

I have been much interested in spinal analgesia and have seen a good deal of it in Paris, principally with Professor Tuffier, and with Professor Barker in the University College Hospital, London. In many cases, in fact, in nearly all cases, spinal analgesia given in the lower lumbar region, between the third and fourth vertebrae, as practised by Barker and Tuffier, is satisfactory as far as the analgesia goes. Barker has published three series of 100 cases each, 300 in all. He is now beginning his fourth series of 100 cases. In his first 300 cases there were no deaths attributable to the spinal analgesia, but he had to resort to general anaesthesia in 23 out of the 300 cases. Barker is extremely fair and impartial in the statement of his results and experience with spinal analgesia. When he reported his last 100 cases he went on to say that although there had been no deaths in his first 300 cases, yet, since he began his fourth series of 100, there had occurred two cases in which the spinal analgesia might be thought to have contributed to the death of the patient.

Dr. Chipman speaks favourably of the isotonic solution. That is a very important point. The isotonic solution naturally is more diffusable in the cerebro-spinal fluid and in that way might be expected to extend its influence over a larger section of the cord. It is, however, less controllable than the heavier solutions that would follow more nearly the laws of gravity. Barker's solution is heavier than the cerebro-spinal fluid, Chaput's solution is still heavier, and it can be demonstrated by the use of artificial tubes and coloured solutions that these heavier solutions are more controllable than the isotonic solutions, that is to say, they tend to remain in that part of the spinal canal where they are first placed, but by elevating the pelvis the solution may be made to ascend to a higher level and gain a higher level of analgesia. This can safely be extended to the lower border of the ribs; or by turning the patient on one side the nerves going to the right or left leg, as the case may be, may be influenced much more than those on the other side.

The only exception that I would take to Dr. Chipman's paper is when he says that lumbar anaesthesia is safe. Köhler reported at the last German Surgical Congress that he had collected 7784 cases of spinal analgesia with 12 deaths, or 1 in 648 cases. Now I do not think any anaesthetic can be called safe that is followed by that large percentage of mortality.

There is also the danger of permanent paraplegia. I am informed that there are three such cases in San Francisco, one in Brooklyn and one in London, England. In these cases the paraplegia is apparently permanent. Recently I had a fear that such a case would have to be reported from Montreal. A life saving operation was necessary for the