Cloudy fluid is common in streptococcal infections. Chylous effusion is usually opaque and must make the physician think of chronic tuberculosis or endothelioma of the pleura. It is exceedingly common in injury to the left subclavian vein or the main thoracic duct. Purulent effusions which are odourless are as a rule thin in the early stages. Tuberculous septic pyothorax usually gives a greenish-yellow purulent fluid. Where the effusion is offensive, the observer must immediately suspect the presence of lung or bowel communication with the pleural cavity, and his mind will run on a differential diagnosis for the primary lesion as between abscess of lung, bronchiectasis, empyema with broncho-pleural fistula, and pus in the abdomen, where subphrenic abscess is by far the commonest finding.

TRANSUTERINE INSUFFLATION AND SALPINGOGRAPHY

BY

A. LEECH-WILKINSON, B.M.Oxon, F.R.C.S.Ed.

Hon. Assistant Gynaecologist and Obstetrician, Royal United Hospital, Bath

The usual methods of uterine and tubal insufflation, whether by gas or by radio-opaque substances, are somewhat tedious to carry out, and their use often involves a certain amount of physical as well as psychological trauma to the patient. The following method, in which a simplified type of cannula is used, was evolved by me some twelve months ago, and has proved to be satisfactory either for gas-insufflation in the consulting-room or for injection of radio-opaque fluid in the x-ray department or operating theatre.

The Apparatus

The insufflation cannula (Figs. 1 and 2, B) consists of a hollow metal tube with a conical, rather sharp, screw-tip; this can be screwed into the cervical canal tightly enough to prevent leakage around it. At first sight this might seem a traumatic procedure; but repeated examinations made after its use have failed to show that any damage has been inflicted on the cervix, nor is the process of insertion and screwing-in attended with more than very minor discomfort. The proximal

FIG. 1

end of the tube is expanded so that a rubber tube can be slipped on to it from the ordinary CO₂ or air-insufflator apparatus, and into this same end can be screwed, if lipiodol is to be used, an adapter with bayonet-fitting to take any standard S.I.M.A. syringe (Fig. 1, E). The cannula also has a stylet (Figs. 1 and 2, C), which reaches about three-quarters of an inch beyond the distal end. The purpose of this is to guide the cannula into the cervical canal, from which it is automatically extruded during the process of screwing-in.

Method of Use.—The patient lies in the left lateral or the lithotomy position. A narrow, warmed and lubricated Fergusson's speculum with obturator (Fig. 2, A) is passed and the obturator withdrawn. Illumination is provided by angle-poise lamp or headlamp, and when the os presents it is mopped dry and cleaned with a suitable antiseptic; for this purpose I have found it convenient to use cotton-wool swabs held in Desjardins' gall-stone forceps (Fig. 2, D). The speculum is steadied with the left hand, and the cannula, armed with its stylet, is passed with the right hand. The stylet, guiding the tip of the screw-cone through the external os into the cervical canal, is now loosened, and the cannula is screwed home gently but firmly; the stylet is now removed and the

speculum may also be withdrawn. If the patient is in the left lateral position she is now asked to turn on to her back; meanwhile the cannula is simply steadied by the operator, for it will not disengage itself. The gas or lipiodol connexion

FIG. 2

is now fitted at the distal end of the cannula, and the routine insufflation carried out with the minimum of assistance and fuss.

Comment

1. It is claimed that this method has the merit of simplicity.
2. An air- and oil-tight connexion is ensured, and hence leakage, which may produce false impressions, is avoided.
3. The use of vulsella, which are painful and traumatic when applied to the cervix, is rendered unnecessary. This is particularly valuable, since distortion of the uterus and appendages by traction and countertraction is avoided. Indeed, the cervix can actually be pulled down during insufflation or injection, if desired.

4. During the process of "screwing home" the patient may complain of some pain; this is usually slight, and ceases as soon as the screw is fixed in the cervix.

The cannula was originally made for me by Mr. A. E. Christmas of Frome, to whom I am greatly indebted for many helpful suggestions, and is now being manufactured and marketed by Messrs. Down Bros. Ltd.

THE PITRESSIN DIAGNOSIS OF IDIOPATHIC EPILEPSY

BY

WILLIAM BLYTH, M.D., D.P.M., F.R.F.P.S.G.

Psychiatrist, E.M.S.

As a rule in hospital practice there is little urgency for a rapid diagnosis to be made in cases of suspected idiopathic epilepsy, and doubtful cases can be submitted to prolonged observation until an actual seizure has taken place. There are, however, certain occasions when it is necessary to establish a definite diagnosis as early as possible. In the average hospital case the required period of observation will be a matter of days or at the most a week or so, but when irregular seizures occur at infrequent intervals this period may have to be extended into months before a definite diagnosis can be established. It is with a view to curtailing this period of observation that an attempt has been made to determine a method whereby the condition can be diagnosed with a degree of certainty in the absence of seizures.

Indications for Use of the Method

The circumstances under which it may be necessary to give a rapid opinion on the existence or otherwise of this condition

will, of necessity, vary according to the requirements of the individual case, but the following are indications in which the method has been found to be of value.

1. In order to differentiate between idiopathic epilepsy and hystero-epilepsy.

2. Where the existence of idiopathic epilepsy has been claimed by a patient in the absence of clinical evidence and a definite diagnosis has to be established.

3. When a diagnosis has to be made in a case where the history and clinical features are suggestive of the presence of idiopathic epilepsy, the existence of which is denied by the patient, and where a seizure has not resulted.

4. Where a diagnosis has to be established as a result of various conduct abnormalities being attributed by the patient to the existence of idiopathic epilepsy, and where a seizure has not resulted.

5. Where a differential diagnosis has to be made between idiopathic epilepsy and malingering.

6. Where, under any of the foregoing indications, there is an added urgency for legal reasons, and where time does not suffice for the usual method of continued observation by a trained nurse until an actual seizure ensues.

At present these various indications are often encountered in the routine examination and assessment of Service cases, and the importance of reducing the period of observation necessary, with the resultant economy in time, expenditure, and man-power, as well as the greater accuracy afforded in diagnosis, can be readily appreciated.

Relation of Water Balance to Idiopathic Epilepsy

The rationale of the method adopted depends upon the fact that retention of water in the body will precipitate a seizure in predisposed persons while exerting little influence on normal individuals. In 1931 McQuarrie, studying the effects of prolonged pituitary antidiuresis combined with increased fluid intake on young epileptics, found that seizures resulted in predisposed subjects but not in others. Working along similar lines, Temple Fay found that abnormalities in water metabolism were an important predisposing factor in the production of idiopathic epilepsy. Similar investigations have been carried out by Jacobsen, and later by Clegg and Thorpe, who have made exhaustive studies on the relation between the water balance of the body and the occurrence of epileptic seizures. Clinically, the frequency with which distension of the sub-arachnoid space is demonstrable in epileptic subjects either by means of operative procedure or by encephalography is of importance, while various observers have stressed the efficacy of hydragogue cathartics in the reduction or averting of seizures without associating this finding with the water balance of the body, but rather attributing the beneficial results obtained to the removal of toxic substances.

The establishment of a positive water balance in a selected subject can be obtained by the prolonged ingestion of copious amounts of water alone, but this method requires the expenditure of a considerable amount of time and often leads to lack of co-operation on the part of the patient and, in some cases, to actual refusal to continue to submit to investigation. More rapid results are obtained by the oral administration of copious amounts of water accompanied by pitressin intramuscularly. This is the pressor and antidiuretic principle of the posterior lobe of the pituitary, as distinct from the oxytocic. This substance has the property of causing marked water retention in normal individuals while having the subsidiary effects of stimulating the involuntary muscle of the gastro-intestinal and genito-urinary tracts and slowing the pulse.

Experiments with anaesthetized animals have shown that pitressin, even in small doses, produces a temporary polyuria followed by a reduction in output which in time amounts to an almost complete stoppage of flow. In non-anaesthetized dogs the antidiuretic effect is well marked, and this is also the predominant effect in the human subject. The action of pitressin in causing water retention in a normal subject is demonstrated in the accompanying chart. A is the normal curve, showing the accumulative excretion of urine resulting from the ingestion of 1,000 c.cm. of water at 8 a.m. The curve reaches its zenith after the expiry of 5 to 6 hours, and

remains at a fairly constant level thereafter. B shows the effect produced by injections of 1 c.cm. of pitressin under similar conditions. C and D show the effect produced by injections of 2 c.cm. and 3 c.cm. of pitressin respectively. It will be seen that even in small doses this substance has a well-marked antidiuretic effect on the human subject.

Chart showing the water-retaining action of pitressin in a normal subject.

A Preliminary Test

On account of the physiological properties of pitressin there are certain contraindications to its employment in diagnosis. These are mainly the presence of diabetes, nephritis, arteriosclerosis, and myocarditis, and before starting the investigation it is advisable to eliminate the existence of these conditions by a routine urinary examination, an estimation of the blood pressure, and a cardiovascular examination. The test adopted was carried out in the following manner.

The patient under investigation was confined to bed throughout the test. The bowels were opened by an enema, urine was voided, and his weight was then taken. Ordinary diet was maintained throughout; any previous sedative therapy was discontinued, and he was encouraged to drink copious amounts of fluids. The intake and output of fluid were charted daily, while the patient was weighed morning and evening. An increase of 2% in the body weight with the ingestion showing an excess over the excretion was accepted as evidence that a positive water balance had been established (earlier investigators stressed the importance of there being a 3 to 6% increase, but this standard was abandoned in the early stages of the present investigation as the period necessary to obtain this additional increase defeated the purpose of the test.) The average period required for the establishment of this balance with a co-operative patient carefully supervised was 48 hours. Throughout the investigation known non-susceptible patients were used as controls. When a satisfactory water balance had been attained, 0.25 c.cm. of pitressin was injected intramuscularly and 300 c.cm. of water was administered orally. Thereafter 0.5 c.cm. of pitressin was injected and 300 c.cm. of water given orally every two hours to a total of 10 injections. On the occurrence of a seizure the treatment was immediately stopped, but otherwise the full course was given. In every case pallor followed the administration of pitressin within 5 minutes of the injection, and lasted on an average for 3 hours, disappearing after the second or third injection, but in a few cases this continued at a uniform level throughout the investigation. The physiological action of the drug was displayed by the slowing of the pulse and the tendency to looseness of the bowels, but these features were in no instance severe enough to merit termination of the investigation.

The positive evidence that idiopathic epilepsy is present depends upon the development of an actual seizure, which may be of either the major or the minor type. The failure to produce such a result does not necessarily prove that the patient is non-susceptible, and in doubtful cases the test may have to be repeated before an opinion can be given. The seizure in susceptible cases has been found to result most frequently after the fifth or sixth injection—that is, a period of 8 to 10 hours—but in certain cases this may be delayed until after the tenth or final injection, while in others a positive result may be obtained in the initial stages after the first injection.

The combination of the establishment of a positive water balance and administration of pitressin appears to be a necessary factor in the production of the seizure, as cases treated with pitressin alone without previous adjustment of the water balance failed to react, while no result was obtained in those cases in which a positive water balance alone was established. The control cases, which were previously known to be non-susceptible, displayed the physiological signs of pallor, slowness