The Tracheotomized Patient

Toilet and Speech

To the Editor:

As a quadriplegic and ventilator-dependent person since 1987 resulting from ALS and with a background training in general and thoracic surgery, I have become increasingly concerned with the inadequacies of suctioning techniques shown by theoretically well-trained professionals.

Training of medical, nursing, and respiratory therapy personnel in suctioning techniques has been largely on unresponsive individuals or on individuals who could not communicate or lacked definitive experience or medical knowledge sufficient to allow them to convey any perceived dissatisfaction with the methods of tracheal toilet used.

Verification of the effectiveness of suctioning via palpation, percussion, auscultation, or x-ray is infrequent, relative to the frequency of suctioning, and little feedback is available from the patient. Therefore, several questionable and probably undesirable techniques have become widely used.

The positive pressure maintenance adapter PEEP-Keep, Concord-Portex, SIMS has a cuffed chimney with a hollow silicone rubber plug in the chimney that fits snugly about the suction catheter, allowing maintenance of positive pressure and oxygenation while the patient is being suctioned. Use of the adapter helps obviate such traumatic practices as in-and-out suction catheter passage necessitating multiple passes, insensitive too-rapid catheter passage, and twisting of the catheter. It is more importantly comfortable, less distressing, and hence, less frightening to the patient.

Unfortunately, this device is not ordered routinely and even when used, it is often not accompanied by changes in suctioning technique that would quite obviously be beneficial to the patient.

To be maximally effective, suctioning should be carried out at moderate speed continuously on the way in as well as on the way out. Good technique demands the use of the senses of touch and hearing, as well as sight. Most importantly, to be most effective, one should stop to empty collections of secretions whenever encountered before proceeding further.

For those tracheotomized quadriplegic patients who have vocal cord function and can tolerate cuff deflation, there appears to be inadequate dissemination of information about and use of devices such as the Fosy-Muir Valve, a simple one-way valve that opens in inspiration and closes in expiration forcing the expired air out through the vocal cords, allowing and augmenting speech.

For the patients who cannot tolerate cuff deflation, controllable speech is of incalculable importance. With a talking tracheostomy tube (Trach-Talk, Portex) with its Christmas tree adapter attached to suction tubing, by plugging a suction machine into a standard X-10 appliance module (PowerHouse, Radio Shack), a ventilator dependent quadriplegic with functioning vocal cords can use any switching device and remote control to turn on and off the suction and talk at will!

Adopting a Collective Noun for “Pulmonologists”

To the Editor:

Despite a lack of consensus on whether we call our specialty “pulmonology” or “respirology,” I found myself very much in sympathy with Dr. Sharma’s desire (Chest 1994; 106:1932) for a collective noun for our specialty. Dr. Sharma’s example of “a wheeze of pulmonologists” immediately suggested a “crackle of respirologists,” but, on reflection, both struck me as too pathological. How about “an inspiration of respirologists” or your choice of pulmonologists, chest physicians, respiratory medicine specialists, etc?

Measuring Continuous Fick Cardiac Output

To the Editor:

We read with interest the article by Nakamishi et al1 published in Chest in August 1993. We did similar investigations in patients with severe left ventricular dysfunction,2 and our results basically correspond to the results reported by Nakamishi et al, but there is one fundamental fact we cannot agree with. The authors state that the accuracy of the fiberoptic pulmonary artery catheter (Opticath, Oximetrax, Mountain View, Calif) is ±2% in the range of SaO2 between 0 and 100%. Based on our experience, however, the correlation between spectrophotometrically measured SvO2 and SvO2 values readout from the fiberoptic pulmonary artery catheter is not linear in the range below 40%. Thus with decreasing SvO2 levels, there is an increasing underestimation of the SvO2 values by the catheter-system. We found, for example, that a fiberoptic pulmonary artery catheter SvO2 value of 20% corresponds to a “true” spectrophotometrically measured value of 27%.

Assuming an oxygen consumption of 900 mL/min, an SaO2 of 97% and Hb value of 13 g/dL (data from Fig 4 in the article), the SvO2 difference leads to a marked underestimation in cardiac output of 0.7 L/min (6.7 L/min vs 7.4 L/min).