BLUSGER, I. N., AND DIXON, J. H.: *Pentothal Sodium Anaesthesia for Cystoscopy.* Lancet 1: 111 (Jan. 23) 1943.

Although only 55 cystoscopies have so far been performed, using the method of anaesthesia described here, success of the method in all cases seems to warrant publication at this stage. The investigation was primarily conducted with a view to finding a method of anaesthesia suitable for outpatient cystoscopy. . . . In 6 c. cm. of distilled water 0.5 g. of "Pentothal Sodium" is dissolved. The patient and instruments are prepared so that the cystoscope can be passed as soon as anaesthesia is obtained, and 4 c. cm. of the solution (0.3 g. of pentothal) is injected intravenously as rapidly as possible through a no. 14 SWG needle. Needle and syringe are left in situ and the patient is asked to count; when consciousness is lost a few seconds are allowed to elapse before the cystoscope is passed. The average time taken to lose consciousness was 18 sec. from the beginning of the injection. If the patient was not completely unconscious by this time we administered the remaining 2 c. cm. of the solution, but this was rarely necessary for simple cystoscopy. Where retrograde catheterisation of the ureters was to be carried out 0.3 g. was given, the cystoscope was passed and a further 0.2 g. was injected two minutes later, as rapidly as before. . . . Full recovery was invariable within an hour, although at the end of this time some patients still complained of slight muzziness."

J. C. M. C.

SOPER, R. L.: *New Method of Administering Pentothal Sodium for a Long Period.* Lancet 1: 235–236 (Feb. 20) 1943.

"The principle employed here makes use of ordinary saline-drip technique, with gravity feed, the pentothal being added by means of a syringe through a branch tube. A standard commercial intravenous saline apparatus has been employed, modified as necessary, and a dye added to the pentothal so that its presence in the apparatus can be checked visually. . . . Some 3 in. from the glass connexion between the intravenous needle and rubber tubing the tubing is cut and a glass Y piece introduced; one limb going to the saline drip, while the other is connected to a syringe containing the pentothal. The tail of the Y is attached to the glass tube carrying the intravenous needle. The syringe is fitted with a hypodermic needle; pushed over the shaft of the needle is a length of fine rubber catheter or stitch tubing, or if these are not available a length of ureteric catheter, which passes through the Y piece . . . and ends half way down the glass tube attached to the intravenous needle. The whole is rendered watertight by attaching a piece of rubber tubing to the limb of the Y piece and stretching the other end over the butt of the needle. . . .

"By employing the fine tube as a channel for the pentothal, dead space is greatly reduced and the bulk of the solution remains under perfect control in the syringe. The mixture of pentothal solution with the saline takes place where it can be observed—in the glass tube attached to the needle. To make this obvious 1 c. cm. of a solution of indigo carmine, such as is used for renal investigation, is added to each 20 c. cm. of pentothal solution. . . . Intermittent dosage is to be preferred to continuous administration of a weak solution."

J. C. M. C.

JOHNS, W. S.: *Intravenous Anaesthesia.* Canad. M. A. J. 48: 222–228 (Mar.) 1943.

"Along with serial spinal anaesthesia and the introduction of cyclo-

propane as a general anaesthetic agent probably no other form of anaesthesia has made such rapid strides in the past decade as has intravenous anaesthesia. . . . [For] premedication at the Calgary Associate Clinic we have been using a combination of morphine and atropine, and if the patient tends to be apprehensive, a small dose of nembutal. . . . I still prefer and use a 5% solution [of pentothal sodium]. . . . Any good vein is satisfactory as long as no varicosities exist above the site of injection which might lead to stagnation of the drug and its sudden release into the circulatory system. . . . In solution the drug is administered either by (a) The direct syringe method. . . . (b) By the use of an intravenous drip method and a two-way stopcock on the needle. . . . (c) Occasionally, where the operative procedure is of lung duration the anaesthetist may wish to supplement the anaesthesia by nitrous oxide and oxygen. . . . By connecting the syringe containing sodium pentothal to a length of small calibre stiff rubber tubing and filling this with the solution of the drug [the administration can be controlled with one hand]. This, in turn, is connected to the intravenous needle which is inserted into an arm vein against the blood flow. The syringe consequently can be strapped with adhesive in a convenient position at the head of the table and from here the anaesthetist may administer the solution and at the same time attend to the needs of the patient's airway or administer oxygen or one of the gases. . . . There are no definite age-limits. . . .

"Assuming that venipuncture is possible and a good airway can be obtained . . . there are several other contraindications. . . . The presence of fluid in the lungs from any cause should be considered a definite contraindication. . . . Marked hypotension is a definite contraindication to the use of the drug. Similarly, marked hypertension ought to be considered a contraindication, but here the anaesthetist's judgment should play a large part. . . . Shock . . . is a definite contraindication. . . . Whether the presence of liver or kidney disease is a contraindication has been a debatable point. . . . [Sodium pentothal] is contraindicated in the presence of severe anaemias whether they be primary or secondary. . . . Many authorities state that the drug should not be given to any patient receiving any of the sulfonamides, as these drugs link up, along with the sodium pentothal, with the haemoglobin, so reducing the oxygen-carrying capacity of the blood. . . . Complications of intravenous anaesthesia [are] (a) Phlebitis or periphlebitis. . . . (b) Hiccoughs, cough, muscular tremors, sneezing. . . . (c) Mucous and pulmonary oedema. . . . This complication is more apt to occur when overdosage of the drug is given. The administration of atropine preoperatively lessens the possibility of this developing. The treatment consists of withholding the drug and the use of suction and oxygen, also respiratory stimulants. . . . (d) Overdosage of the drug aside from the production of mucous or pulmonary oedema leads first of all to respiratory depression, followed by cessation of respiration and the development of cyanosis. . . . (e) If sodium pentothal is given inadvertently to a patient with hepatic damage narcosis is usually prolonged. Respiratory stimulants may be indicated. . . .

"Uses of intravenous anaesthetic [are]. . . . 1. . . . For short operative procedures. . . . 2. Where an electric cautery is to be used in the operative procedure. 3. To induce anaesthesia, especially in elderly people, in the presence of hypertension or where there has not been time to give adequate premedication to the patient. I have done, with very encouraging results, several cases of Caesarean sec-

tion. . . . 4. As a supplement to the other anaesthetic agents. . . . 5. . . . It would seem to be one of the safer anaesthetic agents to use in cases of diabetes mellitus. . . . 6. Miller and Tovell point out the value of sodium pentothal in the estimation of the prognosis of neurosurgical intervention for the relief of symptoms of Raynaud's disease or essential hypertension. . . . 7. Therapeutic anaesthesia in psychotherapy . . . is probably one of the newer uses of intravenous anaesthesia particularly in relation to sodium pentothal. . . . 8. Control of convulsions. . . . 9. . . . Where analgesia only is desired, without the production of unconsciousness such as where local or spinal anaesthesia is waning or where the patient is apprehensive, morphine sulphate by vein serves a very useful purpose. . . . Morphia by vein is also very useful, both preoperatively and postoperatively, in cases of toxic hyperthyroidism. Sodium pentothal also is valuable in these cases." 11 references.

J. C. M. C.

HEWER, C. L.: *Trichlorethylene.* M. Press **208**: 395–397 (Dec. 16) 1942.

"Trichlorethylene stands a better chance than most drugs of being judged on its intrinsic merits and demerits, as it is stable, cheap, easily prepared, non-inflammable and can be used with existing apparatus or with an extremely simple vaporizer."

J. C. M. C.

MARSTON, A. D.: *Two Clinical Cases and a Description of Trichlorethylene.* Guy's Hosp. Gaz. **57**: 30–33 (Feb. 6) 1943.

"In two recent cases routine anaesthesia was deemed unsuitable. One was a man of eighty with an acute abdomen, and the other was an infant of twenty days requiring circumcision. . . .

"Case I.—Male, aged eighty years. History.—A few hours before operation he was seized with sudden abdominal pain and suffered a certain degree of collapse. . . . He was given omnopon, gr. ½, to relieve pain, and was prepared for laparotomy. . . . Atropine, gr. $\frac{1}{100}$ was given, and induction was carried out with nitrous oxide gas and oxygen. . . . As an adjuvant, trilene was added, and then a little ether to a mixture of nitrous oxide 50 per cent and oxygen 50 per cent, thus securing adequate oxygenation and muscular relaxation. . . . The patient stood the operation well and made an excellent recovery. Some ten days later, however, a fresh abdominal crisis occurred and he succumbed to a fatal collapse.

"Case II.—Infant, aged twenty days, breast-fed and in perfect physical condition. As the operation was timed for 9 a.m., the usual feed was given at 6 a.m., atropine, gr. $\frac{1}{200}$, being injected subcutaneously at 8:30 a.m. . . . An open mask was used with a single layer of flannel, and chloroform was given in slow drips during the first minute, after which ether was dropped on until the light plane of the third stage was gradually reached. A small airway was then introduced, the mask removed, and a gentle stream of oxygen and warm ether given. The whole face was under constant observation, and only small amounts of ether were used during the sixteen minutes which the operation took to complete. . . .

"Trichlorethylene is a colourless fluid with an odour similar to but less pungent than chloroform, and is not very volatile, having a boiling point of 87 deg. C. and a specific gravity of 1.47 at 15 deg. C. The drug is liable to decompose if exposed to strong sunlight and should, therefore, be stored in amber-coloured bottles. This tendency to decompose is reduced if 0.01 per cent. thymol is added. The