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 ½ 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,

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discover not only chloroform anaesthesia but an anaesthetic method. Anaesthesia became a science under Simpson's guidance. . . . Born at Bathgate, Linlithgowshire, in 1811, James Simpson was the son of a baker. . . . The family resolved that Jamie should have a good education. . . . An incident of his student days turned his attention to anaesthesia: it was during his attendance at an operation—and very little imagination is required to enable one to picture the horrors of surgery without anaesthesia and the agony endured by the central figure on the table. James Simpson's whole soul revolted at the sight as he left the Infirmary and sped towards Parliament House, resolved to exchange the profession of medicine for that of law. Success would have followed him there, or indeed anywhere. On second thoughts, however, he determined that he would try to relieve pain instead of running away from it. The opportunity was soon to come. It was John Thomson, the professor of pathology, whom he assisted; who suggested to Simpson that he might do well to specialize in obstetrics. . . .

"A few years later the chair of midwifery fell vacant. Simpson had set his heart on it, and he was well prepared. Many thought him too young, and on hearing this he determined that he would indeed be young. On an impulse he sat down and signed his application James Young Simpson. Appointed to the chair by the majority of a single vote, he now entered upon his duties with characteristic energy and enthusiasm. . . . When the news of the American discovery reached him, he told his brother that it was a 'glorious thought' and that he 'could think of naught else.' In January, 1847, he was the first to use ether in obstetric practice. . . . Dr. David Waldie, a Linlithgow lad who had become a chemist in Liverpool, thought that chloroform might be worth trying, and Simpson acknowledged this hint and acted upon it. . . .

"Simpson never claimed to have discovered chloroform, nor did he claim to be the first to use general anaesthesia. The substance chloroform was first produced about 1831 by Guthrie in America, Soubeiran in France, and Liebig in Germany, each chemist working independently of the others. . . . Simpson was, however, the first to demonstrate the anaesthetic properties of chloroform. . . . Lister wrote a most valuable paper on chloroform anaesthesia. . . . Lister's paper appeared in 1861. . . . Among those who promoted the safety of chloroform administration by new dosimetric methods was John Snow."

J. C. M. C.

HALL, J. E.: *Demerol for Analgesia in Obstetrics.* Brooklyn Hosp. J. **5**: 45–48 (Jan.) 1947.

"Demerol . . . produces both morphine-like and atropine-like effects upon the human. It has been used successfully in the Department of Obstetrics of Harvard Medical School and in the Boston Lying-in Hospital. The good results obtained in these institutions prompted the use of demerol in the author's private obstetrical cases at The Brooklyn Hospital. This report covers a period of nine months during which this drug was employed in 125 unselected and consecutive obstetrical cases. The number of primiparae and multiparae was about equal; there were 61 of the former and 64 of the latter. . . . The usual dose of demerol administered was 100 mg. given intramuscularly in conjunction with 0.00032 Gm. of scopolamine. . . .

"When the medication was given in proper amounts, satisfactory analgesia was obtained with practically no ill effects on the mothers. There was less depression of the babies' respiratory