply while alert and cooperative. As the child becomes sedated, however, this period of voluntary hyperventilation is followed by hypoventilation, breath-holding, or apnea.

At the very moment when continued steady breathing might ensure continued uptake of the anesthetic agent, we have arranged for an interruption in this process with the risk of partial emergence, restlessness, and a prolongation of induction.

A different and better strategy employs something closer to: "Gently blow the smell away. Gently! Gently!" This may not hasten the first stage but it tends to smooth out the second.

Submitted by: "Grog"

### **Pre-Set the Ventilator and Employ it Early.**

Following intubation there is a short period of intense activity when an "extra pair of hands" is useful. During this period, necessary activities may include application of tape to the tube, auscultation of the chest, adjustment of gas flows, selection of vaporizer concentration, insertion of airway and esophageal stethoscope; protection of the eyes, attachment of additional monitors such as a nerve stimulator, preparation and administration of additional drugs, as well as making frequent observations of capnometry, pulse-oximetry, blood pressure, ECG, and gas concentrations. At some point in this sequence, often later rather than sooner, mechanical ventilation is initiated.

A useful strategy is to preset the ventilator to provide frequent breaths, e.g., a rate for 20 bpm, with a rapid, i.e., audible, inspiratory flow rate. Either immediately, or after a single initial manual breath to observe chest movement and capnogram, the ventilator is switched on while the other duties are carried out. Auscultation can be performed, and the other preparations completed, while the patient is automatically ventilated with the appropriate inhalational anesthetic agent. At the first convenient opportunity the ventilator is slowed down to a normal setting to avoid the risk of hyperventilation and hypotension.

Submitted by: "Grog"

### **Positioning for Macintosh Laryngoscopy**

Some lessons last a lifetime. One morning, a year or two into training, several attempts to achieve orotracheal intubation had failed. This saga was conducted with the assistance of a nurse in the privacy and seclusion of the anesthesia induction room. Our tranquillity was disturbed first by the abrupt entry of the gowned and gloved senior surgeon and then by his inquiry "Boy! What are you doing?" When given an explanation that I was having difficulty with the intubation, he provided his expert analysis and prescription: "Of course you're difficulty, boy!. Nurse put three pillows under the head. And then you, boy, put the tube in the patient." The nurse did as she was instructed, and so did I - with no difficulty at all.

There are patients, initially difficult to intubate, who can be easily intubated using a Macintosh blade when the head is supported on a massive stack of pillows. This is quick, atraumatic, and always worth trying. It requires the following. The bed must be at its lowest setting unless the anesthesiologist is really tall. The pillows are under the head not the shoulder. Folded sheets (many) are a good alternative. You are doing it right when: a) it is awkward to achieve the initial insertion of the blade because the handle strikes the chest wall; and b) you notice that your gaze is almost exactly straight downwards towards the floor.

Every anesthesia resident should practice this position frequently. I have, years ago, lost count of the number of times I have employed this technique to intubate a patient for a colleague having trouble.

Submitted by: "Grog"

## **Best Extubation Technique**

Appropriate extubation technique facilitates the clearance of secretions from the upper airway, the avoidance of laryngospasm, and the maintenance of oxygenation. A period of oxygenation prior to extubation ensures that there is a pulmonary reservoir of oxygen to support metabolism for a few minutes following extubation. Mouth aspiration is employed to clear secretions from the upper airway.

When the patient is judged fit to extubate, the pressure in the breathing circuit is raised with manual pressure on the bag. Expansion of the chest must be achieved to provide enough air for an effective cough. If the patient is straining, considerable pressure may be required; is appropriate; and may be employed safely. With the chest expanded, the cuff is deflated and the tube rapidly withdrawn while pressure is still being maintained. This maneuver should elicit an effective cough which clears any remaining secretions from the vocal cords.

Immediately following extubation, and before a breath of room air can be taken the face mask is employed to continue the administration of oxygen. At the same time forceful jaw thrust is provided using digital pressure very close to the external auditory meatus. This has the benefit of providing a clear airway in combination with a vigorous arousal stimulus.

The only caveat when using this technique is to "Never relax for a moment!". This technique, properly employed, is so effective that a patient may emerge, cough, and respond to commands while being aroused, and then subsequently become stuporous, obstructed, and hypoxic if left undisturbed. Trust me - I know! Stay vigilant.

Submitted by: "Grog"