Successful Cardiac Massage, Open and Closed

To the Editor:—Shocket and Rosenblum present a most provocative account of successful open cardiac massage following unsuccessful closed-chest cardiopulmonary resuscitation in The Journal (200:333, 1967). They reported that "75 minutes of closed-chest massage sustained but failed to resuscitate a 32-year-old patient." This report among others demonstrates the need for high standards in closed-chest cardiopulmonary resuscitation. The authors report a common cause of failure in closed-chest cardiopulmonary resuscitation, that of inadequate attention to detail. Success requires prompt and adequately performed emergency measures (for sustaining life) and specific therapy for resuscitation, per se. The National Research Council has approved the high standards of both emergency and definitive therapy outlined by the American Heart Association’s Committee on Closed-Chest Cardiopulmonary Resuscitation (198:372, 1966).

Repeated administration of epi-nephrine at intervals of five minutes is strikingly effective in increasing perfusion pressure and, more importantly, the vigor of ventricular fibrillatory activity. The latter is essential in electrical conversion. In addition, the use of potent suppressive agents to support a spontaneous effective rhythm cannot be overemphasized. The intravenous administration of lidocaine in 50 to 100 mg aliquots has been most effective for this purpose.

Appropriately, acidosis was combated, but calcium gluconate might better be reserved to increase the strength of contractions after a spontaneous rhythm has been established. Because closed-chest compression is associated with reduced perfusion, high concentrations of oxygen are necessary rather than "air-oxygen mixtures."

The high standards and specifics of definitive therapy in closed-chest cardiopulmonary resuscitation are described extensively in publications by the American Heart Association, and it is obvious that participation in programs stressing high training standards would significantly contribute to successful resuscitation in sudden unexpected death.

Undoubtedly there are indications for open cardiac massage, but a growing experience has demonstrated well the effectiveness of this readily available technique.

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Underneath

The Logwood Tree

To the Editor:—Rough calculation yields the figure of 6 billion as the number of aitches (II) The Journal has printed as a symbol for the dye hematoxylin in the past 50 years. How many of your in¬trepid and Hardy readers know that this dye is obtained from the log¬wood tree? And how many can identify a logwood tree on sight?

Traveling recently in Jamaica my curiosity was aroused by passing a "Logwood Plantation" which turned out to be a commercial log¬wood farm.

Unknown to the average Yankee, the tree is wholly familiar to the average Jamaican, as a scrapply unkempt nuisance of a tree, good for holding barbed wire when serving as fencepost, with staining of the staple holes by an iron hematoxylin differing only slightly from that of Weigert.

The bark shows circumferential stripes (Fig 1), and the tree with its series of small leaves reminds one of the algarroba or mesquite, partly because the trunk is anything but round, and skewed in many cylindrical parts. The foliage is thin (Fig 2) and the shade there¬from unobstructed. Jamaicans to the man know the value of the heartwood which yields the dye, and larger trees had better be guarded, lest they be stolen. Haematoxy¬lon campachianum was, with other dyewood trees, formerly a substan¬tial commodity from the Yucatan peninsula of Mexico, and was a part of the commercial traffic at Campeche—called logwood because it was shipped as logs.

The wood is extremely hard, and it cracks and checks so badly on drying that it is of no value for woodworking, unlike its relatives purpleheart, which yields the dye amaranth, or Brazil rosewood. Never¬theless, hematoxylin, the dye, has survived the competitions of syn¬thetic chemistry and still reigns as king of the nuclear dyes em¬ployed by histologists.

Alas, the logwood tree under which I stood at Ochos Rios boasted no such majesty in its appearance.

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Classification of Lung Cancer—to be Revised

To the Editor:—The accuracy of lung cancer mortality data chal¬lenged in The Journal (198:174, 1966; 199:674, 1967) may be con¬siderably improved by the Eighth Revision of the International Classi¬fication of Causes of Death. The present nomenclature lists malign¬ant neoplasm of bronchus and trachea, and of lung, specified as primary (code No. 162), and malignant neoplasm of lung, unspeci¬fied as to whether primary or sec¬ondary (code No. 163). The latter category was always included in the tabulation of lung cancer mortality but uncertainty has existed as to whether the medical certifier had omitted primary specification because of the possibility that the pulmonary cancer was a metastasis from an occult extrathoracic pri¬mary site.

Figure 1.

Figure 2.
Beginning Jan 1, 1968, there will be implemented a new nomenclature. All cases of lung cancer will be considered of primary origin (code No. 162) unless the certifier specifically designates that the tumor is of secondary origin (code No. 165 and 197.0). This revision will contribute considerably to the validity of lung cancer mortality data if attending and resident physicians are made aware of the new nomenclature and state on the death certificate whether the lung cancer is bronchogenic or metastatic from an undiagnosed primary site. The new classification also imposes an additional responsibility on the hospital pathologist to exercise the meticulous care in the histologic examination of biopsy and autopsy material in the interest of greater statistical accuracy.

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Delivery Pressure at The Catheter Tip

To the Editor:—Since the publication of our paper entitled “Delivery Pressure at the Catheter Tip in Selective Angiography,” (199:11, 1967), we have received many comments from those who are interested in this subject. Among these, the comments by Gilbert and Fletcher (200:83, 1967) are most pertinent, and we wish to offer the following answers.

1. The frequency response of the miniature pressure transducer (Statham SF-1) was tested in our laboratory with a newly developed technique (Bottacini, Burton, and Lim: Calibration of High Frequency Manometers With the Shock Tube, J Appl Physiol, to be published). It showed the cutoff frequency of 3,050 cycles per second for a sinusoidal output to an input amplitude ratio of 95%. The damping ratio was 0.043. With the same technique, the cutoff frequency was 13.5 cps for the Sanborn 267B pressure transducer when it was used in conjunction with a 7F Courmand catheter, 125-cm length. The damping ratio in this case was 0.146.

Because of the obvious underdamping, we tested the delivery pressure at the catheter tip in an overdamped system, using the Sanborn 267B pressure transducer (Fig 1). The damping was done mechanically by partially occluding the interconnecting tubing between the pressure transducer and the catheter, and the system was tested by a “burst diaphragm” method of Hansen (Acta Physiol Scand 19) (Suppl 68), 1949. Under these conditions, we observed a pattern of “peak pressure” and “plateau pressure” (Fig 2). This pattern is the same as those observed with the miniature pressure transducer.

2. The test chamber, whether it is made of stiff material or elastic, should have no direct effect in our data because the chamber fluid was maintained near atmospheric level throughout the test by means of an overflow trap of large diameter (4 mm). Furthermore, the distance study revealed that there was hardly any “buildup” of fluid pressure in the chamber during injection. To prove this point further, the catheter tip pressure was recorded with the endplate of the test chamber completely open (Fig 3). The result obtained with this setup is identical with that recorded with the endplate closed. Thus, the pressures measured were those of the high velocity stream of the contrast material, not the pressure of the fluid surrounding the catheter.

3. The shaft of the pressure transducer was positioned in such a way as to form an angle of approximately 120° to 140° with that of the catheter. This angle was set empirically by noting the general direction of ejection of contrast material. It differed in each catheter and in each opening. Furthermore, in each test, we adjusted the angle until we obtained a maximum pressure response. It was almost impossible to predict the exact direction of jet flow in each opening.

Because the catheter tip was firmly held in the test chamber, there was no “whipping” of the catheter tip. The main shaft of the catheter, which was not held tightly, however, showed whipping in each injection. Needless to say, this would not be the case in injection in vivo.

4. The manufacturer of the injector was Cordis.

5. We have not tested any gas-propelled injectors, such as the Gidlund or Ensco. L. M. Zatz, MD, of Stanford University School of Medicine was kind enough to suggest that the phenomenon of “peak pressure” was seen in a mechanical injector, such as the Cordis or Viamonte type, not in the gas-propelled injectors.

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Nephrotoxicity From Cephaloridine

To the Editor:—In the article by Drs. Himan and Wolinsky, “Nephrotoxicity Associated With the Use of Cephaloridine” (200:724, 1967), the following was reported: Klebsiella was isolated from the spumt of a patient with pneumonia; and was found to be susceptible to tetracycline, chloramphenicol,