ANAESTHESIA IN GENERAL PRACTICE

This is one of a series of articles, contributed by invitation

CHOICE OF ANAESTHETIC IN GENERAL PRACTICE

BY

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The choice of anaesthetic in general practice does not, of course, differ in essentials from the similar problem in hospital, and the main guides must be the nature of the operation, the idiosyncrasies of the patient, and the skill and individual preferences of the administrator. There are, however, certain difficulties, specific to general practice, which make some of the newer methods impracticable for the family doctor. The general nature of his work, which makes him a man who is expected to know something about everything, makes it impossible for him to know everything about any subject, and the mastery of a special technique may require more study, time, and experience than he is able to spare. He may not give an anaesthetic for several weeks on end, and then be called upon to give a series; at least 60 per cent. of his cases will consist of dental gases and minor operations, while 50 per cent. of the remainder will be emergency cases in which there are so many other details to arrange (it is not unusual for the doubtful acute abdomen and the surgeon to arrive at the nursing home together) that there is very little time for complications of anaesthetic technique.

Time is an all-important factor, because a day is not, unfortunately, infinitely elastic, and the one or two hours required for an operation can perhaps only be done by leaving undone something which ought to have been done; any technique, therefore, which necessitates prolonged preparation, visiting at a specified time beforehand, or an extension of operative time must be considered not only in relation to the patient but with regard to the needs of other sick people.

The general practitioner's close personal relationship to his patient makes it essential that he shall not use methods too experimental, too dangerous, or too unusual, while the peripatetic nature of his work makes portability a consideration. He lacks adequate storage space, so that bulk is undesirable, and his chronic lack of skilled assistance makes it important that the apparatus should not require elaborate upkeep; rust, the perishability of rubber, the insidious passage of time, and the limited space at his disposal make it necessary to exercise a rigorous economy over the apparatus he has to maintain. His ideal anaesthetic, therefore, should be 100 per cent. safe; easily portable; not so complicated that it takes time to assemble or requires prolonged pre-operative attention; not liable to be found out of order after three or four months' disuse; neither taking up too much room, nor requiring stores of spare parts, nor liable to run out in the middle of an operation; not too expensive, and as pleasant as possible to the patient. Bearing these considerations in mind, the actual choice of anaesthetic may be discussed under the headings: (1) local anaesthesia; and (2) general anaesthesia—non-inhalational and inhalational.

Local Anaesthesia

Local anaesthesia would appear to offer many advantages: the difficulty of obtaining a second doctor on, say,

a fine Sunday makes any method which would enable one to operate single-handed in an emergency worthy of consideration.

Superficial local anaesthesia is achieved by spraying or plugging with the chosen solution, or by freezing. The former method is applied chiefly to the mucous membranes: it is the anaesthetic of choice in most ophthalmic operations, except glaucoma and excision, and in most nasal operations. It is possible in a fairly stoical adult to perform a myringotomy under 20 per cent. cocaine and adrenaline, while the application of novocain to a cut surface makes suturing almost painless if a fine needle is used. Anaesthesia from freezing is of so short a duration that it is only available for a limited number of operations, such as the incision of superficial abscesses.

Injections of novocain or allied substances have the advantages that the anaesthesia is of a longer duration than gas or ethyl chloride in minor operations, no second doctor is required, there are none of the pre- or post-operative problems connected with the unconscious patient, there is greater safety, and the addition of adrenaline makes the field of operation relatively bloodless. On the other hand there are certain disadvantages. Neurotic, frightened, or hysterical patients, and young children do not react well to the thought of consciousness during an operation; a considerable number of people show more or less serious idiosyncrasies; sepsis, which constitutes the greater part of the minor surgery of general practice, is a definite contraindication; and the range of anaesthesia is rather limited unless the drugs are used in great bulk (which presents problems of sterilization and skilled assistance) and by regional infiltration of the nerves supplying the part, which demands specialized anatomical knowledge which, to quote the national health insurance regulations, "general practitioners as a class cannot be expected to possess." The principal value of regional anaesthesia is in affections of the terminal phalanges (paronychia, whitlow, foreign body, etc.); the digital nerves can easily be blocked by 2 per cent. novocain injected at either side of the first phalanx at the level of the web between the fingers.

Böhler's method of reducing fractures by the injection of 20 to 40 c.cm. of 2 per cent. novocain into the haematoma is very tempting, but the difficulties of exact localization of the fracture and of sterilizing and keeping sterile such a large quantity of solution without a trained and skilled assistant are very great.

Spinal anaesthesia presents enormous difficulties to the occasional anaesthetist, who has so few opportunities of practising its technique, and should, in my opinion, be left entirely to the specialist.

Non-inhalational General Anaesthesia

Non-inhalational general anaesthesia may be administered rectally or intravenously. Rectal administration is, without question, one of the pleasantest ways of inducing narcosis; the drug can be given as a simple enema to an unknowing patient, who falls asleep and wakes up many hours later without any consciousness of having been operated upon. The method cannot be used in diseases of the rectum or anus, and may set up an acute colitis.

Avertin, the drug most commonly used, appears to come in safety between chloroform and ether. In doses guaranteed to produce surgical anaesthesia it is more dangerous, and it frequently, therefore, requires additional inhalation anaesthesia. The apparatus is bulky, breakable, and awkward to pack; it requires elaborate and somewhat complicated calculations of dosage, takes up a full hour of pre-operative time, and the patient requires four to twenty-four hours of close post-operative attention. It must be heated to 37° C. and not over 40° C., cannot be prepared more than an hour before the operation, nor, under general practice conditions, can its administration be left to an assistant: in short, it is an invaluable weapon in the hands of a specialist and a very dangerous one in those of the family doctor.

Intravenous anaesthesia is dramatically quick in onset; there is no mask or feeling of suffocation, and post-operative gastric and pulmonary complications are rare. Veins are hard to find in children, the fat, and shocked or exsanguinated cases, and the duration of both surgical anaesthesia and post-operative coma are very variable. Nembutal has been extensively used, but hardly seems safe enough for the family doctor. One drug, however—evipan sodium—is to the general practitioner what avertin is to the specialist. Used in the doses recommended for minor operations, when 10 c.cm. is rarely exceeded, this drug is almost 100 per cent. safe; its efficiency is only limited by the difficulties of intravenous medication; it is very pleasant to take, keeps well, and requires very little pre-operative time. The apparatus required is:

10 c.cm. syringe, kept sterile in ether.

Two intravenous needles, kept sterile in ether.

Package of evipan containing ampoules of the drug and distilled water.

A file.

A rubber catheter or tourniquet.

A small dressing, two swabs, a bandage.

A mouth prop or gag.

The ether can be used to sterilize the skin, and the needles will not rust as they do if kept in spirit.

The freshly made solution of the drug is injected slowly into the vein while the patient counts: when he stops the amount given is noted, and as much again is inserted.

Evipan produces an ideal anaesthesia for many of the minor operations of general practice, such as dental extractions, fractures, acute septic infections, etc., because the patient has one to two hours' post-operative sleep, which is very valuable in these painful conditions. There is often, however, a period of semi-intoxication, which makes the drug entirely unsuited for use in the consulting room or dentist's surgery.

Inhalational Anaesthesia

It will appear from the foregoing remarks that some kind of inhalational anaesthesia will be the general practitioner's choice in most cases, and the decision will rest between gas and ethyl chloride for short operations, and between gas and oxygen, chloroform, and ether for the more prolonged ones.

The advantages and disadvantages of nitrous oxide are too well known to need any discussion, but many do not realize the value of ethyl chloride for the minor operations of general practice. It is easily portable, gives an anaesthesia lasting about twice as long as that from a single dose of nitrous oxide, is so rapid in action that difficult patients such as struggling children are anaesthetized in

a couple of breaths, and recovery is sufficiently rapid to make it suitable for consulting-room use. The most diverse opinions are held about its safety, but American authorities put the mortality at about 1 in 13,365 cases. It may be given on an open mask, when the dosage is difficult to control, but I prefer to give from 3 to 5 c.cm. in a closed bag. The face-piece is slowly approximated to the face while the child counts or talks, and anaesthesia usually supervenes without any struggling or distress. When the breathing becomes stertorous the face-piece is removed and the operation performed. Ethyl chloride is not suitable for continuous administration, and nearly all the fatalities have followed attempts to prolong the anaesthesia by giving supplementary doses.

Gas and oxygen is, of course, the ideal anaesthetic from one point of view, because it is the nearest approach to 100 per cent. safety we possess. It has unfortunately, however, great drawbacks. The apparatus is costly and bulky, liable to mechanical breakdowns, and requires constant and careful maintenance to keep it in working order. While many of us are fortunate enough to have the use of an apparatus at our cottage hospital, we are reduced to chloroform or ether for the majority of our cases outside.

If only chloroform were safe it would be the ideal anaesthetic for general practice. It is the most easily portable and least bulky of all the available drugs; it never fails to anaesthetize, is far more pleasant than ether, is non-inflammable, and gives a delightful, quiet, and uncongested sleep. Operations such as tonsillectomy and large-scale dental extractions, for example, which may be a shambles under ether, are a delight under chloroform. Nevertheless, the fact remains that figures collected by hundreds of different observers under all sorts of different conditions show that there is a steady mortality of 1 in 3,000 with this drug, and that this mortality tends to be of that most heartbreaking type—that is, the unexpected case—the apparently healthy young adult who snuffs out under some comparatively trivial operation such as circumcision or tonsillectomy.

Ether is probably rather more than twice as safe as chloroform. In addition, its victims are much more likely to be people who are bad anaesthetic risks, and whose death does not come as such a shocking tragedy, and for this reason it must remain the anaesthetic of choice for most cases. It has, however, one great and real drawback, which is its inflammability, and there will always be cases in which it cannot be used for this reason. In 208 recent confinements, for instance, there were only seven in which there was not a naked flame in the room. In forty-seven there were gas or electric fires, which could be turned out easily, and in 154 coal fires, at distances from the patient ranging from three to twelve feet. The lighting was by gas in twenty-seven instances, lamps in eleven, and candles, waved wildly by the midwife, in five. Under such conditions of lighting and heating it is a lucky general practitioner who will not have to have recourse at some times to the dangerous but very satisfying anaesthesia of chloroform.

My choice for the major operations of general practice is to induce with 5 drachms exactly of C_2E_3 . A gamgee square with a large hole in the centre (a torn hole is much better than a cut one) is placed on the patient's face "to keep anything out of the eyes." The mask is held about three inches away, and the C_2E_3 is poured on drop by drop while the patient counts or talks. The mask is slowly approximated to the patient's face until it rests on the gamgee shortly before the 5 drachms of

mixture are exhausted. If the change to ether is then made slowly a smooth induction without coughing or struggling is nearly always achieved.

To sum up, then, the choice of anaesthetic in general practice will be along these lines.

Minor Operations.—Nitrous oxide, ethyl chloride, or local anaesthesia for surgery use. Evipan sodium for a patient in bed.

Major Operations.—Gas and oxygen in hospital, C_2E_3 —ether sequence in general. Chloroform if close to naked flame.

NEW BLOCK AT ST. BARTHOLOMEW'S

OPENING BY QUEEN MARY

Queen Mary visited St. Bartholomew's Hospital on July 8 to open the new medical block, which is to be known as the "King George V Building," an erection of six floors, occupying the site of the old south block, with accommodation for 253 beds. The ceremony took place in a large marquee erected on one side of the hospital square adjoining the new building. Her Majesty was received on arrival by Lord Stanmore, treasurer of the hospital, the Earl of Strafford, senior almoner, and the Countess of Strafford, president of the hospital women's guild. Among those presented were Dr. Alexander Gow, senior physician, Mr. Harold Wilson, senior surgeon, Dr. George Graham, physician, Mr. W. Girling Ball, surgeon and dean of the medical college, and Miss Helen Dey, matron and superintendent of nursing.

After prayers by the Archdeacon of London, Lord Stanmore read an address recalling the history of the hospital, how for eight hundred years on that site, as its founder Rahere ordained, it had admitted the sick, the wounded, and women labouring with child. Just four hundred years ago, as a result of the Reformation, with the dissolution of the monastery whose canons, with sisters, had ministered to the spiritual and physical needs of the patients, the hospital was left almost derelict, whereupon the Mayor of London, Sir Richard Gresham, and the Aldermen and Commonalty presented a petition to Henry VIII, who in consequence refounded the institution and enabled the work of tending the sick poor to be resumed. During these last four hundred years the patients had been treated by physicians, surgeons, and nurses, whose work had added to the prestige of the hospital. Lord Stanmore recalled previous visits of Queen Mary. She had accompanied King George V in 1907 on the occasion of the opening of the out-patients' department, and in 1921 had laid the foundation stone of the nurses' home, which bore her name. (He might have added that she also came to the hospital in 1917 and distributed parcels to a number of patients who had been injured in an air raid in the locality.) He concluded by saying that the opening of this block of medical wards with the most modern equipment would enable the ancient hospital to retain the position it had always held in the forefront of the healing art and allow a larger number of patients to be treated in accordance with the highest ideals of modern medicine. The Queen then declared the new building open, and after the architect, Mr. T. A. Lodge, had been presented she proceeded to inspect the block, also visiting the British Red Cross library and the nurses' home.

The New Medical Block

Each of five floors of the building (except the ground floor, which has slightly less accommodation) is divided into two units of twenty-five beds, each unit comprising a large ward of twenty-three beds and two single-bed

wards. Attached to each unit also are sanitary rooms, ward kitchen, sisters' room, and linen room, and on each floor examination rooms, staff rooms, and rooms for various routine purposes. Each large ward is equipped with a sun balcony for beds facing south, and on the top of the building a solarium has been placed. The top floor contains an isolation unit of seven beds, also laboratories forming an extension of the Dunn laboratories built with the surgical block in 1930. There is also a lower ground floor with rest and common rooms for patients' friends, departments for cardiographic work, and a number of stores and offices. The equipment throughout is of the most modern type; particular attention has been given to the fittings, and as far as possible all cupboards have been built in. The building is considerably larger than the block it replaces, and careful planning has been necessary to secure maximum light and ventilation to the various rooms. The eighteenth century appearance of the hospital square, of which Bart's is legitimately proud, has been preserved by the use of Portland stone facings to the part of the building which adjoins the square, and as far as possible the old stone, used when the old building was constructed two hundred years ago, has been re-used for the purpose.

TRAVELLING FELLOWSHIPS IN TUBERCULOSIS

The Medical Research Council has awarded Dorothy Temple Cross Research Fellowships to the following candidates intending to study problems of tuberculosis at centres abroad during the academic year 1937-8:—

BRIAN CONNOR THOMPSON, M.D., Cantab., formerly Assistant Tuberculosis Officer, Durham County Council (renewal of present fellowship for three months).

RONALD HERBERT ROBERT BELSEY, M.B. Lond., F.R.C.S., Resident Surgical Officer, Hospital for Consumption and Diseases of the Chest, Brompton, London.

BRIAN MAURICE MAXWELL, M.D. Belf., Senior Assistant Medical Officer, Cheshire Joint Sanatorium, Market Drayton.

OSWALD SYDNEY TUBBS, B.Ch.Cantab., F.R.C.S., Chief Assistant to a Surgical Unit, St. Bartholomew's Hospital, London.

ENID MARY WILLIAMS, B.Sc., M.D., Wales, Assistant Lecturer in Tuberculosis, Welsh National School of Medicine, Cardiff.

The next annual meeting of the International Society of Medical Hydrology, which is open to non-members on payment of a fee of £1, will be held in Germany, at Frankfurt and the neighbouring spas, from October 17 to 22. The members of the Congress will be housed in Wiesbaden throughout, but the ceremonial opening meeting and first discussion will be held at Frankfurt. The other spas to be visited are Bad Nauheim and Bad Ems, at each of which meetings will be held, and a flying visit has been arranged to Schwalbach and Schlangenbad, on the way to Eltville, where a Rhineland vintage festival will take place. After the meeting there will be optional excursions to Kissingen, Heidelberg, Würzburg, Worms, Baden-Baden, and other places. The inclusive charge for accommodation and excursions during the meeting is RM. 85 (about £7); the party to travel from London on October 16. The subjects for discussion are (1) bioclimatology; (2) psychological factors of health resort practice (one of the openers being Dr. R. G. Gordon of Bath); and (3) natural history of peloids (moors and muds). There will also be demonstrations of laboratory and experimental work. All information may be had from the I.S.M.H., 109, Kingsway, London, W.C.2.