

ures the number of centimeters of solution entering the patient's vein per minute, the administration is simplified and controlled. The error factor by this method is less than  $\frac{1}{2}$  of 1 per cent. . . . No sensitivity to procaine has been found in over 2,000 infusions given for various conditions. In this series of traumas the youngest patient treated was seven years of age and the oldest was seventy-nine. . . . Most peripheral pain is bound to cause a reflex vasoconstriction in the same and also in other vascular areas. That vasospasm interferes with the normal healing process is well established. In the limited number of our fracture cases in which intravenous procaine was used, the early manifestations of increased mobility, relief of pain, evidence of early callus formation in some instances, as well as the obliteration of fracture lines, prompted us to investigate the healing process of fractures in experimental animals.

"Our first preliminary study in 40 rabbits whose femurs were fractured and the animals sacrificed at stated intervals has revealed no difference in the formation of osteoid tissue, calcification or callus formation. Twenty of these rabbits were treated as controls. Histologically there was no change in the soft structures at the site of trauma. Radiographic comparisons were not conclusive. Despite the discouraging experimental results further investigation along the above mentioned lines is the subject of our present study." 40 references.

J. C. M. C.

GRAY, T. C.: *The use of d-tubocurarine Chloride in Anaesthesia*. Ann. Roy. Coll. Surg. of England 1: 191-203 (Oct.) 1947.

"Curare is used in anaesthesia for four purposes: 1. To provide, using only very light anaesthesia, the muscular relaxation which is required for

abdominal surgery; 2. To facilitate, in a light plane of anaesthesia, control of the respiration during thoracic operations; 3. To ensure freedom from laryngeal spasm during any anaesthesia; 4. To potentiate the anaesthetic agents so that light anaesthesia can be maintained with only minimal quantities.

"The new conception of light anaesthesia and adequate curarisation to produce good operating conditions must always be borne in mind, for there is no more harmful combination than curare and deep anaesthesia. . . . The dosage which is employed varies from individual to individual. . . . After the initial dose small increments of d-tubocurarine are given as required. There is a cumulative effect, so that the subsequent doses are much smaller than the initial dose. . . . Tubocurarine is, I believe, a notable advance in our specialty, and one to which already very many patients are indebted for their lives, but it must never be forgotten that this is a very potent and dangerous drug and one having a profound and significant effect on the respiratory function. While the only two absolute contraindications to its use appear to be the presence of myasthenia gravis or organic respiratory obstruction, it should never be used by those who are not used to dealing with the apnoeic patient. The results which can be obtained fully justify the time spent in studying and gaining the special experience which is necessary." 18 references.

J. C. M. C.

GUTHRIE, DOUGLAS: *Centenary of Chloroform Anaesthesia*. Brit. M. J. 2: 701-703 (Nov. 1) 1947.

"Was not chloroform simply another anaesthetic? Yes, but it was more. Just as Lister discovered not carbolic acid but the antiseptic method, so did Simpson, eighteen years earlier,