flow volume curves derived from volume exiting the lung measured by spirometry and thoracic gas volume measured by body plethysmography are identical, then it is the result of a suboptimal patient effort. The point of this case was that it is the degree of compression, which is diagnostic.

Although we also agree that both dynamic and fixed airway obstruction could cause thoracic compression, we are unaware of studies relating to the latter. We certainly do not expect the degree of compression as seen in our patient to be present in patients with purely fixed obstruction. This belief is supported by a recent case of a tracheal obstruction (due to tracheal web), which was associated with fixed obstruction, good effort, and no evidence of an abnormal compression artifact. Thus, we agree that the specificity of the compressed volume measurement for dynamic collapse needs further investigation by studying patients with fixed obstruction.

We also are not aware of any clinical trials in treating airways collapse. Based on our clinical experience, purse lip breathing is not obvious to some patients and thus may need to be taught. Although we agree that such trials need to be performed to determine efficacy of continuous positive airway pressure in airways collapse, practical considerations often necessitate individual therapeutic trial in recalcitrant symptomatic patients.

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Consider Other Exubtation Strategies To Maintain Difficult Airways

To the Editor:

Chipley and colleagues are to be applauded for calling attention in the March 1994 issue (CHEST 1994; 105:961-62) to the often forgotten detail of maintaining airway access after extubation of a difficult airway. Their patient, a 14-year-old morbidly obese man, had sustained multiple injuries including a pulmonary contusion and a fractured occipital condyle. After 8 days of mechanical ventilation, his condition had improved to the point of allowing tracheal extubation. Had extubation not been successful, reintubation may have been unsuccessful, prolonged, or resulted in neurologic injury. They elected to extubate their patient over an obturator (Metro Mivus Endotracheal Tube Replacement Obturator, Cook Critical Care; Bloomington, Ind). Had reintubation been required, this might have facilitated reintubation. This approach to the extubation of the difficult airway has recently been incorporated into the Practice Guidelines for Management of the Difficult Airway of the American Society of Anesthesiologists.

The Metro Mivus Replacement Obturator is available in two sizes, 7 and 19F. Unfortunately, the authors have not stated which obturator they used. Andenaert and colleagues described the use of the smaller obturator as a tube exchanger and to maintain airway access during 22 tracheotomies and 7 “tentative extubations.” They stated that the smaller caliber device offered less interference with spontaneous respiration.

Several other tube exchangers are commercially available, including the TTX and JETTX (Sheridan Catheter Corp; Argyle, NY), the Patil Two-Part Stylet and the Airway Exchange Catheters (Cook Critical Care) and the CardioMed Endotracheal Ventilation Catheter (ETVC, CardioMed Supplies; Gormley, Ontario, Canada). The latter was developed by the undersigned and has been used in over 200 patients including three patients in whom the device remained in situ for 48 to 72 h. The ETVC, like the TTX, JETTX, Patil, and the Airway Exchange Catheters are hollow and permit oxygen insufflation, jet ventilation, and capnography, should these be required. Thus, they offer the additional advantages of supporting a patient requiring reintubation, permitting monitoring of end-tidal carbon dioxide, and confirmation of tracheal placement. Verification of tube changer position by either distance markings or a frontal radiograph does not exclude the possibility of esophageal placement.

These comments are not meant to diminish the importance of the authors’ contribution. They have reminded us that patients in whom intubation had been or may have become difficult (cervical immobilization, intermaxillary fixation, airway injury, etc) or those with little physiologic reserve, an extubation strategy which facilitates reintubation should be strongly considered.

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Effect of Moderate Altitude on the Effect of Mouth-to-Mouth Ventilation on Blood Gas Analysis

To the Editor:

Wenzel and coworkers report in the December 1994 issue (CHEST 1994; 106:1506-10) about the composition of gas given by mouth-to-mouth ventilation during cardiopulmonary resuscitation (CPR). Considerable consideration was given to the fact, that the delivery of a hypercarbic gas mixture could contribute to hypercarbic acidosis and possibly to an adverse outcome in a victim of cardiopulmonary arrest. As Austria is an alpine country, our interest is mainly focused on emergency medicine in alpine rescue. Blood gas analysis of mountaineers changes considerably at altitude due to hypobaric hypoxia and due to respiratory adaptation to altitude. The objective of our small trial was therefore to evaluate the impact of moderate altitude on the effect of mouth-to-mouth ventilation on blood gas analysis.

The study was performed as a randomized, single blind, placebo controlled crossover trial. Six male volunteers, age 22 to 24, took