

MASSAGE COMPLICATIONS A case of liver laceration secondary to cardiac massage is reported. The patient was hospitalized for palpitation and angina pectoris. He suddenly stopped breathing two days after admission and closed chest cardiac massage was immediately begun and carried out vigorously for three or four minutes until the electrical external pacemaker could be applied. The resuscitation was not successful; the post-mortem examination revealed an extensive laceration of the liver with 1,000 ml. of blood in the peritoneal cavity. (*Morgan, R. R.: Laceration of Liver from Closed Chest Cardiac Massage, New Engl. J. Med. 265: 82 (July 13) 1961.*)

EXTERNAL CARDIAC MASSAGE

Eighty-four consecutive cases of external cardiac massage at the Massachusetts General Hospital were reviewed. The ultimate number of survivors was small (only 4 patients left the hospital). This poor success rate was attributed to the nature and extent of the disease and the selection of the patients. The procedure is generally successful in maintaining an effective circulation until additional equipment and personnel can be mobilized. Thirty-three per cent of these patients sustained rib fractures, 9 had hemothorax, 4 hemopericardium, 11 had liver injury, and 13 had marrow emboli. Thus 46 of the 84 patients had complications secondary to the external cardiac massage. (*Baringer, J. R., and others: External Cardiac Massage, New Engl. J. Med. 265: 62 (July 13) 1961.*)

BLOOD FLOW Infusion of norepinephrine into healthy volunteers caused a decrease in forearm blood flow. After one week of chlorothiazide administration norepinephrine infusion caused increases in forearm blood flow. Chlorothiazide decreases the responsiveness of forearm vessels in normal individuals to the vasoconstrictor action of norepinephrine and may also modify the effect of norepinephrine on cardiac output. (*Khalil, A. F., and others: Effects of Chlorothiazide on Forearm Vascular Responses to Norepinephrine, J. Appl. Physiol. 16: 549 (May) 1961.*)

GAS EMBOLISM When blood has been equilibrated with oxygen at 20 C. and is then warmed, the oxygen tension rises steadily until gas bubbles form. When gas tension surpasses hydrostatic pressure by 80 mm. of mercury, steady formation of bubbles occurs. Bilateral carotid perfusion of the head with blood at 36 C. which had been equilibrated with oxygen at 20 C. produced death in three of five dogs. (*Donald, D. E., and others: Physical Factors Relating to Gas Embolism in Blood, J. Thor. Cardio. Surg. 42: 110 (July) 1961.*)

HEPARIN NEUTRALIZATION Polybrene was used following extracorporeal circulation for neutralization of heparin. It was found to be superior to protamine because it does not cause hypotension even when injected rapidly and is more reliably constant. Slight overdosage is harmless. One milligram of heparin is antagonized by 1.2 mg. of polybrene. (*Hirsch, H. H., and others: Exact Neutralization of Heparin after Extracorporeal Circulation, Der Anaesthetist 10: 167 (June) 1961.*)

SHOCK AND ANURIA Shock was produced in 12 mongrel dogs by deliberate bleeding. Blood pressure was maintained between 40 and 50 mm. of mercury. Three dogs were bled only and served as controls. Three dogs were treated with normal saline, 0.6 molar sodium chloride, and 4.5 per cent urea in normal saline prior to and during bleeding. Nine animals received 0.6 molar solution of THAM either prior to, during, or after bleeding. Anuria and acidosis could not be prevented by the administration of normal saline, 0.6 molar sodium chloride, or 4.5 per cent solution of urea. THAM, however, prevented both the acidosis and the anuria of hemorrhagic shock if administered prior to and during bleeding. Once established, anuria can be relieved by the administration of THAM, and in fact, diuresis develops despite the continued hypovolemic hypotension. (*Goetz, R. H., Selmonosky, C. A., and State, D.: Anuria of Hypovolemic Shock Relieved by Tris (Hydroxymethyl) Aminomethane (THAM), Surg. Gynec. Obstet. 112: 724 (June) 1961.*)