

middle-aged or older group and in those with decompensated hearts, because of the accompanying medullary, cerebral and cardiac hypoxia and tendency to thrombosis. It is combatted by the administration of oxygen. . . . The most important control, however, is in the use of the pressor drugs. In good risk patients a prophylactic dose of 25 to 50 mgm. of ephedrine injected intramuscularly before injecting the spinal anesthetic is usually sufficient to maintain the blood pressure at or near its usual level. If, however, the anesthesia is rather high, a fall of pressure may occur and must be met by further doses of ephedrine, if necessary, in small units of 10 to 15 mgms. intravenously.

"In poorer risks and older people, one must exercise special care to keep the blood pressure at or near its pre-anesthetic level. If the latter is high, one must not inject a prophylactic dose of ephedrine until he knows that the spinal needle is within the dura and that spinal fluid can be freely aspirated so that he is definitely ready to inject the anesthetic. He then should inject intramuscularly a dose of the pressor drug which he believes will be sufficient to prevent a significant blood pressure fall, and should wait five minutes before completing his spinal anesthetic procedure. . . . One should then be prepared to inject a small amount intravenously if the pressure starts to decline. . . . A most effective combination, and a favorite one with the writer, is a mixture of one mgm. of neosynephrin to 20 mgm. of ephedrine. . . . The above amount is a good average initial intramuscular dose. Each intravenous unit should not be more than one-fourth or one-fifth that much. Neosynephrin alone, in doses frequently spoken of, 5 mgms., for example, is dynamite and frequently sends the blood pressure skyrocketing one hundred and fifty points."

J. C. M. C.

CLARK, S. S.: *Spinal Anesthesia with Pontocaine*. Kentucky M. J. 41: 174-176 (May) 1943.

"Should the perfect anesthetic drug be discovered, it would certainly have the following attributes as well as many others. It should be a non toxic anesthetic substance which when introduced into the spinal canal would produce complete surgical anesthesia on the desired region without endangering the life of the patient. The level of anesthesia should be easy to control; the duration of anesthesia should be variable to suit the operation; the depressant effect should be minimal; and undesirable side effects should be absent. Among the anesthetic agents which have been used at the Louisville General Hospital, the one which satisfies most of these requirements is pontocaine. . . . The incidence of respiratory failure in the human seems to be the result of attempting to carry the anesthesia too high; and in not exercising the proper precautions in preventing gravitation when the patient is placed in the Trendelenburg position. . . . Our work has been done entirely by the Sise technique. . . . Clinically pontocaine is less toxic than other spinal anesthetic agents used at the Louisville General Hospital. . . . The average fall in blood pressure is 30% of the control level taken before anesthesia is induced. In contrast to other agents used this fall is not precipitous. . . . Either ephedrine 50 mgm. or neosynephrine 2.5 mgm. are quite satisfactory stimulants. In cases where shock seems impending due to trauma or loss of blood a combination of ephedrine 25 mgm. and pitressin ½ cc. seems to be superior to other stimulants. The nausea and vomiting which occur during laparotomy does not occur as frequently with pontocaine as with other anesthetic agents. . . . Only two cases of the 110 considered could be called failures, and in

both of these incomplete anesthesia was present."

J. C. M. C.

Mock, H. E., Jr.: *Refrigeration Anesthesia in Skin Grafting*. J. A. M. A. 122: 597-598 (June 26) 1943.

"Refrigeration anesthesia for skin grafting opens a new field for the use of reduced temperatures in surgery. In 27 cases requiring small or multiple small split thickness skin grafts this method was used. . . . Two hours before operation, one or more uncovered ice bags are applied directly to the area from which the skin is to be taken. The number of ice bags required depends entirely on the amount of skin to be anesthetized. Slight pressure deepens the anesthesia, so it has been our practice to tie or bandage the ice bags in place. . . . The maximum anesthetic effect lasts approximately twenty minutes after the ice bags have been removed. . . . During the course of rounds the procedure is done at the bedside or in the dressing room. . . . preoperative medication is not usually necessary but may be a helpful adjuvant. . . . Complete anesthesia was obtained in 24 of the 27 patients prepared by refrigeration. The 3 patients with incomplete anesthesia complained of a burning sensation when the graft was cut, but it was not sufficiently acute to necessitate another form of anesthesia. In each of these cases we were too hasty and did not allow a full two hours for chilling. Refrigeration does not noticeably affect the growth of the graft or the repair of the donor site." 3 references.

J. C. M. C.

NIXON, E. A.: *Amputation Anesthesia by Freezing*. Northwest. Med. 42: 131-133 (May) 1943.

"I have used freezing anesthesia in five thigh amputations for gangrene. These patients were poor risks, includ-

ing one case of Buerger's disease, three arteriosclerosis and one of diabetes. . . . The patient should be assured of a good sleep the night before surgery. The following morning nembutal, grains 1.5, is given one hour before applying the ice. A small dose of morphine or an H.M.C. No. 2 thirty minutes before icing is of definite value in getting better cooperation from the patient. . . . After sedation, several ice bags or collars are applied to the leg at or slightly above the proposed level of the tourniquet. The tissues are numb and application of the tourniquet is not painful. . . . I believe that a pneumatic tourniquet with a gauge is indispensable. From eight to twelve pounds of pressure is required for amputation through the thigh or leg. . . . The tourniquet must be placed at such a level as to permit freedom in handling the extremity and adequate space for surgical cleansing and draping. . . . A rubber sheet is placed under the extremity and the entire surface of the leg and thigh covered with about a two-inch thickness of ice. . . . A skin temperature of about 5° C. is optimum and does not result in actual freezing of the tissues. The time required varies somewhat, being about two and a half hours for a low or mid-thigh amputation, two hours for the upper third of the leg, and one and a half hours for the toes or a metatarsal amputation. . . .

"The patient is removed to the operating room with the extremity encased in ice. . . . The solutions and instruments should be cooled by immersing the basins in ice baths. Skin preparation and draping should be completed rapidly. . . . Bancroft, Fuller and Ruggiero have suggested a modification of the Callender operation with particular reference toward preserving the collateral superficial blood supply about the knee, and the production of a well padded stump adaptable to an artificial leg. . . .