THE VALUE OF LOW SPINAL BLOCK (LUMBO-SACRAL) ANALGESIA IN THE TREATMENT OF SHOCK ASSOCIATED WITH WOUNDS OF THE LOWER EXTREMITIES.

By MAJOR A. KERR BOYLE, M.D., D.A.,
Royal Army Medical Corps.

PAIN is an important factor in the initiation and maintenance of traumatic shock. The clinical value of morphine and allied alkaloids in this condition is well known. They exert their beneficial effects by their cerebral depressant action. They do not, however, stem the flow of nociceptive impulses from the traumatized area and the peripheral nerves are affected hardly at all. Spinal analgesia will definitely block these afferent stimuli. In wounds of the lower extremities associated with shock where there has been no great loss of fluid—blood or plasma—and where the pain factor is undoubtedly of great importance lumbo-sacral analgesia, achieved by the subarachnoid injection of a hyperbaric solution such as percaine heavy spinal solution, 1 : 200 percaine in hyperbaric 6 per cent glucose solution (Ciba), blocks all traumatic stimulation and improves the clinical condition of the patient. The fall of blood-pressure occasioned by lumbo-sacral analgesia is negligible, the rise of blood-pressure consequent upon interruption of pain impulses from the traumatized area is considerable. The subarachnoid block confined to the lumbo-sacral nerves should be undertaken at the earliest possible moment.

Preparatory local analgesia is carried out using 3 c.c. of a percaine-ephe-drine mixture containing one grain of ephedrine. The temperature of the percaine solution when injected intrathecally should be about 100°F. The dose required is never greater than 1.5 c.c. There are two apparent objections:

(1) The difficulty of performing lumbar puncture on patients with wounds of the lower extremities who cannot sit up. The sitting-up position is not absolutely necessary. The lateral position with the patient turned on to the side of the injured limb and his head flexed on his chest will suffice. A hypodermic injection of morphine (if this has not already been given) immediately on admission will make things comparatively easy within a short time. After the subarachnoid injection of the percaine solution the patient is placed on his back with one small pillow under his head. The Trendelenburg position is not adopted. The results obtained from the spinal block make a Trendelenburg position unnecessary as far as the shock is concerned. (2) The danger of infection. Provided there is no possibly or probably infected wound and no local sepsis in the region of the proposed lumbar puncture, i.e. between the spinous processes of the second and third lumbar vertebrae, provided the "anæsthetist" prepares himself as carefully as a surgeon does before operating, provided the "apparatus" required is
sterile and provided the patient's back is cleansed with spirit and painted with iodine before the lumbar puncture, the danger of introducing infection into the vertebral canal is, for all practical purposes, non-existent.

With heavy percaine lumbo-sacral analgesia the condition of patients with wounds of the lower extremities associated with shock with no great fluid loss is improved. Their preparation for operation can be effected with no delay and certainly with no further shock. Whatever surgical procedures are necessary can be carried out under the existing analgesia (which will last for at least ninety minutes) just as soon as the necessary preparation has been completed. When the operation is about to begin, 5 to 7 c.c. pentothal sodium, 5 per cent solution, intravenously will secure a safe and pleasant narcosis which will probably outlast the operation. If not, a further 3 to 5 c.c. pentothal sodium solution may be given into a vein when required. Damaged tissues can thus be dealt with in the shortest possible time and under the best operating conditions.

Where, in cases of wounding of the lower extremities, large losses of fluid have occurred before admission, the replacement of these losses with blood or plasma is necessary and should be effected before low spinal block analgesia is undertaken.

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