

in *Polycythemia Vera*, *Ann. Intern. Med.* 60: 409 (Mar.) 1964.)

HYPERBARIC OXYGEN During compression, ear equilibration has been the most distressing problem which can be handled by slower compression schedules or by myringotomy with an 18 or 20 gauge needle. At maximum pressure, acute oxygen intoxication with confusion, twitching about the mouth, and gradual convulsions may occur unpredictably. It is controlled by removing the oxygen mask and is followed by no sequelae. It may occur in a patient who has been previously treated with no trouble and be subsequently treated with no recurrence. Repeated oxygen administration the same day may be accompanied by recurrent toxicity. The syndrome occurred in 5 per cent of patients treated at three atmospheres with 100 per cent oxygen. On decompression, the only danger is the bends which results from nitrogen leaving the tissues more rapidly than the circulation or lungs can accommodate. Most decompression tables are derived from compression experiences with normal healthy men. Poor ventilation, obesity and circulatory insufficiency will result in slower than normal nitrogen clearing. (Wallyn, R. J., and others: *Treatment of Anaerobic Infections with Hyperbaric Oxygen*, *Surg. Clin. N. Amer.* 44: 187 (Feb.) 1964.)

HEMOGLOBIN Mammalian hemoglobins are composed of two types of polypeptide chains, alpha and beta. The alpha and beta subunits have different oxygen equilibria and are affected differently by pH. The beta chains appear to play a major role in the mechanism of the Bohr effect not shared by the alpha chains. Structural changes in hemoglobin occur upon oxygenation. (Riggs, A.: *Relation Between Structure and Function in Hemoglobins*, *Canad. J. Biochem.* 42: 763 (May) 1964.)

BLOOD VOLUME Twenty-four hours after transfusion of 500 ml. of stored blood the most common finding is an increase of erythrocyte volume. Since in more than one-half of the patients this increase was greater than the amount of red cells given, the transfusion

is believed to cause outpouring of erythrocytes stored in body depots. Normovolemic patients do not show this increase in erythrocyte volume. If a 10 per cent increase in hemoglobin does not occur following transfusion of 500 ml. of blood in an average sized patient, the patient is either normovolemic or is actively bleeding. (Wense, G.: *Changes of the Blood Volume after Blood Transfusions*, *Der Anaesthetist* 13: 33 (Feb.) 1964.)

SINGULTUS Singultus is considerably more frequent during artificial ventilation than during spontaneous respiration. Arterial P_{CO_2} , pH and standard bicarbonate were determined in ten patients who developed singultus during abdominal and thoracic surgery under automatic ventilation. In all patients, there was a considerable, statistically significant decrease of P_{CO_2} and an increase of pH. Since ionization of calcium is considerably reduced in alkalosis neuromuscular irritability is increased, facilitating development of singultus. (Lutz, H.: *Intraoperative Singultus with Artificial Ventilation*, *Der Anaesthetist* 13: 82 (Mar.) 1964.)

LEG VOLUMES Volume studies on the leg below the knee were carried out on 12 supine normal subjects utilizing occlusion plethysmographic techniques in conjunction with tilting ranging from -20 degrees (head-down) to +45 degrees (head-up). Pressure/volume relationships were determined in the foot and calf under varying conditions of position and after the effects of temperature change, sympathetic interruption by nerve block and sympatholytic drugs, as well as increased constrictor tone brought about by blood loss. Postarteriolar foot vessels behave like smooth muscle tubes with a sympathetic innervation, while those within the deep fascial envelope of the calf behave like passive tubes with their volume adjustment determined by tone and activity of the surrounding skeletal muscle. The volume sequestered (more than 250 ml.) below the knees when the upright position is assumed is largely a function of the deep calf veins. (Ludbrook, J., and Loughlin, J.: *Regulation of Volume in Postarteriolar Vessels of the Lower Limb*, *Amer. Heart J.* 67: 493 (Apr.) 1964.)