This in fact was not the case. In the nine patients who received halothane, airway pressures decreased an average of 4.3 cm H₂O, compared with 3.4 cm H₂O in patients anesthetized with nitrous oxide–narcotic. Also, no marked difference in the decreases in airway pressure was found between patients with histories of bronchospastic pulmonary disease and those without. Peak airway pressures decreased an average of 4.4 cm H₂O in the ten patients with pulmonary disease and 4.1 cm H₂O in the six patients without pulmonary disease.

In conclusion, I believe that bronchospasm during anesthesia is a more common entity than suggested by Dr. Barbee.

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Temperature and Density of Tetracaine

To the Editor:—Dr. Landmesser correctly points out that the commonly used hypobaric dibucaine solution contains 0.66 mg/ml, i.e., 0.066 per cent. My reference to this solution was not meant to imply, however, that density was related to drug concentration only. Density is defined as the mass of a unit volume of a material at a given temperature. Obviously, two compounds of different densities can be mixed with a third to make the same concentration. However, given the same solvent the density of this final mixture will be a function of the densities of the solutes.

Dr. Landmesser is critical of the reporting of density of tetracaine solutions at 23–25°C rather than 37°C. However, under usual clinical circumstances tetracaine solutions are not warmed to 37°C prior to injection. Although it probably takes about a minute for the injected solution to reach body temperature, this has not been proven in vivo. Even prior to warming to body temperature, solutions of 0.33 per cent tetracaine–water and less are lighter than CSF at 37°C. The densities of tetracaine–water mixtures at 37°C are also, as would be expected, a linear function of dilution (fig. 1). However, it remains to be determined whether solutions of tetracaine that, at 37°C, are hypobaric to CSF at 37°C, but at 23–25°C are equidense with CSF at 37°C, behave clinically as isobaric or hypobaric mixtures.

Finally, the term “baricity” is not synonymous with density. Baricity is a relative term: “The weight of one substance compared to the weight of another substance at the same temperature.” When used in relation to spinal anesthesia, the “other substance,” i.e., CSF, is usually understood. However, for maximum clarity, the temperatures of both the local anesthetic solution and CSF have to be clearly specified.

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Fig. 1. Densities of tetracaine–water mixtures at 23–25°C and at 37°C compared with CSF at 37°C ± 3 SD. Filled circles are individual determinations at 23–25°C, triangles are means of at least three determinations at 37°C.
Occlusion of an Endotracheal Tube Connector

To the Editor:—Following intubation of the trachea in preparation for a tonsillectomy, it was found to be impossible to hear breath sounds or to ventilate the patient's lungs. An Ayre's circuit had been used for a mask induction without difficulty. The Portex endotracheal tube was immediately withdrawn and inspected for patency. Appearing patent, the same tube was reinserted into the trachea. Again the anesthetist was unable to ventilate the patient's lungs, and the endotracheal tube was withdrawn.

Upon closer inspection, it was found that the connector (Dupaco 30340) was totally occluded by a thin, almost invisible plastic membrane just inside its small end. As figure 1 illustrates, the membrane was visible only when the light struck it at an oblique angle.

The connectors are packaged by our supplier on a piece of cardboard under a clear plastic film that is applied with heat and a vacuum. The manufacturer (Dupaco) was unaware of this procedure.

In the packaging process the plastic material was drawn into the connector, and it remained there when the connector was removed from the package.

Fortunately, the membrane was not dislodged by positive pressure while the tube was in the trachea. This potential disaster occurred because a new piece of equipment was not tested for patency before being put into service. The second chance at finding the defect was lost when the entire anesthesia circuit, including tube and connector, was not tested for patency before use.

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Fig. 1. Connector with the film occluding the end (left) and with the film removed (right).