

ting changes in the Resident staff. A careful rota was devised to enable all junior Resident Medical Officers to receive instruction in anaesthesia, but since the successful working of this plan demanded the cooperation of such medical officers by attendance in their spare time, it failed to achieve its object. . . . During the twelve months under review, 4,450 anaesthetics were administered by the members of the Department. . . . Under these 4,450 anaesthetics, only 2 patients died during the administration of, or while under the influence of, the drug used. In addition 4 patients died within twenty-four hours of receiving an anaesthetic. . . . Accurate figures for morbidity continue to elude us. . . .

"During the year we continued to record all relevant information during anaesthesia. A standard chart was evolved, accepted and printed and is now in routine use. . . . The commoner agents continue to be used. The number of administrations of chloroform has been further reduced, trichloroethylene having largely replaced it where the explosive hazard is present. . . . A small supply of Kemithal sodium enabled a trial of this drug to be made in 25 cases. Impressions are that it is less potent and therefore possibly less toxic than pentothal. . . . Intravenous ether was given to three patients, but not to the extent of inducing full surgical anaesthesia. . . . Curare, given intravenously, in the form of 'Intocostin,' as an adjunct to anaesthesia, proved disappointing, possibly because our small stock had deteriorated. . . . The wholesale use of local anaesthetics in casualty has not been included in this report, as it was in that of 1945. The local anaesthetic agents continue to occupy pride of place in our estimation, a fact easily justified by the post-operative followup of major surgical cases. Intrathecal anaesthesia is the standby in abdominal surgery, but the

use of caudal (sacral) anaesthesia supplemented by minimal doses of pentothal sodium has increased for herniorrhaphies and operations about the rectum and vagina. . . . Our efforts to supply an adequate analgesic service to the Obstetrics Department have not met with great success. . . . With persistence and the ability to show good results in many cases, we were able to persuade the physicians that stellate ganglion block is a procedure of great value in cerebro-vascular accidents. They are now becoming enthusiastic and have been eager to learn and apply the technic themselves. The use of paravertebral blocks in vascular diseases of the lower limbs is gaining increasing favour."

J. C. M. C.

GRAUBARD, D. J., AND RITTER, H. H.: *Intravenous Procaine in the Treatment of Trauma: A Preliminary Study*. *Am. J. Surg.* 74: 765-769 (Nov.) 1947.

"Pain and post-traumatic edema are perplexing problems for the surgeon. The osteoporosis associated with edema which appears at a later date is more troublesome. During the past year in an attempt to solve these problems we have given 303 intravenous procaine infusions to 140 patients suffering from trauma. Some of our results seem to indicate that procaine administered intravenously does lessen the edema and pain. For a time we were of the impression that the healing process was accelerated; however, the number of cases is too few to warrant any definite conclusion. . . . The dosage we have employed is the 'procaine unit':^{1,37} 4 mg. of procaine hydrochloride per kilo body weight dissolved in an isotonic saline solution to make a 0.1 per cent (1:1,000) solution to be administered in a twenty minute period. Using the flowroter, an instrument which meas-

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,