

Head-box for CPAP

To the Editor:—It has been called to my attention that the use of a head-box in the application of CPAP in infants and children as well as adults was first described by Alvan Barach and his co-workers in 1936 and 1937 (1,2). In my recent editorial (3), I refer to the use of a head-box by Gregory and co-workers for the application of CPAP in infants with respiratory distress syndrome, but failed to point out the prior use of the device by Barach.

I would also recommend to interested readers the excellent review of this subject by Barach and others (4), which describes the history of continuous and intermittent positive pressure breathing in considerable detail.

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2. Kernan JD, Barach AL: Role of helium in cases of obstructive lesions in the trachea and larynx. *Arch Otolaryngol* 26:419-447, 1937
3. Downes JJ: CPAP and PEEP—A perspective. *ANESTHESIOLOGY* 44:1-5, 1976
4. Barach AL, Bickerman HA, Petty TL: Perspectives in pressure breathing. *Resp Care* 20:627-642, 1975

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Gastric Juice in Obesity

To the Editor:—In the December issue (*ANESTHESIOLOGY* 43:686-689, 1975), Vaughan and Bauer claim to find both a larger volume and a lower pH of gastric juice in obese patients. Unfortunately, they failed to correlate their data with acid-base changes in arterial blood. The obese patient verging upon respiratory insufficiency and CO₂ retention is placed in a more precarious state when given depressant preanesthetic medication (Innovar, 1-2 ml, and diphenhydramine), also in the supine position. Considerable respiratory acidosis could have been present, possibly, therefore, reflected by increased H⁺ concentration in gastric juice. Patients in chronic renal failure with metabolic acidosis demonstrate this phenomenon.¹ Increased H⁺ is present in the duodenum as well. The gut also acts as a secretory route for urea, the ammoniacal odor on the breath being indicative of NH₃ ion resulting from splitting of the urea molecule. It is questionable, therefore, to advocate rapid or topical intubation of the trachea in every obese patient on the basis of insufficient evidence of this kind.

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1. Shepherd AMM, Stewart WK, Thjodleifsson B, et al: Further studies of gastric hypersecretion in chronic renal failure. *Br Med J* 19 January 1974, pp 96-98

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To the Editor:—We appreciate Dr. Vandam's interest. All 56 of the obese patients (groups IA and IB) had arterial blood-gas studies performed pre- and intraoperatively. These measurements were obtained with the patient breathing room air in the supine position both preoperatively (unpremedicated) and just prior to induction of anesthesia (premedicated). Values for the acid-base variables (mean \pm SE) in the 50 obese pa-

tients who received preanesthetic medication were:

| | P_{aCO_2} (torr) | Base excess (mEq/l) |
|---------------------------|-----------------------|------------------------|
| Unpremedicated | 35.7 ± 0.8 | 0.5 ± 0.6 |
| Premedicated | 37.4 ± 0.7 | 0.7 ± 0.4 |
| Significance (P value) | <0.01 | >0.05 |

None of the 56 patients manifested carbon dioxide retention (pickwickian syndrome) preoperatively. Our experience that obesity hypoventilation syndrome is rare even in excessively obese individuals agrees with findings of other investigators.² Preanesthetic medication (Innovar, 1.0–2.0 ml, and diphenhydramine) caused a statistically significant increase in mean P_{aCO_2} , although the increased value was always within the normal range. Furthermore, base excess values were unchanged statistically by preanesthetic medication.

Despite normal acid–base values in obese

patients prior to anesthetic induction, there was both an increased volume and a lower pH of gastric juice. Consequently, our conclusion that one should consider either tracheal intubation using topical anesthesia with the patient awake or a rapid intravenous induction–intubation sequence seems valid.

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2. Farebrother MJB, Mellardy GJR: Editorial: Respiratory complications of obesity. *Br Med J* 1974, p 469

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Anesthesiology Key Words

A pamphlet that contains a list of key words used in ANESTHESIOLOGY is now available. The pamphlet also contains a list of several hundred cross references to identify the key words assigned to terms commonly used in anesthesia. Together the two lists serve as a mechanism for retrieval of published information and for construction of indexes of anesthetic literature. The lists also standardize anesthetic nomenclature. Copies of the 42-page pamphlet may be obtained by sending one dollar (U.S.) to Mrs. Edith Fleischer, Department of Anesthesiology, 333 Cedar St., New Haven, Connecticut 06510.