twelve fits. Her lungs were clear. The blood urea was 41 mg. per 100 ml., the blood sugar 85 mg. per 100 ml., and the blood calcium 9 mg. per 100 ml. The cerebrospinal fluid contained 30 red cells per c.mm. but was otherwise normal.

On Jan. 1, 1947, she was still comatose and had 60 fits; the temperature was 101° F. (38.3° C.), and the respirations 22. Towards evening cough with sputum developed, moist sounds appeared at the bases of the lungs, and the respirations increased to 32. Penicillin, 30,000 units three-hourly, by intramuscular injection was started, and sulphamezathine, 2 g. at once and 1 g. four-hourly, was given through the gastric tube. Paraldehyde, 4 dr. (14 ml.), four-hourly per rectum was started. Phenobarbitone and thiopentone were discontinued. The white blood cells numbered 21,000 (81% polymorphs). Blood culture was sterile. The sputum showed *Staphylococcus aureus* and pneumococci. A catheter specimen of urine was sterile, and contained red cells and pus cells, a trace of albumin and sugar, but no casts. A skiagram of the chest was normal. On the 2nd her condition was deteriorating. Rectal paraldehyde was not retained; 3 dr. (11.5 ml.) was given four-hourly through a gastric tube. The temperature was 104° F. (40° C.), pulse 130, and respirations 40. During the day she had 25 fits. She was still comatose, and rales at the lung bases had increased. Mr. Glyn Davies advised against emptying the uterus.

On Jan. 3 her condition was slightly improved: there were no further fits and the coma was not so deep; the temperature was 100° F. (37.8° C.), pulse 130, and respirations 30. Paraldehyde was continued. A blood count showed: white cells, 9,200 (polymorphs 80%); haemoglobin, 73%; urea, 54 mg. per 100 ml. Next day her condition was steadily improving. She could be roused and was no longer incontinent. The temperature was 100° F., pulse 110, and respirations 30. There were no fits. On the 5th she was conscious and co-operative, but cerebation was slow. The temperature and respirations were normal, the pulse 110. She took fluids by mouth normally. Paraldehyde was reduced to 3 dr. six-hourly. On the 6th sulphamezathine was discontinued. She had no fits or symptoms and was fully conscious and sensible. The temperature, pulse, and respirations were normal. A catheter specimen of urine was sterile, and contained red cells and pus cells, a trace of albumin and sugar, but no casts.

On Jan. 9 the paraldehyde was discontinued. Phenobarbitone, 1 gr. (65 mg.), was given by mouth, three times a day. She had no fits. Skiagrams of the chest and skull were normal. On Jan. 16 the penicillin was discontinued. The patient was asymptomatic, and there were no abnormal physical signs and no fits. Next day her physical condition was excellent, but she became tearful and uncooperative. Clonic twitchings of the legs developed in the presence of any audience. She asserted that she could not walk. The character of these phenomena strongly suggested hysteria, and this diagnosis was confirmed by Dr. A. G. Yates. On Jan. 20 she was physically normal but grossly hysterical. She was discharged from hospital, under observation, on phenobarbitone, 1 gr. thrice daily. The pregnancy had remained undisturbed throughout in spite of continuous coma for six days and a total of 128 fits in hospital and an unknown number before admission.

Subsequent Progress

On June 6 the patient was feeling perfectly well, walking normally, with no signs of hysteria. She was taking phenobarbitone as instructed, and there had been no further fits.

On July 21 she was delivered of a normal female child weighing 8 lb. 2 oz. (3.7 kg.) by spontaneous delivery at term. There were no fits during labour, and both mother and child are progressing satisfactorily.

Discussion

This case differs in several important respects from the one described by Burnett. In our patient status epilepticus had occurred previously, when the patient was not pregnant and had omitted her phenobarbitone; it occurred at the end of the first three months of pregnancy, during which period she had taken no anticonvulsant drugs whatever. Burnett's patient had never previously had status epilepticus, which developed in the last three months of

pregnancy in spite of regular anticonvulsant therapy. There does not seem to have been any question of eclampsia. Finally, termination of the pregnancy was not required in our case.

These differences suggest that the prognosis may be better when omission of specific therapy is a complicating factor than when status epilepticus intervenes in pregnancy despite previous adequate therapy. In our case it may well be that failure to take the necessary amount of phenobarbitone was alone responsible for the condition, but it would appear that the pregnancy exerted an additional malign influence, since this attack was far more severe than the previous one.

It is probable that the profound changes in hormonal balance with intracellular fluid retention which occur in pregnancy may lead to a slight degree of cerebral oedema sufficient to "fire-off" an excitable cortical focus. It is a well-known fact that some epileptics experience more fits at the menstrual periods than at other times, or may have fits only at those times.

In future cases of status epilepticus in pregnancy careful inquiry should be made concerning previous anticonvulsant treatment, as this point may prove an aid to prognosis and therapy. It is possible that onset in the early months of pregnancy may indicate a better chance of recovery than onset in the later months, when latent toxæmia of pregnancy may be an additional factor.

We wish to express our thanks to Prof. E. J. Wayne for permission to publish this case and for helpful criticism. We would also like to thank Mr. Glyn Davies and Dr. A. G. Yates for their help.

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DISCONTINUOUS INTRAVENOUS INFUSION AND TRANSFUSION

ADVANTAGES AND TECHNIQUE

BY

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Working as I do to a large extent in small hospitals and nursing homes without a resident medical officer, I have found the following expedient a godsend. The principle is founded on Edwards's vein-seeker. The outfit (Fig. 1), improvised with materials that are not difficult to obtain, was evolved with the assistance of Sister Pauline, C.B.E. It is of cardinal importance that the tubing be latex or other really good rubber. Most rubber tubing supplied to-day, particularly that made from synthetic rubber, has been found to be useless and dangerous for this purpose. Another essential point is that the rubber tubing must be renewed each time the apparatus is sterilized by boiling, and each time it is renewed the tubing must be tied securely

FIG. 1.—Showing the relative sizes of the components.

on to the glass connexion. The cannula is my pattern gold-plated cannula, preferably but not necessarily the child's model. I use a cannula because it can indubitably be tied into a vein, and it withstands the hazards of displacement to which experience shows it may be subjected; in short, it is almost foolproof. The bulb, tubing, and cannula are filled *completely* with 3.8% citrate solution. The cannula is tied into a vein in the usual way. The bulb is slightly compressed and released, and blood appears in the glass window (Fig. 2). Every four to six

FIG. 2.—The apparatus in place. Especially when inserted into a vein of the forearm or the saphenous vein above the ankle, it can remain in position for four or five days without discomfort or the occurrence of thrombosis.

hours the bulb is *slightly* squeezed and released by the nurse in charge, and through the window it is noted whether the blood moves to and fro. It is possible to keep the cannula *in situ* for days, ready for immediate use when required. Any State-registered nurse can gently wipe the latex tube with alcohol and insert a hollow needle into the lumen of the rubber tube (Fig. 3). So it comes about

FIG. 3.—A hollow needle linked to an infusion or transfusion set can be inserted, withdrawn, and reinserted by the nurse in charge according to the orders she has received.

that saline solution, glucose solution, plasma, matched blood (if left in readiness), isotonic sodium sulphate solution, heparin, or any intravenous medication can be ordered at any hour on the telephone by the surgeon or physician, who may be miles away. This is the first advantage, and one that many will appreciate.

What I believe is a more important consideration is that if only this method of vein cannulization could be adopted in all cases where it is judged that the patient may need parenteral fluid for more than a period of six hours, I am sure many lives would be saved, for orders could be given to stop the infusion at a stated time. Patients would therefore be given a chance of disposing of fluid. Should they need more in a matter of one, four, or six hours, they can have it at once by simply inserting a hollow needle through the tubing.

What a safeguard this is! Instead of, through some mischance, the drips running for days without due checking as to whether the patient is in need of fluid, he would receive only such parenteral fluid as had been specifically ordered by the physician or surgeon in charge of the case.

In all seriousness I suggest that if hospital authorities gave orders that this simple apparatus must be employed in every case of intravenous infusion and transfusion, that it must be withdrawn at the end of 24 hours, and that it should be reinserted only after the house officer has consulted his chief, the registrar, or the resident medical officer, a great blessing would be conferred on the community.

Medical Memoranda

Epithelioma Complicating Lupus Erythematosus

Cases of epithelioma complicating lupus erythematosus are still rare enough to warrant being placed on record. According to Pringle (1900) the condition was first mentioned by Riesmayer, of St. Louis, in the *St. Louis* (U.S.A.) *Courier* of 1886. This

FIG. 1.—Photograph taken in March, 1946, showing keratinized warty growths.

original article is untraceable, but the title "Epithelial Cancer on Lupus Erythematosus," which Pringle quotes, appears convincing in its correctness. Pringle's own case was first seen by him in 1890—a woman aged 36 suffering from lupus erythematosus of the face and scalp. Seven years later a new feature in the case presented itself: "a raised, nodular, hard, irregularly outlined growth, with elevated, punched out, underlined margins and ulcerating centre, situated in the posterior parietal region and about the size of a five-shilling piece." This was freely excised, and histologically was found to consist of a squamous-celled carcinoma. The next fifty years brought to light further cases, and in 1929 Durand made a most exhaustive review of the subject. This was brought up to date by Beeson and Ehert.

Clinically the cancer appears most often as a vegetating or ulcerative lesion. Histologically the prickly-celled group is