

250 cc. separatory funnel and 2 cc. of a solution of crystalline sodium dihydrogen phosphate (1 gm. per cc.) were added. This mixture was thoroughly shaken and allowed to stand for at least 15 minutes. Four extractions were then carried out with technical ethyl ether as follows: 100, 50, 25 and 25 cc. The mixture was allowed to settle each time and then decanted into another 250 cc. separatory funnel. The color of the extract is yellow-brown and must be cleared by washing three times with 5 cc. of 0.5 M sodium bicarbonate, care being taken to allow for complete separation. The ether extract is now a very pale yellow color. It is filtered through ordinary filter paper into 500 cc. beakers and evaporated slowly over a water bath to approximately 35 cc. It is then transferred to 50 cc. volumetric flasks and made up to volume with ether. The results are read against a blank extract of normal blood. The blank is first read against ether and then adjusted to 100 per cent transmission by means of a vernier resistance in series with the galvanometer. The final reading must be multiplied by 2.5 to correct the dilution. The entire extraction is quite rapid and simple, but great care must be exercised to have absolutely clean glassware. In addition, the evaporation of the ether extract must be carried out slowly and not allowed to proceed too far toward dryness. Furthermore, as ordinary stop-cock grease will absorb ultraviolet light in the range used, it is necessary to employ a mixture of glycerol and bentonite, insoluble in both ether and water. . . . The method gives approximately 90 per cent recovery when tested against known amounts of pentothal added to blank blood." 4 references.

J. C. M. C.

LANCASTER, BLAKE: *Intravenous Anesthesia*. J. Florida M. A. 29: 477-479 (May) 1943.

"I have found intravenous anesthesia to be most pleasant and safe. It is admirably suited to minor work and is a marvelous adjunct to major surgery. It should be used carefully by experienced men in a hospital where adequate recovery time is available (about six hours), and respiratory stimulants and oxygen are at hand."

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KNIGHT, R. T.: *Spinal Anesthesia—Important Principles*. Minnesota Med. 26: 346-348 (Apr.) 1943.

"Trauma to nerve roots and spinal cord can be best avoided by making a perfect mid-line puncture. . . . The needle, after being tested, should then be handled without bending and inserted horizontally, and as slowly as it is possible to make anything move, until its point passes through the resistance of the ligamentum flavum and then of the dura. . . . The recognized strengths of the solutions of the various drugs, as they exist in the syringe before injection, and above which one cannot raise them without danger, are as follows: procaine, 5 per cent; metylocaine, 5 per cent; pontocaine, 0.5 per cent (1-200); nupercaine, 1-1500. I do not believe one is justified in ever increasing these strengths. . . . Lundy has for years advocated the injection at the rate of 0.5 cc. per second, and this method has proven very satisfactory in the hands of all who have used it. Undoubtedly a considerably faster rate can be used with safety. Control of the height of anesthesia . . . is managed by varying the site of injection, the amount of solution injected, the specific gravity of the solution and the position of the patient after injection. . . . Considerable fall in blood pressure is dangerous, especially in the

middle-aged or older group and in those with decompensated hearts, because of the accompanying medullary, cerebral and cardiac hypoxia and tendency to thrombosis. It is combatted by the administration of oxygen. . . . The most important control, however, is in the use of the pressor drugs. In good risk patients a prophylactic dose of 25 to 50 mgm. of ephedrine injected intramuscularly before injecting the spinal anesthetic is usually sufficient to maintain the blood pressure at or near its usual level. If, however, the anesthesia is rather high, a fall of pressure may occur and must be met by further doses of ephedrine, if necessary, in small units of 10 to 15 mgms. intravenously.

"In poorer risks and older people, one must exercise special care to keep the blood pressure at or near its pre-anesthetic level. If the latter is high, one must not inject a prophylactic dose of ephedrine until he knows that the spinal needle is within the dura and that spinal fluid can be freely aspirated so that he is definitely ready to inject the anesthetic. He then should inject intramuscularly a dose of the pressor drug which he believes will be sufficient to prevent a significant blood pressure fall, and should wait five minutes before completing his spinal anesthetic procedure. . . . One should then be prepared to inject a small amount intravenously if the pressure starts to decline. . . . A most effective combination, and a favorite one with the writer, is a mixture of one mgm. of neosynephrin to 20 mgm. of ephedrine. . . . The above amount is a good average initial intramuscular dose. Each intravenous unit should not be more than one-fourth or one-fifth that much. Neosynephrin alone, in doses frequently spoken of, 5 mgms., for example, is dynamite and frequently sends the blood pressure skyrocketing one hundred and fifty points."

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CLARK, S. S.: *Spinal Anesthesia with Pontocaine*. Kentucky M. J. 41: 174-176 (May) 1943.

"Should the perfect anesthetic drug be discovered, it would certainly have the following attributes as well as many others. It should be a non toxic anesthetic substance which when introduced into the spinal canal would produce complete surgical anesthesia on the desired region without endangering the life of the patient. The level of anesthesia should be easy to control; the duration of anesthesia should be variable to suit the operation; the depressant effect should be minimal; and undesirable side effects should be absent. Among the anesthetic agents which have been used at the Louisville General Hospital, the one which satisfies most of these requirements is pontocaine. . . . The incidence of respiratory failure in the human seems to be the result of attempting to carry the anesthesia too high; and in not exercising the proper precautions in preventing gravitation when the patient is placed in the Trendelenburg position. . . . Our work has been done entirely by the Sise technique. . . . Clinically pontocaine is less toxic than other spinal anesthetic agents used at the Louisville General Hospital. . . . The average fall in blood pressure is 30% of the control level taken before anesthesia is induced. In contrast to other agents used this fall is not precipitous. . . . Either ephedrine 50 mgm. or neosynephrine 2.5 mgm. are quite satisfactory stimulants. In cases where shock seems impending due to trauma or loss of blood a combination of ephedrine 25 mgm. and pitressin 1/2 cc. seems to be superior to other stimulants. The nausea and vomiting which occur during laparotomy does not occur as frequently with pontocaine as with other anesthetic agents. . . . Only two cases of the 110 considered could be called failures, and in