

Literature Briefs

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Briefs were submitted by Drs. John Adriani, C. M. Ballinger, Peter P. Bosomworth, M. T. Clarke, H. S. Davis, Deryck Duncalf, J. E. Eckenhoff, Martin Helrich, G. Hohmann, J. J. Jacoby, F. C. McPartland, A. S. Paterson, R. E. Ponath, W. H. Ring, Norman Rosenbaum, H. S. Rottenstein, P. H. Sechzer, B. L. Vandermeer. Briefs appearing elsewhere in this issue are a part of this column.

EXTERNAL CARDIAC MASSAGE Patients treated for cardiac arrest over a two year period were classified according to the type resuscitative procedure employed: (1) closed-chest massage (2) open thoracotomy with massage, and (3) a combined closed and open massage. The survival rate in the operating room when the primary therapy was closed-chest massage was 90 per cent. However, when subsequent open-chest massage was required, this survival rate dropped to 35 per cent. The overall survival rate of patients treated in the operating room was 52 per cent. Three out of 19 patients treated outside of the operating room with closed-chest massage survived. (Cotlar, A. M., and others: *Increased Survival from Cardiac Arrest Since the Introduction of External Cardiac Massage, Dis. Chest* 44: 400 (Oct.) 1963.)

EXTERNAL CARDIAC MASSAGE Experiments were performed on 15 infant and child cadavers to determine the mechanism of liver rupture with closed-chest cardiac massage. Simultaneous compression of the chest and abdomen limiting the free movement of the liver accounted for its rupture. The ventricular surface of the heart underlies the middle third of the sternum in infants and young children and gradually descends during growth to a position behind the lower third of the sternum in adults. Compression experiments in 20 fresh, heparinized cadavers of infants and young children showed that effective circula-

tory pressures were produced by compression of the middle rather than the lower sternum. The technique of external cardiac compression suggested for infants and young children consisted of compression of the midsternum with superimposed thumbs while the fingers were linked behind the patient for additional support. (Thaler, M. M., and Stobie, G. H. C.: *An Improved Technic of External Cardiac Compression in Infants and Young Children, New Engl. J. Med.* 269: 606 (Sept. 19) 1963.)

CARDIAC MASSAGE Incidence of pulmonary bone marrow emboli was studied in routine autopsies of patients on whom closed-chest cardiac massage had been attempted before death. Eleven such patients were investigated. Pulmonary bone marrow emboli were found in 10 of the 11 patients with 9 of 11 having a free-fat pulmonary embolization. (Yanoff, M.: *Incidence of Bone-Marrow Embolism Due to Closed-Chest Cardiac Massage, New Engl. J. Med.* 269: 837 (Oct. 17) 1963.)

EXTERNAL CARDIAC MASSAGE Observations were reviewed on 50 consecutive autopsies of patients who died after external massage during a 10 month period when there were 14,527 hospital admissions. Pre-existing cardiac disorders had been present in 72 per cent of the patients before cardiac arrest. Injuries resulting from the massage were ribs 14, sternum 1, heart 12, liver 3 and spleen 1. Pulmonary bone marrow emboli were present in peripheral regions of the lungs in 6 cases. (Bynum, W. R., Connell, R. M., and Hawk, W. A.: *Causes of Death After External Cardiac Massage, Cleveland Clin. Quart.* 30: 147 (July) 1963.)

CARDIOVERSION The patient in complete heart block who presents himself for cardioversion presents a special problem to the anesthetist. When normal rhythm exists,