

Anesthesiology
72:397, 1990

Asymptomatic Hyponatremia Does Not Require Rapid Correction

To the Editor:—Van Boven *et al.*, describe a case report of dilutional hyponatremia following hysteroscopy.¹ An acute decline in serum sodium from 139 mM to 115 mM with a concomitant decline in serum osmolality was noted. This change was felt to be secondary to uterine absorption of 1.5% glycine irrigating solution. We agree that this is indeed acute hypotonic hyponatremia, as documented by a serum osmolality fall from the probable 290 mOsm/l range to the 263 mOsm/l reported. This in and of itself is unusual as, quite often, absorbed glycine will act as an osmotically active agent and maintain near-normal serum osmolality despite the fall in serum sodium. This may be detected by calculating an osmolar gap (measured minus calculated serum osmolality).²

Of some concern in their paper, however, is the employment of 1 g/kg of mannitol and 40 mg of furosemide for the "rapid correction" of an asymptomatic patient with hypotonic hyponatremia. Free water restriction would have likely corrected this laboratory finding in an otherwise healthy patient without renal or cardiac impairment. Many reports warn that rapid correction of hypotonic hyponatremia may precipitate the osmotic demyelination syndrome and may lead to permanent neurologic damage.^{3,4} Most experts recommend correction rates of less than $3 \text{ mEq} \cdot \text{l}^{-1} \cdot \text{h}^{-1}$ in the setting of symptomatic hypotonic hyponatremia. None, however, recommend rapid correction in an asymptomatic patient.⁵

While we commend the authors in documenting this potential problem during hysteroscopy, we caution against directing treatment toward rapid correction of hypotonic hyponatremia in an asymptomatic patient.

DAVID M. ROTHENBERG, M.D.
Assistant Professor, Rush Medical College

Anesthesiology
72:397, 1990

In Reply:—I agree with Doctor Rothenberg; free water restriction would have corrected the asymptomatic hypotonic hyponatremia in this patient. The focus of our case report was to point out a potential danger of a new endoscopic technique *i.e.*, a development of hyponatremia.

MICHEL J. VAN BOVEN, M.D.
Staff Anesthetist

Anesthesiology
72:397-398, 1990

Failure of Nitrous Oxide-Oxygen Proportioning Device

To the Editor:—The Link 25 Proportioner "malfunction," that was the subject of the recent letter,¹ was found to result from an incorrect adjustment of the control mechanism that was not authorized by Ohmeda or the hospital. Although this appears to be an isolated incident, it could happen again. In addition, Ohmeda also notes that other situations, for the most part beyond its control, have occurred in which hypoxic mixtures could be delivered. These include deliberately cut chains, a back pressure problem, forcibly turning knobs past their stops, and one case in which the exact cause could not be determined. Faulty procedures and unauthorized alterations of the

system, which are beyond the control of Ohmeda, may indeed present hazards to the patient.

While the overall safety records of machines equipped with the Link 25 Proportioning device are excellent, problems of the type encountered by Dr. Richards and those mentioned above may again occur. For this reason, all of the recommendations and points made by Dr. Richards should be seriously considered. These include:

- 1) Follow the preoperative equipment check.
- 2) Use an oxygen monitor with an appropriately set audible alarm.

ANTHONY D. IVANKOVICH, M.D.
*Professor and Chair, Department of
Anesthesia
Rush Medical College*

*Department of Anesthesiology
Rush-Presbyterian-St. Luke's Medical Center
1653 West Congress Parkway
Chicago, Illinois 60612*

REFERENCES

1. Van Boven MJ, Singelyn F, Donnez J, Gribomont BF: Dilutional hyponatremia associated with intrauterine endoscopic laser surgery. *ANESTHESIOLOGY* 71:449-450, 1989
2. Rothenberg DM, Ivankovich AD: Isotonic hyponatremia during transurethral prostate resection. *Anesth Analg* 68:S240, 1989
3. Sterns RH, Riggs FE, Schochet SS: Osmotic demyelination syndrome following correction of hyponatremia. *N Engl J Med* 314:1535-1542, 1986
4. Ayus JC, Krothapalli RK, Arieff AI: Treatment of symptomatic hyponatremia and its relation to brain damage: A prospective study. *N Engl J Med* 317:1190-1195, 1987
5. Narins RG: Therapy of Hyponatremia: Does haste make waste? *N Engl J Med* 314:1573-1575, 1986

(Accepted for publication November 16, 1989.)

*Service d'Anesthesiologie
Clinique Universitaire St. Luc
10/1821 Avenue Hippocrate
B 1200 Bruxelles, Belgium*

(Accepted for publication November 16, 1989.)

- 3) Require daily completion of a posted preoperative check list for each machine.
- 4) Understand the general functional characteristics of the anesthesia machine.
- 5) Always exercise vigilance.

To this Ohmeda would add:

- 1) Never alter or bypass safety devices that have been built into your machine.
- 2) Insure that maintenance and service are regularly carried out by qualified individuals only.

Good practice and vigilance on the part of the user are always essential in minimizing any hazard. Dr. Richards' letter is an excellent illustration of how this practice can work.

CHALMERS M. GOODYEAR
Product Safety Manager
Ohmeda
Ohmeda Drive
Madison, Wisconsin 53707

REFERENCE

1. Richards C: Failure of a nitrous-oxygen proportioning device. *ANESTHESIOLOGY* 71:997-999, 1989

(Accepted for publication: December 13, 1989.)

Erratum

In the December 1989 issue of *ANESTHESIOLOGY*, figure 2 in the Review Article (Priebe H-J: Isoflurane and Coronary Hemodynamics. *ANESTHESIOLOGY* 71: 960-976, 1989), is reprinted from Berne RM, Levy MD: *Cardiovascular Physiology*, 2nd edition. St. Louis: C.V. Mosby, 1972. For an updated version of this figure, please see page 200 of the 5th edition (1986).