

ABSTRACTS

Editorial Comment: A fixed style of presentation for this department of ANESTHESIOLOGY has purposely not been defined. It is the wish of the Editorial Board to provide our readers with the type of abstract they desire. Correspondence is invited offering suggestions in regard to the length of abstracts, character of them, and source of them. The Board will appreciate the cooperation of the membership of the Society in submitting abstracts of outstanding articles to be considered for publication.

MUSHIN, W. W. *Heavy Percaine Spinal Anaesthesia.* Brit. M. J. 1: 139-143 (Jan.) 1942.

The author believes that the technic of spinal analgesia with hyperbaric solutions is simpler and provides more reliable results than when hypobaric solutions are used. This paper is based upon a series of 420 cases. When a solution heavier than the cerebrospinal fluid is injected with the patient in the supine position, it tends to gravitate to the mid-thoracic region. If the patient is in the sitting position the solution falls in the theca and effects only the lowest sacral roots. If the supine position is maintained analgesia is automatically confined below the level of the sixth dorsal segment, and involves the posterior roots more than the anterior.

The analgesic agent used was a $\frac{1}{2000}$ solution of nupercaine in 6 per cent glucose. This has a specific gravity of 1.024, and was originally described by Silverton of Australia in 1934. The author defines four zones of analgesia commonly required for surgical interventions, and describes his technic for obtaining the appropriate analgesia.

(1) Perinaeal analgesia. One cubic centimetre of the solution is injected when the patient is in the sitting position. He remains sitting up for five minutes and is then allowed to recline with the head and shoulders elevated. Analgesia of all the sacral roots re-

sults. ("S1 to S3" in the text is doubtless a misprint for "S1 to S5.")

(2) Analgesia of the legs he defines as from the first lumbar to the second sacral segments. One and five-tenths cubic centimetres of the solution is injected into the theca with the patient lying in the lateral position with the spine horizontal. Where unilateral analgesia is required the injection is performed with the patient lying on the affected side. It proved difficult to obtain bilateral analgesia unless the volume of solution was increased to 2 cc. by the aspiration of cerebrospinal fluid. The patient is immediately turned into the supine position and the thighs are flexed on to the abdomen. This eliminates the lumbar curve of the spine.

(3) Lower abdominal analgesia is defined as from the seventh dorsal to the third lumbar segment. One and eight-tenths cubic centimetres of nupercaine solution is injected and the patient is immediately turned into the supine position, the table being inclined five degrees into the "Trendelenburg" position. The thighs are flexed on to the abdomen, and analgesia is usually complete in eight minutes.

(4) Upper abdominal analgesia. In 37 cases analgesia higher than the seventh dorsal segment was obtained by the injection of 2 cc. of the solution diluted to 3 cc. by the aspiration of

cerebrospinal fluid. The author does not recommend this practice, and deliberately omits a detailed description of it.

The author discusses fully the preparation of the patient, the details of lumbar puncture, and the management and observation of the patient during operation. He has used the synthetic vasopressor "Phedracin" (Ciba 2020), but believes that, to prevent a fall of blood-pressure, "faith should be placed in the 'Trendelenburg' position rather than in drugs." The administration of oxygen during operation is stressed: if oxygen is not available he recommends "mouth-to-mouth respiration" as a resuscitative measure. He agrees with the view that the drug becomes "fixed," and that within ten minutes of the injection the patient may safely be placed in the "Trendelenburg" position for operation.

In this series of cases the incidence of nausea during operation was 2.8 per cent, and that of retching 1 per cent. One case of circulatory collapse occurred, but it was probably due to a sudden change of position and the patient recovered at once. After operation the patients were encouraged to drink as much fluid as possible, but were not allowed to lift their heads from the pillow, nor to smoke. Six inch blocks were placed under the foot of the bed for six hours after operation. The incidence of postoperative headache in this series was 7.1 per cent; of atelectasis, 0.5 per cent (both cases occurred after upper abdominal operations, and this means an incidence of 5.4 per cent for these operations); and of residual patches of analgesia 2.1 per cent. Some of the latter persisted for two weeks. The author feels that this method is particularly suitable in patients of good physical condition and for the operations of haemorrhoidectomy and herniorrhaphy.

N. A. G.

WOLFF, E. C. AND STEWART, H. B.: *Clinical Conclusions on High Spinal Anesthesia*. South. M. J. 35: 274-280 (Mar.) 1942.

"This is an attempt to dispel some of the convictions and prejudices against high spinal anesthesia by clinical observations and experiences. Some of the remarks by necessity apply to spinal anesthesia generally. The term high spinal is used in this instance to apply to anesthesia for upper abdominal surgery. Also in very acute lower abdomens we have found that the best results are obtained with anesthesia well above the diaphragm. In lower surgery, where it is desired to explore the upper abdomen, high anesthesia is frequently indicated, for palpation of the upper abdominal viscera without anesthesia is a very shocking procedure. . . . A routine discussion of the anesthetic will lead into many unnecessary difficulties and frequently the patient feels that the burden of decision is his. We reserve persuasion only for those who have definitely said that they would not 'take a spinal block'. . . . Total spinal anesthesia has been produced clinically and experimentally since perhaps 1900. Fatal results are probably due to anoxemia or anemia of the vital centers rather than to direct action. This can be controlled under high spinal as long as there is cardiac activity. A second fear of high spinal is respiratory paralysis. If the anesthetist is aware of this impending complication it can be dealt with uneventfully by intermittent oxygen under gentle pressure. This has occurred in our experience and has never presented a distressing circumstance, even from the patient's viewpoint. There is so little change in the patient's condition and attitude that even the surgeon is usually unaware of this condition. Permanent neurologic damage is another frequent conviction of those who oppose spinal