

the patient. At this stage the progress of the head in its outward course was truly remarkable with as well preserved a perineum as she had. Then finally with full co-operation of the patient, I delivered the head over the perineum; by forcing the fingers of my right hand covered with a towel up into the rectum until I secured a leverage under the infant's chin through the recto-vaginal wall, and by placing my left hand on the occiput so as to restrain its progress. The experience of performing this manœuvre with the co-operation of a sane woman, rather than one wild from the second stage of anæsthesia, was to say the least a pleasant experience for me. The rest of the labour progressed normally with good contraction of the uterus. The infant weighed 8 lb. 4 oz. The second stage of labour had lasted about 25 minutes. It was possible to thoroughly examine the perineum and cervix for laceration without any discomfort. If there had been any they could have been repaired without any discomfort to the patient. The patient is very enthusiastic regarding this anæsthetic, not only because of the relief from pain but also because she has not experienced the feeling of exhaustion that occurred with her other labours.

I have used this anæsthesia in only one other obstetrical case. This case was one of an atonic uterus in an old primipara in which there had been premature rupture of the membranes. Here under caudal block a Barnes' bag was introduced, which was filled with 20 oz. of 1:3000 proflavin. Complete cervical dilatation was secured by interrupted traction on this for two hours, and the following head delivered with forceps. Mother and infant both living and well.

In performing the caudal block we follow the technique of Labat. When possible the patient is placed prone on the operating table. (In the obstetrical cases they lie on their side near the edge of the bed with their limbs drawn up.) The hips are elevated from 3 inches to 6 inches depending on the build of the patient. Tincture of iodine is applied from the gluteal cleft up over the sacral spines in an area 8 inches in diameter. This area is then suitably draped. The index finger is run down along the sacral spines towards the gluteal cleft. Just below the last sacral spine one comes on a depression, triangular shaped, of which the apex is the last sacral spine and the base is the line between two projecting bone processes called the sacral cornua. This is the sacral hiatus. Personally I find the sacral cornua more readily palpable than the last or fourth sacral spine. With two fingers of the left hand on the sacral cornua, with the right hand a little novocaine adrenalin solution is injected first intracutaneously, and then deeper into the depression with a fine needle. Then the needle used in making the spinal puncture with its stylet in position is passed slightly

upward of the vertical position through the skin into this depression. It passes through skin and a fibrous covering until it impinges upon bone. Then it is slightly, very slightly withdrawn, and the hand holding the needle is dropped a little toward the gluteal cleft, passing the needle upwards in the sacral canal. This should go readily to a distance of 6 cm. The stylet is withdrawn, and suction is added to assure one that the point of the needle is not in a blood-vessel, or has not entered the dural canal. If either has been punctured the needle is withdrawn slightly. 33 to 40 c.c. of 2 per cent. novocain with not more than 0.5 c.c. of adrenalin solution are injected. Personally I have found 20 c.c. quite efficient. Most of this solution is injected without moving the needle, and very slowly. The remainder is injected while withdrawing the needle. The injecting of the fluid requires practically no pressure. If pressure is required one is not in the canal, but in the fibro-muscular tissue external to the vertebræ. Complete anæsthesia is secured in 15 to 20 minutes.

Personal correspondence regarding my article in the *Indian Medical Gazette* for April 1930 on the technique of spinal anæsthesia, shows that in one point I have not made myself clear. The spinal puncture and introduction of the anæsthetic solution is done with the patient sitting on the operating table, much in the manner in which the tailor sits on the veranda. When the needle has been withdrawn, the patient is placed in any desired horizontal position on the table, just so that the head is not above the level of the rest of the body. In the case described in the April number of the *Gazette* an anæsthesia suitable for operation on the head was sought, and since more than twice the amount of novocain and spinal fluid were introduced, some effect on the circulation was feared and the patient was kept in a 15 degree Trendelenburg position. But since then we have performed eight operations on the head under this anæsthesia, and in one case used 0.30 gm. of novocain mixed with 8 c.c. of spinal fluid, and in no case have we been compelled, on account of the fall of blood pressure due to the anæsthesia, to place the patient in Trendelenburg. When one can use 0.30 gm. of novocain intra-durally with no apparent drop of blood pressure then 0.10 gm. of novocain, the amount necessary for anæsthesia below the belt, this must be as safe an anæsthetic as there is for general use.

Corrigendum.

We regret that the colour plate on the page opposite was inadvertently omitted from our issue for May 1930. It should have accompanied the article by Dr. L. E. Napier and Dr. C. R. Das Gupta on "A Clinical Study of Post-Kala-Azar Dermal Leishmaniasis" on pp. 249-256 of that number. It illustrates the erythema or butterfly rash described in p. 250, second column.--
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