Anesthesiology
47:481, 1977

In reply—Dupaco does manufacture and distribute the Fre-Flo Connectors cited in Dr. McKinley's article, but we do not vacuum pack these connectors or any other connectors, nor have we ever done so. We package the Fre-Flow Connectors individually in a heat-sealed poly bag, with the Dupaco Part No., size, and Dupaco name and logo imprinted on the outside of the package. The Part No. 30340 Dr. McKinley referred to in his letter is a Dupaco Part No. for a set of nine connectors, sizes 3 mm through 11 mm, packaged in a clear hard plastic case.

Dupaco distributes all of its products through authorized distributors and we have no record of the supplier of this connector to Crouse-Irving Memorial Hospital.

We think a supplier, unknown to us, purchased our parts and repackaged them in a blister pack. Dupaco cannot be held accountable for such actions.

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Literature Briefs

Peter J. Cohen, M.D., Editor

Literature briefs were supplied by Drs. A. R. Boutros and R. B. Clark. Briefs appearing elsewhere in this issue are part of this column.

Pulmonary Physiology

ALVEOLO–ARTERIAL OXYGEN DIFFERENCE AND SHUNT Forty-one patients admitted to a trauma center were studied. All were less than 40 years of age with no known pre-existing cardiopulmonary disease. Femoral or brachial arterial cannulation was performed. A central venous catheter was placed in the superior vena cava above the right atrium and postion verified radiographically. A flow-directed catheter was placed in the pulmonary artery. Samples of blood were simultaneously obtained from arterial, central venous and pulmonary arterial lines for measurements of P_{O_2}, P_{CO_2} and *p*H while patients were breathing air and 100 per cent oxygen. Hemoglobin content was determined by cyanmethemoglobin technique and oxygen content was calculated from P_{O_2} using the Kelman equation. Alveolar oxygen tension ($P_{A_{O_2}}$) was assumed to equal: $F_{I_{O_2}} \times B.P. - P_{H_2O} - Pa_{CO_2}$ where $F_{I_{O_2}}$ = fraction of inspired oxygen concentration, B.P. = barometric pressure, P_{H_2O} = water vapor pressure (46 torr). Though changes in alveolo–arterial difference ($A - aD_{O_2}$) correlated significantly with changes in shunt fraction ($\dot{Q}_s/\dot{Q}_t$), in 29 of 113 studies changes in $A\text{-}aD_{O_2}$ were actually in the opposite direction to changes in $\dot{Q}_s/\dot{Q}_t$. It was concluded that a change of less than 45 mm Hg in $A\text{-}aD_{O_2}$ was not a reliable indication of direction of change of $\dot{Q}_s/\dot{Q}_t$. The reason for this was assumed to be variability in arteriovenous oxygen difference as compared with the assumed value of 5 ml/100 ml of blood. The use of arterio-central venous blood oxygen differences reduced the error in shunt calculation on the basis of $A\text{-}aD_{O_2}$ provided that the $\dot{Q}_s/\dot{Q}_t$ was less than .22. In 71 of 126 studies, larger $\dot{Q}_S/\dot{Q}_t$ values were obtained when patients were breathing 100 per cent oxygen than when breathing air. (*Shapiro AR, Virgilio RW, Peters RM: Interpretation of alveolar–arterial oxygen tension difference. Surg Gynecol Obstet 144:547–552, 1977.*) ABSTRACTER'S COMMENT: The authors documented the well-known effects of variations in cardiac output (and consequently arteriovenous oxygen differences) on $A\text{-}aD_{O_2}$ and Pa_{O_2} measurements. The alveolar oxygen equation used in this study could be valid only when 100 per cent oxygen was used. Using this equation during breathing of air would lead to a calculated $P_{A_{O_2}}$ of 7,316 mm Hg, assuming barometric pressure 760 mm Hg and $P_{A_{CO_2}}$ 40 mm Hg. Consequently, $\dot{Q}_s/\dot{Q}_t$ calculations during breathing of air in this study were not accurate.

Obstetric Anesthesia

BUPIVACAINE AND UTERINE ACTIVITY Uterine performance (*i.e.*, uterine activity expressed in Montevideo units and in pressure area, number, and amplitude of contractions) was monitored by intra-amniotic tocomanometry in 16 patients during lumbar epidural analgesia. Technically adequate recordings were obtained with 34 top-up doses, of which 24 were given during oxytocin-induced or stimulated labor and 10 during spontaneous labor. Thirty-two doses of 10 ml of 0.25 per cent and two doses of 6 ml of 0.5 per cent plain bupivacaine were administered. Aortocaval compression was avoided by placing the patients in the lateral (31 doses) or the semirecumbent position (three doses). Statistical analysis by means of Student's t test failed to show a difference between uterine performances before and after the top-up dose. It is suggested that aortocaval compression is an essential factor contributing to or responsible for the temporary depression of uterine activity that has been observed by other investigators after epidural injections of local anesthetic agents. (*Schellenberg JC: Uterine activity during lumbar epidural analgesia with bupivacaine, Am J Obstet Gynecol 127:26–31, 1977.*)