A METHOD OF DRAINING THE SEPTIC UTERUS.

BY

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To those who are much engaged in the treatment of puerperal sepsis there is one form of treatment, at any rate, which is rapidly passing out of favour, and that is leaving the septic uterus to take care of itself. This opinion was definitely reached in this hospital when it was found that in over half the cases of puerperal sepsis admitted there was pent-up pus.

Since there still seems to be a diversity of opinion as to the best method of draining the uterus it is thought that a short account of that we have found most successful might be helpful to those engaged in the task.

The first point which always arises when we have to deal with pent-up secretions, naturally, from our surgical teaching, is the question of placing a drainage tube in the parts concerned. For some time a drainage tube was left in the uterus either as a continuous method or only for some hours. After considerable experience it became apparent that this was not the best form of treatment, as even after twelve hours the tube became offensive. It was thought that a tube left in the uterus acted as a sort of plug, or as a cork in a bottle, and retarded the flow of lymph from the tissues. In many cases it excited uterine contractions and caused pain, because the organ is always trying to expel foreign bodies. Such a procedure exhausts the uterine muscle, rendering it toneless, and doing away with the very function it is essential to retain. In some cases we were of opinion that leaving in a tube promoted haemorrhage rather than lessened it, and dammed back the secretions in the uterus.

In order to arrive at the best method of draining the uterus two things have to be borne in mind. In acute cases the oedematous tissues of the uterus have to be drained, and in chronic cases the secretions in the over-distended tortuous glands have to have an exit. Further, the cervical canal must be kept clear of all foreign bodies and retained products, such as pieces of placenta, membrane, and blood clot. The swollen cervical canal has to be reduced in size by a drug which diminishes the inflammation and so widens the canal.

In our experience the presence of a tube constantly in contact with the cervical canal does not obviously tend to reduce the swollen tissues. The whole art, therefore, of draining the tissues, as well as regaining the patency of the cervical canal and the contractile power of the uterus, is to use a suitable drug without leaving in a tube.

In choosing a drug the question has to be asked: Is there a method which can be applied again and again without being followed by an increase in the fever or disease, so that each application fulfils the purpose of an aid to the draining of the tissues which are in a state of stasis, which in no way injures the living cells of the tissues with which it comes in contact, which promotes a flow of lymph from the infected tissues—a method which, if properly applied, alleviates pain, relieves congestion, and by so doing stops secondary haemorrhage, mildly stimulates the uterine muscle to contract, and finally restores the function of the uterus? There is a method, and that method involves the use of glycerin (undiluted).

The Method.

The instruments required are: (1) a catheter introducer; (2) terminal-eyed soft rubber catheters; (3) an anterior vaginal wall retractor; (4) a modification of Sims's speculum; (5) 2 c.cm. and 10 c.cm. Record syringes.

No anaesthetic, general or local, is necessary. The patient is placed in the lithotomy position. The external parts are washed with ether soap and water, and then with saline. The vagina is treated in the same way. A Sims's speculum is introduced into the posterior fornix, and an anterior vaginal wall retractor into the anterior vaginal fornix, and by a series of gentle movements the cervix is manipulated into a central position. The

speculum must not be pushed too far back, and the anterior vaginal wall retractor must be held horizontally and obliquely in the same plane. By this means a good view is obtained of the cervix, which becomes readily accessible for the purpose of passing a catheter. A terminal-eyed catheter is lubricated with glycerin, and gently inserted into the os, syringing the glycerin in front of the catheter so as to make a bed for its easy upward progress through the cervical canal to the fundus of the uterus. The syringing is still continued as the catheter is withdrawn. This is repeated if the uterus contains much pus.

Modifications of Treatment for the Type of Uterus.

After Labour or Miscarriage.—The patients here are relatively insensitive, and the best time for treatment is certainly during the first few weeks following labour or abortion, and quicker results are obtained.

Cases Following Labour.—In these cases we have certainly found the undermentioned method the best in all our experience. Patients are prepared in the usual way, but after the insertion of the catheter into the uterus the anterior vaginal wall retractor and Sims's speculum are removed, leaving the catheter *in situ*. The legs are then lowered on to the table, and the syringe, with the catheter still fixed on the end, is placed on a sterile pad on the symphysis pubis. A pillow is placed under the knees to add to the patient's comfort. The assistant, standing by the side of the patient, injects the glycerin slowly through the catheter, giving a slow irrigation treatment to the uterus. This may be continued for from twenty minutes to half an hour. In that time 60 to 100 c.cm., or even more, glycerin may be injected without causing the slightest discomfort to the patient. This may be done twice a day. Undoubtedly a more thorough washing of the uterus is obtained, and in many cases after one or two irrigations the temperature has fallen by crisis, whereas the short intermittent remedy which is used in the majority of cases has had no effect on the temperature.

Chronic Cases.—Many patients received into the gynaecological wards have suffered from intermittent attacks of temperature, recurrent attacks of pelvic peritonitis, and, which have been so distressing to the patient, prolonged uterine haemorrhages. Many of our recent cases have been dealt with very successfully in the following way. Small quantities of glycerin have been injected into the uterus daily until the temperature has come down, and if there is still much discharge and erosion which is not cleared up the uterus is washed out occasionally with industrial methylated spirit under morphine gr. 1/4. In cases of chronic haemorrhage, as in chronic metritis and fibrosis uteri, patients are given an anaesthetic and the uterus is washed out alternately with methylated spirit and glycerin. This is repeated for about a dozen times. Subsequently in all cases the uterus is drained for the succeeding few days.

By these treatments many cases which have seemed quite hopeless have cleared up.

I wish to thank Dr. Mary R. Levack for her help in carrying out the treatments.

CONGENITAL DEXTROCARDIA WITHOUT TRANSPOSITION OF OTHER VISCERA:

ACQUIRED VALVULAR DISEASE AND AURICULAR FIBRILLATION.

BY

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COMPLETE transposition of the viscera, *situs inversus totalis*, is too well known as a clinical condition to merit any special description. The following case, however, presents several features of unusual interest.

Description of Case.

The patient, a female, aged 30, first came under the care of Dr. Theodore Thompson in October, 1926.

History.—For ten years she has had a troublesome cough, shortness of breath on exertion, and attacks of palpitation

and faintness. There has been occasional pain across the right side of the chest in front, particularly after exertion. She has never had swelling of the feet or haemoptysis. There was no history of rheumatic fever, chorea, or of other serious illnesses in childhood. As a child her heart was found to be on the right side.

The patient was a pale, ill nourished, and under-developed woman. The lips were slightly cyanosed. The fingers were not clubbed. The pulse was small, completely irregular both in time and force, with a rate of 90 per minute. She was taking digitalis at the time of examination. The systolic blood pressure (brachial) was approximately 120 mm. of mercury.

On examining the chest, cardiac pulsation was observed to the right of the sternum, and the apex beat was felt in the fifth space, four inches to the right of the mid-sternal line. The cardiac dullness was found to the right of the sternum, the right border extending out to the apex beat.

FIG. 1.—Radiogram showing heart shadow in the right side of the chest, and the aortic "knuckle" to the right of the mid-line.

No thrills were felt on palpation. On auscultation the heart sounds were irregular, and over the apex beat both systolic and diastolic murmurs were heard. The second pulmonary sound was accentuated. The breath sounds over both bases were diminished, and accompanied by rhonchi and crepitations. The hepatic dullness was present in the normal situation, and the lower edge of the liver could just be felt beneath the right costal margin during deep inspiration. The urine was normal. The Wassermann reaction in the blood was negative.

The patient was radiographed by Dr. M. H. Jupe, to whom I am indebted for the following report (Fig. 1):

"The heart shadow lies in the right side of the chest, with a small area projecting to the left of the spine. The aortic 'knuckle' appears to occupy a position to the right of the mediastinum. The heart is more globular in shape than usual, and its right margin is distinctly convex in outline. Although the peribronchial shadows are more obvious than usual, gross abnormality of the lungs or pleura is absent. The hepatic shadow is seen on the right side. A barium meal was given and the patient screened, when the stomach was found to occupy a normal position. The case appears to be one of dextrocardia accompanied by transposition of the great vessels. The other viscera occupy a normal position."

The electro-cardiogram (Fig. 2) is grossly abnormal. The abnormality of waves in Lead 1 makes it difficult to be certain of their direction; on the whole they do not appear inverted; r waves are absent in all leads, and the ventricular complexes, many of which are ectopic, are quite irregular.

Diagnosis.

There can be little doubt as to the diagnosis in this case. The patient has congenital dextrocardia with normal

position of other viscera, and this is associated with a valvular lesion, probably mitral stenosis due to old rheumatic endocarditis. The case is complicated by auricular fibrillation.

Comments.

Congenital dextrocardia without transposition of other organs is comparatively rare. In 1921 Laubry and Pezzi⁴ collected from the literature twenty-nine cases of this condition in which the diagnosis was certain, whereas they were able to collect 227 cases of total transposition of viscera.

The appearance of the aortic "knuckle" to the right of the mid-line in the radiogram is unusual in this type of case. According to Laubry and Pezzi the cardiac chambers are not actually reversed in congenital dextrocardia without total *situs inversus*. They hold that the condition is due to a "pulling over" of the heart without rotation, and thus the relative position of the great vessels shows little departure from the normal. For this reason the curves in Lead 1 of the electro-cardiogram are usually not inverted as in complete transposition of viscera. Several cases of undisputed diagnosis have, however, been described, in which the cardiac cavities were actually reversed and Lead 1 of the electro-cardiogram inverted (Moffett and Neuhoof,⁷ Gorter,³ Meyer,⁶ Capon and Chamberlain¹). That the functional left heart is on the right side in this case is further suggested by the fact that abnormal murmurs, presumably mitral in origin, are heard over the apex beat

FIG. 2.—Electro-cardiogram showing auricular fibrillation (absence of P waves), and gross abnormality of ventricular complexes in Lead 1.

in the fifth right space, and by the shape of the right border of the cardiac shadow in the radiogram (Fig. 1). In the electro-cardiogram (Fig. 2) here described, one cannot be certain of the direction of the waves in Lead 1, as they are so abnormal. It would certainly be unusual to find the waves in Lead 1 normal in direction in a case where the cardiac chambers are actually reversed. A case of congenital dextrocardia without transposition of other viscera, however, was described by Gautier and Coeytaux² in which radioscopically the cardiac cavities and great vessels appeared reversed, but in which the electro-cardiogram was normal. The diagnosis in this case was not confirmed anatomically.

The coexistence of acquired valvular disease and congenital dextrocardia is by no means unknown. So far as I am aware, mitral stenosis associated with congenital transposition was first described by Owen⁸ in 1911. Other cases complicated by valvular disease have since been described; indeed, an individual with congenital dextrocardia would appear to be as much liable to rheumatic disease as any other.

Curiously enough, abnormalities of cardiac rhythm are apparently very rare in this condition, but there are as yet too few electro-cardiographic records of these cases to justify any definite statement. That interference with the conducting mechanism may occur is illustrated by such records as those published by Parsons-Smith¹⁰ and Potts and Ashman.¹¹ Auricular fibrillation complicating dextrocardia, as in the case here described, however, must be extremely rare; I could find no reference in the literature to a similar case. Laubry and Pezzi⁴ state that they have never seen auricular fibrillation occur in any case of

congenital heart disease, and this was also the experience of Parkinson and Clark-Kennedy⁹ in 1926.

I am indebted to Dr. Theodore Thompson for kindly allowing me to publish this case, and to Dr. John Parkinson for the electro-cardiographic record.

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Memoranda:

MEDICAL, SURGICAL, OBSTETRICAL.

UNUSUALLY LARGE OVARIAN CYST.

In view of the rarity now of extreme abdominal enlargement due to an ovarian cyst, the following details and illustration of such a case may be of general interest.

A woman, aged 57, was admitted to hospital as a case of acute intestinal obstruction; there had been no movement of the bowels for three days. She complained of generalized pain over the abdomen and in both legs, which had lasted only a fortnight. There was no urinary trouble. The menopause had occurred seventeen years previously; menstruation had always been normal. The abdomen had been increasing in size for about twenty years; she had consulted a medical practitioner twelve years prior to admission, but he had refused to operate.

The abdomen was enormously distended, with large veins coursing over it; the swelling gave a remarkably distinct fluid thrill, but the flanks were clear, so ascites was excluded. An ovarian cyst was diagnosed. Both legs were purple up to the knees and cold to the touch; there was dry gangrene of the toes of both feet. The patient said that she had not been able to go to bed for more than six months; she spent the time sitting in a chair. Under a local anaesthetic I cut down to the peritoneum, and then passed a few stitches through it and the wall of the cyst. A trocar and cannula were thrust into the cyst and a No. 3 catheter was inserted. The patient was drained very slowly

for two days, and then a larger catheter was introduced. At the end of four days her legs down to the toes resumed their normal colour and became much warmer; the pain which had been present ceased. The patient could then be put to bed. The fluid which came away was of a dark colour; each measurement of it was checked by two senior nurses. At the end of a week 108 pints 12 ounces had been removed. Some little fluid was still retained, but the patient was getting weaker, so that the catheter was withdrawn. She died a fortnight after admission. At the necropsy an enormous ovarian cyst was disclosed; there was no free fluid in the abdomen. The liver was almost unrecognizable; in shape it resembled a crescent.

For leave to publish this case my thanks are due to Mr. A. G. Bate, surgeon to the Royal Sussex County Hospital.

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TRAUMATIC RUPTURE OF THE DUODENUM AND LIVER: SUBPHRENIC ABSCESS: RECOVERY.

The following case is placed on record on account of the rarity of recovery after such an accident, and, indeed, of the condition itself.

W. A., aged 30, when riding a motor cycle at night, crashed into a motor lorry. He was admitted to Mr. A. B. Mitchell's wards in the Royal Victoria Hospital, Belfast, on August 25th, 1927. When I saw him, some five hours after the accident, he was suffering from shock and writhing with abdominal pain. The abdomen was rigid and tender, especially to the right of the middle line, about the tip of the tenth rib; it was somewhat tympanitic and distended.

I opened the abdomen by a right paramedian incision and found a large amount of blood coming from an extensive tear in the under surface of the liver; after mopping out the blood intestinal contents were seen welling up from the duodenal region; I found a ragged tear far back on the anterior surface of the first part, almost at the angle of junction with the second. I sutured this with some difficulty, as the patient was very stout. The hole was the size of a threepenny bit, and was more or less circular, but there was no induration, thickening, or any evidence of ulceration.

I then made a rapid survey of the small intestine to exclude other perforations; it revealed numerous bruises, but no tear. His condition did not permit of further interference, so I closed the wound, leaving a pack down to the ruptured liver to control bleeding, and a drain.

He caused some anxiety for a few days and developed a moderate degree of wound sepsis, but had no vomiting. By September 4th the temperature was normal, and remained so until September 10th, when it began to rise at night; this continued until October 5th, and he was complaining of left-sided pain when I then saw him. I explored the left subphrenic region, and found pus. Next day Mr. Mitchell helped me to open a very large subphrenic abscess after subperiosteal resection of the twelfth rib. The patient then made steady progress towards recovery, although his pulse rate was 120 for a long time. He left hospital in good health, except for a ventral hernia, on November 12th. He had no gastric symptoms, either before or after the accident.

Berry and Giuseppe record 23 cases in the ten principal London hospitals prior to 1907; all the patients died. Choyce states that only 5 such patients were admitted to the London Hospital from 1899 to 1919, and all died. Rowlands (*BRITISH MEDICAL JOURNAL*, 1923, i, 716) records 23 cases of ruptured duodenum out of 381 of ruptured intestines, but does not give separate mortality.

Belfast.

C. J. A. WOODSIDE, M.B., F.R.C.S.I.

GANGRENOUS APPENDIX IN A STRANGULATED HERNIAL SAC.

The following case of strangulated inguinal hernia seems sufficiently rare to merit description.

An infant, aged 6 weeks, was admitted to Booth Hall Infirmary on September 15th, 1927; the mother stated that she had noticed a swelling in the right groin the day before, which was tender and increased in size. The child was fretful, but had not vomited. The bowels had been opened the day before.

On admission the temperature was 97°, and the pulse rate was 140. The right side of the scrotum was swollen, tense, and discoloured, and the cord on the same side was thickened. The mass was irreducible.

At operation a distended sac was found, strangulated by a tight external ring. Inside the sac was the appendix, which was completely gangrenous, together with the lower pole of the caecum, which was engorged and discoloured, but still viable. The lumen of the caecum and the ileo-caecal junction were outside the sac, a fact which probably accounted for the absence of vomiting. The appendix was removed, and the sac ligatured.

The child recovered well after operation, but unfortunately died eleven days later from enteritis.

AGNES SEASTON, M.B., Ch.B.

Booth Hall Infirmary, Manchester.

CONGENITAL DIAPHRAGMATIC HERNIA.

It may perhaps be worth while to add this to the long list of such cases on record.

On November 8th I was called to see a newborn infant. The nurse informed me that when the head was delivered she noticed the face to be intensely blue, and she completed delivery at once. The apex beat was on the right side. She tried artificial respiration for some time, and as there appeared to be no sign of improvement she sent for me.

When I arrived the infant had been born about thirty minutes. The face was almost blue-black, the abdomen was distended and tense, and the apex beat was at the right nipple; the rate was about 30, and every fifteen seconds or so the infant took a short jerky inspiration. It lived about fifteen minutes after my arrival.

At the *post-mortem* examination the heart was seen to occupy the right side; the right lung lay above it and was very slightly inflated; the left lung was infinitesimal, and the left side of the thorax was packed with coils of intestine. The liver was swollen and congested, and occupied practically the whole abdominal cavity. The hernial opening was in the left posterior quadrant and its edge was quite smooth.

I took the specimen to Dr. Cavendish Fletcher, who was good enough to make the following report:

"The posterior part of the left side of the diaphragm had failed to develop, leaving a hole about three-quarters of an inch in diameter. The posterior side of the hole was bound by the posterior abdominal wall, and the anterior and lateral aspects by a sort of falciform edge quite smooth and evidently not due