

and the skin is warm and dry. The blood pressure sustains an initial drop of 10 to 20 mm. of mercury but soon approximates the normal level. 2. Robust patient.—Same as for the average patient. 3. Patient in shock.—The lid reflexes are absent. The eyeballs are fixed. The pupils are contracted and fixed. Respirations are depressed. Skin reflexes are absent. The masseter muscle is relaxed. Abdominal muscles probably are fairly relaxed. Laryngeal reflexes are depressed or absent. The color is probably slightly cyanotic and the skin is cold and perhaps moist. The blood pressure usually sustains a more drastic drop than in normal patients with a tendency to remain below the normal level. Combinations with other agents. 1. Average patient.—Same as for the robust patient. 2. Robust patient.—Since robust patients often require large doses of pentothal sodium to produce surgical anesthesia, combinations with local or regional methods of anesthesia are often of advantage. This reduces the amount of pentothal sodium necessary and permits more extensive operative procedures. 3. Patient in shock.—Because of the lessened tolerance of patients in shock to large doses of pentothal sodium it may be necessary to combine its use with another method. The combination of a local or regional procedure often will be of advantage in dealing with these patients in keeping the amount of pentothal sodium used to an absolute minimum, thereby preventing marked degrees of depression of respiration and blood pressure.

“Sulfonamide therapy and intravenous anesthesia. 1. Average patient.—There do not appear to be many contraindications to the use of intravenous anesthesia for patients undergoing sulfonamide therapy. 2. Robust patient.—Same as for the average patient. 3. Patient in shock.—Patients who are being treated with sulfona-

mides may be somewhat cyanotic in appearance. This may become especially marked when shock is present. While the administration of oxygen will not clear up this cyanosis effectively, its administration to these patients should be routine if possible. In dealing with a shocked patient who has been given large doses of sulfonamides, extra caution in the administration of pentothal sodium is indicated. . . . Quinine and atabrin therapy should be instituted preoperatively if the patient has a history of having had malaria, with or without previous treatment. Contraindications. 1. Average patient.—Contraindications consist chiefly of cardiac disease associated with dyspnea. 2. Robust patient.—Contraindications consist of operations about the head and neck or in the mouth or throat where mechanical obstruction of the respiratory passages may occur, in acute intestinal obstruction, and in major operations requiring perfect muscular relaxation. 3. Patient in shock.—Contraindications are the same as for average and for robust patients. However even if none of the contraindications mentioned under 1 or 2 is present, for patients in shock the method probably will be contraindicated unless equipment for maintaining the airway (Magill intratracheal tube) and for administering oxygen is available.” 6 references.

J. C. M. C.

HALLENDORF, L. C., AND WINNETT, E. B.: *Shockless Surgery with Refrigeration Anesthesia*. J. Iowa M. Soc. 34: 13-15 (Jan.) 1944.

“We have [done] . . . five cases of amputation with refrigeration anesthesia and for the most part they were very successful. One death occurred, which was caused by cerebral thrombosis that was probably coincidental and not related to the surgery. We have demonstrated to our satisfaction

that surgery with refrigeration anesthesia is an effective method in treating gangrene of the extremities in certain elderly, emaciated, poor-risk patients." 4 references .

J. C. M. C.

MASSIE, F. M.: *Amputation with Refrigeration Anesthesia*. South. M. J. 37: 1-6 (Jan.) 1944.

"The complete anesthesia resulting from refrigeration and asphyxia is due to the absence of all metabolic changes in the cells of the affected part. They rest in a state of 'suspended animation' or 'hibernation' and because no physico-chemical changes are possible in the cell under these conditions, the cell is unaffected by any stimulus. Thus the term 'protoplasmic anesthesia' is here quite properly applied. The technic of producing this anesthesia is now becoming standardized though still undergoing modifications. . . . In our

series [14 cases] . . . the mortality was 28.5 per cent. A few years ago in the same two hospitals our mortality over a 10-year period for all diabetic amputation was 75 per cent. . . . The method is not without its weak points; errors in technic will result in incomplete anesthesia and then some form of general anesthesia will have to be added when the patient has not been prepared for it. There is more than a possibility that the asphyxia and the prolonged cold after the operation may predispose the tissues to infection after the ice bags are removed and lower their resistance to its spread. Two of our patients developed gas gangrene in the stumps, one of whom died. . . . There is no shock during or following the amputation. . . . Traumatic cases reported by other observers point to a brilliant future for the application of cold to anemic and infected tissues." 9 references.

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