Precordial Electrocardiograph Stethoscope

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ECG monitoring during anesthesia usually involves the use of three peripheral leads. The device presented here obviates the need for any of the usual peripheral leads and uses an ordinary precordial stethoscope head as a precordial ECG lead simultaneously preserving the auscultatory function of the stethoscope. This device (fig. 1) consists of plastic tubing 20 inches in length with a T-piece at approximately the midpoint. The distal metal female connector is wired to a metal connector at the end of the side arm the lumen of which is occluded. The 20-inch length of plastic tubing has the usual lumen for transmission of sound. Any preferred monaural or binaural earpiece may be used.

The left arm lead (LA) of the ECG machine is attached to the metal connector at the end of the short side arm, the right arm and left

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Figure 1

Figure 2
leg or right arm and ground leads are connected to any metallic protuberance on the Bovie electrocautery unit (fig. 2). This hook-up requires prior placement of the patient grounding plate of the Bovie machine, under the calf of the leg to which the RA and LL leads are attached regardless of whether electrocautery will be used. The position of the side arm at ten inches from the stethoscope head places it just over the patient's shoulder for easy access in connecting the ECG leads even after draping. Using this device routinely on the precordial stethoscope permits setting up the ECG at any time during surgery without much disturbance or need for any difficult access to the patient. The LA lead is simply clipped to the stethoscope side arm and the RA and LL leads to the Bovie machine. Connected in this manner the tracing is upright and of a more customary appearance (fig. 3). Connecting the RA lead to the side arm will produce a tracing as illustrated in figure 4.

With this connecting device simultaneous auscultation and ECG recordings are possible and practical at any time from preinduction through the entire period of operation. In situations in which mechanical interreference with the precordial stethoscope may occur, as a result of surgical assistants' movements, the use of the small Wenger stethoscope head in the suprasternal notch provides excellent auscultation of the heart and lungs, plus an undisturbed ECG record.

**Nonrebreatihing Assembly**

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An apparatus which affords an immediately available nonrebreathing system on Foregger and Ohio anesthesia gas machines has been devised from inexpensive components. This assembly consists of a modified T-piece bag holder for a Jumbo circle absorber mounted on either the extension boom for a Bloomquist infant circle absorber or the support bracket for an Ohio infant circle absorber. This unit offers a combination of advantages over other nonrebreathing assemblies.

With Foregger anesthesia machines the extension boom and a circle absorber are mounted together on the telescoping absorber pole in such a manner that either the nonrebreathing or the absorption system may be pushed aside and the other rotated into position for immediate use (fig. 1). The telescoping absorber pole may be mounted on either the right or the left side of the anesthesia machine. The nonrebreathing and absorption systems are completely independent. Unlike a nonrebreathing assembly which utilizes the inspiratory limb of a circle absorber, this assembly does not depend upon the competence of directional valves to seal off the absorber.

The T-piece bag holder (A, fig. 2) is modified by brazing a tall vertical sleeve (B) onto the bottom proximal to the bag fitting and distant enough from it to provide sufficient clear-