

SUMMARY

A Portable Unit For Fluothane-air Anesthesia ("PUFFA") has been described, and the results of its use in a series of selected patients has been evaluated by analyzing data obtained from both clinical and laboratory observations.

The advantages of the "PUFFA" would appear to be considerable especially in emergency situations requiring a nonflammable inhalation anesthetic and a simple and safe portable inhaler which permits ventilation to be supported manually without elaborate equipment.

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Intermittent Vacuum Regulator

Dr. Russell C. Smith, of Bethlehem, Pennsylvania, reports on an intermittent vacuum regulator, held on the wall by attaching to a conventional wall outlet which not only provides a functional improvement over the floor-type suction pumps, but also helps eliminate the hazards and wasted space of an equipment-cluttered floor.

Unlike an electrically operated suction pump, the intermittent vacuum regulator provides positive control of the suction being applied to the patient and cycles automatically to a definite return to atmospheric pressure at pre-set intervals. Dr. Smith uses the intermittent vacuum regulator most commonly in the recovery room for controlled gastrointestinal drainage through a Levine tube in the stomach or a Miller-Abbot or Cantor tube in the intestine. The unit has an operating cycle of approximately 20 seconds, with suction applied to the patient for approximately 16 seconds and a complete absence of vacuum

for the following 10 seconds. Settings are provided for the application of "high" or "low" suction: 120 and 90 mm. of mercury respectively. The drainage bottle, set at eye-level or below, rather than on the floor, is readily visible to nursing personnel.

The intermittent vacuum regulator permits a return to atmospheric pressure during the "off" portion of the cycle and creates a reversal of the fluid flow. This reversal flushes solids that block the catheter and thus reduces the necessity for periodic flushing by personnel. In similar manner, tissue occlusion of the catheter is avoided, so there is continued removal of the fluids without injury to tissue.

The intermittent vacuum regulator compensates for varying line vacuum without being affected itself. An indicator on the regulator follows the course of the cycle, so that the attending nurses can see at a glance the operation of the unit. The piped vacuum system, with its relatively high volumetric



Intermittent vacuum regulator (left) is used in conjunction with piped vacuum system in recovery room.

capacity, compensates for initial excessive gas and fluid removal and reduces the hazard involved. Constant availability of the service is assured by use of a duplex vacuum pump located outside the patient area, in a mechanical room.

Respiratory Monitor for Infants

Drs. H. J. Birkhahn and M. Heifetz of the Government Hospital "Rambam" in Haifa, Israel, report a solution to the problem of monitoring respiratory changes in the pediatric patient. Due to the infant's diminutive size there is constant overlapping between surgical and anesthetic fields especially in head and neck surgery, and frequently the anesthetist finds himself maintaining remote control over his patient. In view of this they have devised a simple gadget which gives sufficient information to administer a safe, balanced anesthetic and to have constant control over the respiratory pattern.

The idea of monitoring breath sounds has been popularised by the 'breathophone' of Shane. However, the amplification of breath sounds, particularly if partial obstruction, *e.g.* secretions, is present, can be alarming to non-anesthetic listeners. A more discreet and inexpensive gadget is the use of a modified Ayre's T-piece with a stethoscope attached. Between one end of the tube and the endotracheal connection an adapter with a nipple

Another advantage of the intermittent vacuum regulator lies in its constant availability for service because it usually remains on a wall bracket close to the outlet. On the other hand, suction pumps are usually returned to the central supply or to the maintenance department for cleaning after use on a patient. In addition, the convenience of the intermittent vacuum regulator allows maximum utilization of the recovery-room nurse's skills, since the time wasted in pulling over a portable suction pump, making connection to an electrical outlet, and preparing the equipment for drainage is eliminated. Instead, catheter application and turning a dial are the only activities required. The unit is light and maneuverable (less than 6 inches high) and can be easily transferred between piped outlets.

The intermittent vacuum regulator functions from a vacuum wall outlet and not from an electrical connection thus reducing the potential hazard in the recovery room, where oxygen is used extensively and where flammable anesthetics may be re-administered.

for connecting the rubber tubing of the stethoscope is inserted. They have constructed T-tubes with a built-in nipple in order to reduce the dead space. To prevent gas escaping through the ear pieces a small piece of cellophane is inserted between the ear piece and the metal arm of the stethoscope. No pressure changes have been noted on manometric control through the stethoscope connection because the resistance is much



Respiratory monitor for infants.