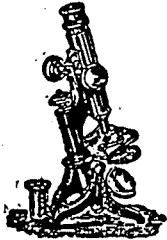


## Medical Matters.

### THE RELATIVE VALUE OF INHALATION AND INJECTION METHODS OF INDUCING ANÆSTHESIA.



The subject of inducing anæsthesia by the injection of drugs into the spinal cord is one which is at present receiving considerable attention and a paper read at the meeting of the British Medical Association at Exeter to open a discussion on the Relative Value of Inhalation and Injection

Methods of Inducing Anæsthesia, by Mr. H. P. Dean, M.S., F.R.C.S., which is published at length in the *British Medical Journal*, is of great interest. The speaker confined his remarks to the importance of anæsthesia by lumbar injection in operations for acute abdominal diseases. After referring to the success of many operations in which local anæsthesia has been produced by cocaine and B. eucaïne, with and without adrenalin, he said in part: "From two points of view, lumbar anæsthesia seems to be very satisfactory: (1) The degree of anæsthesia can with appropriate doses be rendered complete. (2) The large area amenable to this treatment—practically the whole body below the level of the umbilicus.

"There is, however, an objection to this method being employed as a routine practice on a large scale, namely, the poisonous and treacherous character of the drug hitherto used, namely cocaine." What is desirable is an "anæsthetic that would act upon the peripheral part of the nervous system in such a way that stimuli would be prevented passing from the field of operation upward to the vital centres—some drug that would paralyse all the afferent nerves passing from the region of operation.

"Of recent years several drugs have been shown to possess the property of paralysing the peripheral nerves without affecting the central nervous system directly, unless given in maximal doses. The first of these, cocaine, I have already mentioned. It has drawbacks which render it unsuitable for the group of serious cases which we are specially considering.

#### STOVAINÉ.

"Within the last two years a drug more suitable has been discovered by the French chemist, Fournéau. It is a chloro-hydrate of one of the amino-alcohols, and to it was given the name of 'stovaine.' This drug has been examined carefully, and numerous researches

carried out in physiological and chemical laboratories. It is much less poisonous than cocaine, and possesses other physiological differences. It is a vaso-dilator, and, instead of having the well-known depressing action of cocaine upon the heart, it seems rather to have a tonic effect; at any rate, the vascular system seems to escape most of the harmful effects produced by cocaine. When employing the lumbar method of injecting stovaine in serious operations I was profoundly impressed with the way in which the anæsthetic seemed to abolish, or, at any rate, largely to mitigate, the condition of surgical shock. In addition to stovaine, two other bodies have been used, namely, novocain and alypin; both of these, as well as stovaine, have been used with adrenalin. My own experience is confined to stovaine only, the preparation I have used as a rule being the following:—

Stovaine, 0.10 grammes.

Chloride of sodium, pure, 0.10 grammes.

Distilled water, to 1 c.cm.

Each bulb contains 1 c.cm. of the solution.

#### THE METHOD OF ADMINISTERING THE ANÆSTHETIC.

"With a rather small exploring needle the lumbar spinal cord is entered between two lumbar vertebræ, generally the third and fourth . . . Some authorities have stated that it is necessary to allow some of the cerebro-spinal fluid to escape before injecting the anæsthetic; they maintain that the anæsthetic diffuses with difficulty unless the pressure is relieved to a certain extent. One observer refers especially to this point, stating that until he took this precaution the anæsthesia was very uncertain, but that after letting out a syringe-ful or two of cerebro-spinal fluid he never failed to obtain the necessary amount of anæsthesia. There is another point of greater importance, in my opinion—namely, the question of sudden variation in the cerebro-spinal pressure producing effects in important regions, especially the bulb. . . . In all probability, the headache which is such a constant after effect of lumbar anæsthesia is due to an increase in the cerebro-spinal pressure induced by the inflammatory disturbance following the injection.

"As regards the kind of apparatus I prefer an exploring needle, which should be as sharp as possible. One can use a needle of smaller calibre than in the case of a trocar and cannula. Owing to a difference in the depth of the spinal cord in different people, I have had the needles made in three lengths. Messrs. Down Brothers have made for me a complete outfit, which packs into a small space, and is very

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