

## Correspondence

### Terminology

To the Editor.—The advertisement in May 1971 ANESTHESIOLOGY of a new so-called "Continuous Positive Pressure Breathing Valve" (Ohio Medical Products, p. 15) calls attention once more to the increasing use of the term "continuous positive-pressure breathing (CPPB)" to describe a kind of intermittent-pressure breathing employed with an end-expiratory pressure of 5 to 10 cm H<sub>2</sub>O. The inspiratory pressure is not mentioned, but it is conceded to be five to ten times the expiratory pressure.<sup>1</sup>

This kind of *alternating pressure* is different from the definition of CPPB as I introduced it for the treatment of obstructive dyspnea and pulmonary edema in the helium hood and as was used later in its application to aviation.<sup>2-4</sup> This technique was consistently defined as the maintenance of the same or nearly the same pressure during inspiration and expiration. The inspiratory pressure was shown to decrease the negative intrapleural pressure when it was elevated by constrictive disease of the respiratory passageway, and the pressure during expiration preserved a more patent bronchial lumen.

When CPPB was employed to increase tolerance to altitude, it was again clearly described: "... continuous P.B. is defined as the procedure in which the positive mask pressure is kept as nearly constant as possible, the variations in pressure with inspiration and expiration are relatively small, and the pressure at expiration is slightly higher than at inspiration."<sup>3</sup>

I believe the authors who have called their new apparatus and technique CPPB should choose another appellation to describe their intermittent-pressure breathing with end-expiratory pressure devices.

I feel entitled to preserve my definition of CPPB on the basis of innovation as well as priority, both of which have escaped recognition. If there is to be a two-China policy in pressure-breathing therapy, the labels should

be different for the two, and I don't propose to change.

ALVAN L. BARACH, M.D.  
Consultant in Medicine  
The Presbyterian Hospital  
New York, New York 10032

#### REFERENCES

1. Ashbaugh DG, Petty TL, Bigelow DB, et al.: Continuous positive pressure breathing (CPPB) in adult respiratory distress syndrome. J Thorac Cardiovasc Surg 57:31-41, 1969
2. Barach AL: Principles and Practices of Inhalational Therapy. Philadelphia, Lippincott, 1944, pp 53-56, 259-263
3. Barach AL: Physiologic Therapy in Respiratory Disease. Philadelphia, Lippincott, 1948, pp 342-346
4. Barach AL, Fenn WO, Ferris EB, et al.: Physiology of pressure breathing. J Aviat Med 18:73, 1947

To the Editor.—Dr. Barach's objection to the present use of the abbreviation "CPPB" (or "CPPV"), i.e., continuous positive-pressure breathing, has led us to propose the following substitutes:

1. MV with PEEP = Mechanical ventilation with *positive* end-expiratory pressure.
2. MV with ZEEP = Mechanical ventilation with *zero* end-expiratory pressure.
3. MV with NEEP = Mechanical ventilation with *negative* end-expiratory pressure.

This will cover most of the clinical situations and add a little ring to an otherwise dull terminology.

HENNING PONTOPPIDAN, M.D.  
Department of Anesthesia  
Massachusetts General Hospital  
Boston, Massachusetts 02114

EDITOR'S COMMENT: We thank Dr. Barach for pleasantly reminding us of his pioneering efforts in the development of respiratory assist

devices and his proper place in the history of mechanical ventilation. With this aspect, there is no controversy. The problem of terminology remains, however. Some believe Dr. Barach should have called his technique "constant positive-pressure breathing," since its objective was to maintain a constant mask pressure. They also believe that "continuous positive-pressure breathing" is the proper description

for conditions during which mask pressure is always positive but not constant. A happy solution would be to retain CPPB to describe Dr. Barach's technique and his priority. The new term suggested to describe the end-expiratory positive-pressure technique now in vogue is "PEEP" (positive end-expiratory pressure). PEEP has the merits of accurate description and a pleasantly musical acronym.

### More on Minipigs and Metabolism

*To the Editor:*—In a recent editorial,<sup>1</sup> Dr. B. L. Brown discussed at some length the implications of results presented in the same issue by Sawyer *et al.*<sup>2</sup> We find ourselves unable to agree with some of his interpretations.

In miniature swine, Sawyer did not show loss of halothane across the liver at high halothane concentrations, whereas at lower levels a considerable fraction of halothane was lost.

Dr. Brown interpreted these results as showing that "halothane acutely inhibits its own metabolism." Sawyer *et al.* did not demonstrate any such inhibition; indeed, they clearly noted that they were unable to discriminate between the alternatives of enzyme saturation and enzyme inhibition at high halothane concentrations. Failure to demonstrate loss of halothane at high halothane concentrations is probably due to the difficulties associated with distinguishing relatively small differences between two large values, even though the loss in absolute terms may well be similar to that which is readily estimated at lower halothane concentrations.

Dr. Brown noted that "if any criticism is to be made, it is that the hepatic halothane concentration differences observed were only assumed to be the results of metabolic extraction." This criticism is totally justified, as differentiation between hepatic storage and metabolic breakdown is crucial in the interpretation of this type of data. Sawyer and his co-workers assumed that the fraction of

halothane removed was that which was metabolized. In the absence of any actual metabolic data this assumption is unwarranted. The statement made by Dr. Brown that halothane acutely inhibits its own metabolism is not supported by Sawyer's data or comments.

Comparative data on the metabolism and distribution of volatile anesthetics in miniature swine and humans are not available. In this instance it is hazardous, to say the least, to translate inconclusive data obtained in swine to man.

D. M. FOULKES, PH.D.  
J. C. TOPHAM, B.Sc., PH.D.  
M. J. WINROW, B.Sc., PH.D.  
*Biochemical Pharmacology Section  
Safety of Medicines Department  
I.C.I. Pharmaceuticals Ltd.  
Alderley Park, Macclesfield  
Cheshire, England*

#### REFERENCES

1. Brown BR: Minipigs, microsomes, metabolism, and Maupassant. *ANESTHESIOLOGY* 34:217-218, 1971
2. Sawyer DC, Eger EI II, Bahlman SH, *et al.*: Concentration dependence of hepatic halothane metabolism. *ANESTHESIOLOGY* 34:230-235, 1971

*To the Editor:*—Drs. Foulkes, Topham and Winrow have erred in suggesting that the results obtained by Sawyer *et al.* might be ex-