

undue drop in blood pressure and no great respiratory difficulty. The length of time it can be made to last is sufficient for any surgical procedure without endangering the patient as one large dose of local anesthesia subdurally often does."

J. C. M. C.

EISENHART, C.; SIMPSON, R. A., AND GILLESPIE, N. A.: *Ether versus Cyclopropane (A Statistical Comparison of Circulatory Complications after Abdominal Operations)*. Brit. J. Anaesth. 18: 141-159 (July) 1943.

"By means of the punched card system an investigation was conducted into the incidence of circulatory complications during the period in the hospital following an operation performed with cyclopropane or ether. The cyclopropane series consisted of 257 cases of upper abdominal, and 1268 cases of lower abdominal interventions. In the case of ether, the corresponding figures were 435 and 531. The relation between pre-operative cardiovascular disease, physical state, the agent in use, and post-operative circulatory complications has been considered both for upper and lower abdominal operations. These figures have been subjected to statistical analysis. The relationship between the plane of anaesthesia and post-operative circulatory complications has been investigated in a similar manner. . . .

"In a healthy patient subjected to anaesthesia for an upper abdominal operation, the tendency to circulatory complications is greater after cyclopropane than after ether, and is more marked among patients suffering from disease of the circulatory system. The incidence of post-operative circulatory complications is higher after upper than after lower abdominal operations. The data suggest that, after operations

below the umbilicus, post-operative circulatory complications may be more liable to follow cyclopropane than ether anaesthesia, but the evidence is of insufficient strength to warrant this conclusion. With ether, the deeper the plane of anaesthesia, the greater the incidence of circulatory complications in the post-operative period. In the case of cyclopropane this statement is true of lower abdominal operations. It is probably also true of upper abdominal operations unless 'controlled respiration' is in use. The circulatory complications in the post-operative period, although of considerable importance, constitute only one of many factors which should be weighed when choosing the agent for use in any particular case. The facts enumerated above should be applied in practice with the judgment which only extensive clinical experience can give." 14 references.

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TAINTER, M. L.; TAINTER, E. G.; LAWRENCE, W. S.; NEURU, E. N.; LACKEY, R. W.; LUDUENA, F. P.; KIRTLAND, H. B., JR., AND GONZALEZ, R. I.: *Influence of Various Drugs on the Threshold for Electrical Convulsions*. J. Pharmacol. & Exper. Therap. 79: 42-54 (Sept.) 1943.

"An electrical device . . . was used for measuring the convulsive threshold of unanesthetized rabbits, using a high resistance stimulator and 60 cycle alternating current. . . . Barbitol compounds, dilantin, 3-methyl 5-5 phenyl ethyl hydantoin, and propazone raised the convulsive thresholds generally proportional to the dose. The barbitals showed surprisingly little difference in potency for equivalent doses. Propazone appeared to be the weakest of this group. Marked degrees of depression of excitability were produced by the hypnotic or anesthetic group of

drugs, namely, bromide, chloral, alcohol, propylene glycol, paraldehyde and avertin with amylen hydrate (tribromoethanol). Of the coal tar antipyretics, acetylsalicylic acid did not change the convulsive threshold, whereas acetophenetidin and acetanilid raised it, but only in very high doses. Morphine, in doses of 10 and 15 mgm. per kilo, did not change the threshold for the convulsive stimulus. The anaesthetic drugs strychnine, metrazol, coramine and caffeine were irregular in their effects, indicating a lack of specificity for this phase of cerebral function. On the other hand picrotoxin lowered the threshold to a considerable degree and in relatively low doses. Cocaine and mescaline raised the convulsive threshold moderately, indicating that these drugs depressed rather than stimulated cerebral function at this level. It is suggested that the psychic effects or hallucinations after the use of these drugs may be due to release of cortical inhibition. The sympathomimetic amines generally raised the convulsive threshold to a moderate degree. d-Benzedrine was more effective than dl-benzedrine, whereas l-benzedrine was almost completely inactive; d- and l-ephedrine produced practically no change even in very high doses. Propadrine depressed the excitability, although it is not commonly believed to have a pronounced action on the central nervous system. Tyramine, paredrine and epinephrine caused only inconsistent changes, but neosynephrine and cobefrine depressed the excitability in very high doses.

"The changes with the sympathomimetic amines did not agree well with their effects on the central nervous system as indicated by other methods or observations, and, therefore, leave some doubt as to the causal significance of the convulsive threshold changes for central stimulant effects of these amines. However, this conclusion can-

not be accepted without reservation until the possible role of the simultaneous circulatory changes is evaluated. Thyroxine lowered the threshold to epileptiform convulsions more than any of the other agents tested, the threshold being reduced from an average of 23 ma. in the control period to 15.7 ma. after 19 days of thyroxine medication. This reduction suggests a possible physiological basis for the impaired neuromuscular control and poise of clinical hyperthyroidism." references.

J. C. M.

MADAN, K. E.: *Reflex Cardiac Inhibition under General Anaesthesia*. Brit. J. Anaesth. 18: 129-131 (Jan. 1943).

"During an operation under general anaesthesia there may arise various conditions which can cause shock, and reflex cardiac inhibition. One of the causes which I have sometimes observed in my long experience and which has not so far been pointed out is the therapeutic use of ether by the surgeon, by pouring it into the abdominal cavity in tuberculous disease of the intestines. . . Ether is very cold, irritating, and lowers the local resistance of the tissues to infection, and in the most sensitive and rapidly absorbing serous sac it sometimes sets up a dangerous reflex sufficient to cause reflex cardiac inhibition. . . Death due to fibrillation and reflex cardiac inhibition. This may happen in spite of atropine given as premedication to lessen vagal irritability. . . Just as irrigation and the injection of antiseptics in the pleural cavity have been given up due to the shock it produces, so also the instillation of ether in the peritoneal cavity should be condemned, as it may prove dangerous as stated above."

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