

EVANS, F. T.: *Sepsis and Asepsis in Spinal Analgesia*. Proc. Roy. Soc. Med. 39: 181-186 (Feb.) 1946.

"Spinal analgesia has its place in anaesthetics, and under certain conditions is the method of preference. Though meningitis has occurred on certain occasions following its use, let us remember that many, many thousand spinal anaesthetics have been given without incident. During the twenty years I have been at Bart's Hospital I have not known of any case of meningitis in that hospital following spinal anaesthesia. Similarly, during the ten years I have been at St. Mark's Hospital there has been no meningitis in 2,500 spinal anaesthetics. To condemn a useful and well-tried method because of a small proportion of unfortunate happenings in a vast total of cases is wrong. . . . A report has recently been issued through a committee appointed by the Medical Research Council with regard to the sterilization of syringes. . . . Sepsis can enter the spinal canal as a result of spinal puncture: (1) From the hands of the anaesthetist. (2) From the skin of the lumbar area. (3) From the imperfect sterilization of syringes and needles. (4) From contamination of needles and syringes, which may occur through: (a) Infection from imperfectly sterilized towels; (b) Infection from so-called sterile water or sterile distilled water; (c) Infection from the local anaesthetic solution—novocain; (d) Infection from the spinal drug. (5) Infection may also occur from haematoma due to repeated attempts at spinal puncture. . . .

"The wisest course is to scrub the hands with soap under running water, just as one would do for any other surgical operation. The hand should then be well rinsed in 95 per cent or 70 per cent spirit, preferably for two minutes, and be allowed to dry. If the spirit is not allowed to evaporate from the hands, they should be dried

with a sterile towel. Furthermore, I would recommend the use of sterile rubber gloves put on in the proper manner. . . . Obviously, no one would perform a spinal if the skin of the lumbar area were covered with acne or any infectious skin lesion. . . . The literature on skin sterilization is voluminous. Personally I like old friends, and I pin my faith to soap and water first, this being followed by tincture of iodine and then spirit. . . . The report from the committee appointed by the Medical Research Council, dealing with the sterilization of syringes recommended that syringes for spinal analgesia be all-glass. . . . This committee suggests that the best method of sterilization for needles and syringes is either by dry heat at 160 C. for one hour (the thermometer being near the syringes), or by autoclaving at 120 C. for twenty minutes at 15 to 20 lb. pressure. . . . The Medical Research Council Committee tells us that 90 per cent industrial spirit will kill organisms (according to their experiments) in twenty-two minutes, and that 75 to 75 per cent alcohol kills vegetative organisms in a much shorter time. . . . The spirit must be fresh. Apparently organisms are killed by spirit but not spores; hence the emphasis on fresh spirit. . . . The Medical Council state that if dry heat or autoclaving is not possible, then boiling for five minutes in water is reasonably safe. . . . The rinsing of spinal syringes with so-called sterile distilled water has caused several cases of meningitis. . . . If you must rinse your syringe and needles in sterile distilled water, take it from a new bottle which has been freshly sterilized. . . . Infection may occur from the anaesthetic solution—the procaine for local infiltration. . . . If novocain is to be used, I prefer it from an ampoule or freshly boiled that morning. . . . Lastly, the use of the spinal drug itself may be the source of

infection, but having seen the way the spinal drugs are prepared and the care taken in sterilization both of the ampoules and of the drug itself, the likelihood of contamination with organisms is very small indeed. . . . There is some evidence in favour of 'chemical meningitis,' but I would not overstress this. . . . With proper technique spinal anaesthesia is safe and is the method of choice for certain operations. The risk of infection is spinal analgesia, if performed in suitable surroundings and with adequate precautionary technique, is negligible. But if there is any deviation from this, then infection can occur, sometimes with disastrous consequences." 15 references.

J. C. M. C.

HUNTER, A. R.: *Spinal Anaesthesia; Variations in Dosage Required.* Lancet 1: 380-381 (Mar. 16) 1946.

"Last year I described a new volumetric technique of spinal anaesthesia based on the use of the minimal effective subarachnoid concentration of an anaesthetic. Further experience has shown that this quantity is not the same for all persons. However, the limits of the variation are not wide enough to invalidate the method, since it is a simple matter to forecast what dose of a drug will be required for any particular patient. . . . It is necessary to increase the dosage in youthful, athletic, and robust subjects, because much of the drug is lost by absorption into the blood-stream in these people before it can affect the nerve-roots in the subarachnoid space. As with all other techniques of spinal anaesthesia, adequate premedication is essential. A few apprehensive subjects require supplementary pentothal hypnosis, which is also given as a routine during major abdominal operations. The technique is applicable to spinal anaesthesia with stovaine and monocaine. The incidence of headache after spinal anaesthesia by

this method is independent of the drug used." 2 references.

J. C. M. C.

OLDHAM, JOHN: *Spinal Analgesia.* M. J. Australia 1: 432-435 (Mar. 30) 1946.

"This article has been written to present the technique used and the observations made in a series of 500 cases of spinal anaesthesia, and to offer some suggestions resulting from this experience. The cases occurred at an Australian military hospital from October 1, 1944, to November 1, 1945. The majority of subjects were in the twenty to forty years age group, and were mostly well-trained, healthy men. The anaesthetic agent used was a hyperbaric solution of 'Nupercaine,' that is, 1 in 200, or 'heavy solution.' . . . There were approximately forty cases of high spinal anaesthesia in the series, including anaesthesia for cholecystectomy, pyelolithotomy and nephrectomy. This type of anaesthesia is much more difficult to manage than low and mid-spinal anaesthesia, and requires constant full anaesthetic supervision at certain stages. . . . Low spinal anaesthesia comprises analgesia for the sacral area. . . . Mid-spinal analgesia is used for lower abdominal operations and lower limb operations, and also for operations such as that for hydrocele, in which tugging on the cord is necessary. . . . High spinal analgesia is used for the upper part of the abdomen—cholecystectomy et cetera; the cutaneous level of analgesia usually rises as high as the second dorsal vertebra. . . .

"For low spinal anaesthesia, puncture is carried out with the patient in a sitting posture in the 'attitude of prayer,' the elbows on the knees and the lower part of the spine well flexed. The needle is introduced between the third and fourth lumbar vertebrae, and the patient is laid supine after one-quarter of a minute to one minute. Op-