

A Simple Accurate Technique for Establishing Zero Reference Levels for Pressure Measurements

To the Editor:—When measuring pressures, the “zero” on the manometer scale or the transducer height must be at the same level as the cavity in which we wish to measure the pressure. Several devices have been described to avoid errors in extrapolating levels in the human body to the scale or the transducer. All have similar defects: they occupy too much space, they are difficult to keep clean, and they are awkward in use.

For the last 10 years we have been using a system

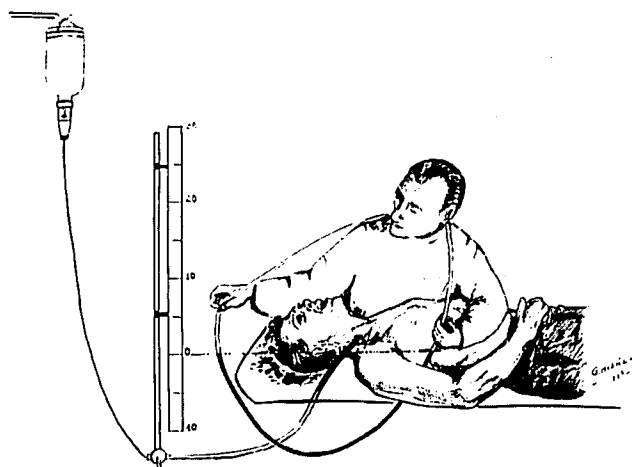


FIG. 1. Reference for central venous pressure is shown above.

that avoids these drawbacks, is inexpensive, and can be improvised with materials readily obtainable in any hospital. It is based on a technique widely used in construction.

The system consists of a transparent and highly flexible non-wettable tube. We use a silicone tube 250 cm with an internal diameter of 0.6 cm, although the diameter and length can vary. Colored fluid is introduced into the tube along with a small amount of alcohol in order to reduce surface tension and bubble formation during transportation or handling. Once the tube is half full of fluid, both ends are closed and then connected.

As can be seen in figure 1, the technique consists of setting one part of the tube at the reference body level and another part close to the scale or the transducer. The scale or transducer is lifted or lowered until the fluid level coincides with that at the body level. Placing this device around the operator's neck greatly facilitates the technique.

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Emergency Equipment in the Labor Suite

To the Editor:—Epidural analgesia for labor has been a service provided by our Anesthesia Department for two decades. This usually has been performed by a physician in the labor suite with monitoring of the

patient by the accompanying CRNA. To avoid aspiration pneumonitis, a reliable suction is necessary. The problem arises in determining beforehand what constitutes adequate preparation for an event that may occur only once in several years.

Our newly constructed labor rooms have wall suction plumbing, but the wall suction units are kept in the bottom shelf of a work cart, which is brought into the labor room for epidural anesthesia. We recently have measured how long it takes to assemble the wall units.

Twenty-four members of the anesthesia department assembled the wall unit (the CRD system of T. M. Medivac Corp. Abilene, Texas) from the components

TABLE 1. Suction Assembly Time

Group	Number	Average Time (s)
CRNAs	10	70.3
SRNAs	3	91.0
Residents	6	121.0
Staff anesthesiologists	5	118.8