

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.

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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. . . .