

only a larger dose was given. One c. cm. of the stronger strychnine solution which contains 1 mg. of strychnine sulphate was used to dissolve 10 cg. of stovaine, but the fluid bulk of the injection was, as before, 1 c. cm. The patient sat upright with his body strongly arched forward, and the needle was plunged straight inward between the spine of the last dorsal and first lumbar vertebrae. The needle hesitated at the ligaments but passed at once into the subarachnoid space. Cerebro-spinal fluid promptly appeared and was checked, and the injection was immediately administered. The patient was placed in a semi-recumbent position, the operation-field sterilised, and in ten minutes he was blindfolded and the operation begun. He complained scarcely at all. A retractor in the upper angle of the incision caused discomfort, and when the peritoneal sac was pulled down he spoke of epigastric pain. Forcible traction on the spermatic cord occasioned no suffering whatever. At the conclusion of the operation, however, the face was pale and there was some sweating.

Case III. A girl of 23. Tuberculous glands in the neck. A case this for the upper dorsal puncture and the smaller dosage, as in Case I.

The needle was introduced as before to the depth of three inches, aspirated frequently, moved inward and outward and from side to side, all with negative result. Presently the needle was completely withdrawn and re-inserted. Free hæmorrhage now occurred and repeated aspiration yielded only one syringeful of blood after another. Again the needle was withdrawn and a third time inserted—this time almost up to the very hilt. Bleeding again was troublesome and repeated aspiration only aggravated this. Inward and outward the needle moved in its search. The excursion of the movement within the spinal canal appeared to be at least an inch. Finally the needle was altogether withdrawn and the attempt at spinal anæsthesia abandoned.

Case IV. A man of 40. Interval appendix. Here the dorso-lumbar puncture was made and the larger dose given as in Case II. This time the desired space was reached at the first attempt and the resulting anæsthesia was quite satisfactory, though the patient began almost at once to complain of slight headache.

These four cases concluded the demonstration. I leave it to each one of you to draw his own conclusions. In my opinion the two cases of low puncture were sufficiently successful, while the two cases of upper dorsal puncture were distinctly painful failures. The cases were of course too few to warrant any generalisation, and yet they seemed to me to stand for an ordinary day's work, for even though in