
"By an experimental method Bieter and his colleagues . . . have worked out the concentrations of various agents required to produce anaesthesia of the exposed spinal nerves of the rabbit. I have worked out by a process of trial and error the corresponding concentrations for the intact human subject. . . . The volume of the solutions of the various drugs employed will of course depend on the capacity of the spinal canal up to the level to which it is desired to produce anaesthesia. The published work on this subject proved rather contradictory, but again by trial and error it was found that 4 c.c.m. of solution would produce anaesthesia to dermatome L1; 8 c.c.m. to D10; and 12 c.c.m. to D6. These levels correspond approximately to Poupart’s ligament, the umbilicus, and the xiphisternum. . . . On the basis of these volumes and concentrations a dosage table was elaborated. . . . The drug of choice is amethocaine hydrochloride. . . . Onset of anaesthesia is rapid, taking rather less than 5 minutes. The duration of the anaesthesia is sufficient for nearly all major surgical procedures, amounting to some 3 hours. With ‘Nupercaine’ the onset of anaesthesia is rather slower and the prolongation obtained by using this agent is not of much significance since there are few operations which cannot be completed under amethocaine. When procaine is employed there is a significant lengthening of the period of anaesthesia from the usual 30–40 minutes to about 70 minutes. . . . Both volume and quantity of drug may be increased by up to 20% in tall or broad patients. When very high anaesthesia is required, as for gastrectomy or cholecystectomy, the volume should be increased to at least 14 c.c.m. and the dose of ametho-
caine to 14 mg. and of nupercaine to 10 mg. The volume of solution required for this technique is attained by drawing up the dose of amethocaine to be employed into a 10 or 20 c.c.m. syringe and then aspirating cerebrospinal fluid into the syringe to the required volume. Only hyperbaric solutions are used and consequently the diluted solutions will also be hyperbaric; in the case of low blocks this factor will limit spread. . . . Ephedrine should be injected as with any other type of spinal anaesthesia. This technique has been used for some 200 spinal anaesthetics. The results have been in every way satisfactory." 3 references.

J. C. M. C.


"Headache . . . is not a serious factor in spinal anaesthesia today. First one must avoid spinal anaesthesia in patients who are subject to violent headache, migraine, etc. . . . Individu-als who are fond of reading seem more prone to headaches. . . . The incidence of headache following operations with continuous spinal is no higher than operations following a single tap. . . . Aseptic meningitis . . . causes considerable worry for from 3 to 7 days but there is no record of any permanent neurological changes. . . . Hayman mentions paralysis of the sixth cranial nerve for some months with eventual recovery. This nerve is not a robust structure; it passes from under the lower border of the pons as it emerges from the brain to occupy the inner wall of the cavernous sinus, then continues through the sphenoidal fissure to supply the two heads of the external rectus muscle. During its course the nerve would be subject to any disturbance of cerebral dynamics. The paralysis of other cranial nerves must be rare. . . . I have followed appendec-
tomies, herniotomies, and haemor-
rhoideotomies under inhalation and
spinal anaesthesia and could never
persuade myself that the incidence
of catheterization postoperatively was
higher with spinal anaesthetic than
inhalation. . . . I know of three in-
stances where a latent brain tumour
was brought to operation following
operation under spinal anaesthesia. . .
"We have never had an infection of
the soft tissue or subarachnoid space
amongst some 8,000 spinal anaesthetics.
. . . It is a good rule to follow that pa-
tients with 'sore backs' . . . be given
some other than spinal anaesthetic for
their surgery. . . . Paralysis of the rec-
tum and bladder . . . is extremely rare.
. . . Anyone who does considerable
spinal anaesthesia will get a 'bloody
tap' occasionally, which looks discon-
ccerting but does not apparently cause
after trouble. . . . I have given a num-
ber of spinal anaesthetics following a
subarachnoid haemorrhage; the latter
condition was at least six months past.
There is no evidence that the spinal
anaesthetic changed the condition. . .
Statistically, the use of novocaine or
procaine has less recorded complica-
tions than drugs that have a longer
anaesthetic action." 8 references.
J. C. M. C.

Shortz, Gerald: The Management of
the "First Priority" Surgical Casual-
alty from the Anesthetic Viewpoint.
J. Indiana M. A. 38: 37-40 (Feb.)
1945.

"The management of the 'first pri-
ority' surgical casualty from the anes-
thesiologist's viewpoint presents one of
the most difficult problems in war medi-
cine. This type of casualty is defined
as a seriously wounded individual who
cannot be safely evacuated further to
the rear than the 'first priority' hos-
pital without surgery. . . . There is so
little recorded information on the man-
age of these casualties by anes-
thesiologists who have cared for them
that it appears worth while to record
some of our experiences which have
been gained as anesthetists on a gen-
eral surgical team of an auxiliary sur-
gical group functioning in medical in-
stallations of the Fifth Army. The
great majority of patients accepted for
'first priority' surgery in the most for-
ward installations are in the state of
severe shock. Obviously, it is neces-
sary to direct primary attention to-
ward correction of the shocked state.
. . . The problem of replacement ther-
apy has been a much-discussed subject
in this theater. In the past few months
we have been fortunate in havin g the
opportunity to work with a mobile
laboratory engaged in clinical investi-
gation of these problems and equipped
to give accurate and valuable informa-
tion concerning the status of the
elements of the circulatory system,
both preoperatively and postopera-
tively. With few exceptions the
severely-shocked patient, in which
hemorrhage has been the predominant
agent in production of shock, has had
a decreased plasma volume, hematoc-
rit, hemoglobin, and total blood vol-
ume. Prior to this information we
were working on a basis of one unit
of plasma to 500 cc. of citrated whole
blood. During the last series of 200
cases we have been using whole blood
liberally, averaging between 1,500 to
2,000 cc., and three units of dried
plasma per patient. . . . If evidence of
dehydration was present, 5 per cent
glucose in physiological saline solution
was administered after the blood pres-
sure was stabilized within approxi-
mately normal limits. The conven-
tional practice of hemorrhage control,
splinting, heat, minimal handling of
the patient, and placing the patient in
the shock position (providing the in-
jury permitted) was carried out. In
addition to preoperative shock ther-
apy, we routinely evacuate the gastric