Another Use for the Fiberoptic Bronchoscope

To the Editor.—The fiberoptic bronchoscope is a notable advance in the management of difficult intubations. On occasion, because of anatomic derangement or excessive blood and secretions, the glottic inlet cannot be visualized. I have found that the fiberoptic scope can be used as a light-wand stylet to intubate the trachea on these occasions. When the room lights are dimmed, the scope can be advanced blindly while the course of the light is followed. When the bronchoscope enters the trachea, there is a characteristic brightening of the light as is seen with use of the light-wand stylet manufactured for this purpose. The extremely bright light of the bronchoscope makes it visible in some situations where use of the light-wand stylet is difficult (dark complexion, scarred neck). The bronchoscope also allows for manipulation of the tip, which is not possible with the rigid stylet.

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Reference

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PEEP Antidiuresis: An Alternative Hypothesis

To the Editor.—Recently, Payen et al. reported that ADH was not involved in the well-known antidiuretic effect of PEEP. Among the several mechanisms discussed in his excellent paper which could account for this antidiuretic effect, atrial natriuretic factor (ANF) was not mentioned.

It is conceivable that ANF could participate in the antidiuretic effect of PEEP. In fact, the increase of intrathoracic extravascular pressure secondary to the application of PEEP tends to decrease the transmural pressures in the cavities of the heart, resulting in a reduction of cardiac size. At the atrial level, such reduction of size should result in a decrease of ANF secretion, due to the diminished activity of the atrial stretch receptors. Such decrease of ANF would, in turn, result in antidiuresis.

The authors controlled the circulating blood volume as constant. However, they reported an increase in venous pressure, which suggests that there was redistribution of blood volume; it is likely, therefore, that the cardiac volume was indeed reduced, in spite of constant total blood volume. It would be of interest to measure the plasma concentration of ANF in patients before and after the application of PEEP; conversely, it would be interesting to observe if the antidiuretic response to PEEP could be prevented by maintaining constant the
atrial volume, rather than the total blood volume, by appropriate volume infusion.

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In Reply—The comments and the hypothesis expressed by Dr. Urzua are pertinent and exciting. At present, the exact mechanical parameter responsible for ANF release is not known. Theoretically, it could be intraatrial pressure or volume, stretching tension of the atrial wall, or intramyocardial tissue pressure. In this respect, the effect of PEEP is interesting but complex. In terms of transmural right atrial pressure (RAP TM), there are conflicting experimental and clinical data. Following cardiac surgery, we have measured intraluminal RAP and plasma concentration of ANF (pANF) before, after 15 min of PEEP 15 cm H2O, and after discontinuing PEEP. We found a linear relationship between the percent change of RAP and the percent change in pANF (fig. 1). When RAP was greatly increased, pANF was increased, and when RAP did not change, decreased, or only slightly increased, pANF was decreased. We conclude that ANF secretion during PEEP is largely dependent on the initial filling pressure and volume status. Furthermore, the finding that ANF release was only seen with a large increase in RAP suggests that ANF stimulation is more related to the transmural pressure than the intraluminal pressure.

It is clear that there is a blood volume redistribution during PEEP. Using a G Suit with moderate inflation, we have corrected the peripheral blood pooling induced by PEEP. Unfortunately, the correction of cardiopulmonary blood volume, cardiac output, systemic arterial blood pressure, and renal blood flow associated with a large increase in RAP failed to increase diuresis and natriuresis.

In addition, while stimulation of ANF was shown to occur in numerous disease states, such as congestive heart failure, cirrhosis, or paroxysmal atrial tachycardia, an inhibition of ANF release was only demonstrated during lumbar epidural anesthesia. At present, there is no evidence that an inhibition in pANF release could induce an antidiuresis. In conclusion, we think that renal function alteration during PEEP is probably not under the control of a single mechanism, but results

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Fig. 1. Relationship between variations of pANF (%) and intraluminal right atrial pressure (ΔRAP) in % from ZEEP to PEEP 15 and from PEEP 15 to ZEEP.

from the interaction between cardiovascular reflexes and stretch reflexes from the lung.

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