RUPTURE OF THE UTERUS WITH EXPULSION OF THE FETUS INTO THE ABDOMINAL CAVITY.

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CASES of rupture of the uterus in which the fetus has been wholly expelled into the abdominal cavity are among the most unfavourable for treatment that can be met with. The patient only too often succumbs as the result of shock, haemorrhage, or peritonitis, in spite of operative treatment.

As I have been fortunate enough to have two such cases that recovered, operation being performed within a short time of the occurrence of the rupture, I think it worth while to record them.

CASE I.

M. A. S., 35, was admitted into the London Hospital with a diagnosis of rupture of the uterus after application of forceps with the head above the brim. On account of haemorrhage the forceps were taken off and examination made. The pains ceased, the head was found to have receded, the intestine could be felt in the vagina, and the fetus was easily palpable under the abdominal wall. The patient had had nine children previously. The first lay transversely and was decapitated, the second and third were small and born without difficulty, the fourth and sixth were delivered with forceps, the fifth and seventh were born without difficulty, the eighth and ninth were delivered by craniotomy. The interspinous diameter measured 9 in., the intercristal 9½ in., the diagonal conjugate 4 in.

On Admission.

The patient was in a state of collapse, blanched, and restless; pulse 124, respirations 44. The abdomen was opened two hours after the occurrence of the rupture. There was much free blood in the peritoneal cavity. The fetus, which weighed 7½ lb., was lying loose in the abdominal cavity. The head showed a certain amount of moulding. There was a vertical tear on the left side, from the vagina to within one inch of the origin of the left round ligament. In the upper two inches the tear was not complete, only affecting the superficial part of the uterine wall. There was a large haematoma in the anterior part of the left broad ligament from which oozing was going on, but no active arterial haemorrhage was seen.

Operation.

Subtotal hysterectomy was performed. There was considerable difficulty in finding the left uterine artery as it lay in the haematoma. The anterior and posterior lips of the cervix were sewn together with catgut, a large rubber drainage tube was left in, lying in the vaginal rent, and the peritoneum was sewn over all the raw surface, except at the point where the tube came through the pelvic floor. Intravenous injection of saline solution was carried out throughout the time of the operation.

After-History.

The patient made a very good recovery. On the ninth day there was a slight flow of urine from the vagina. There was a certain amount of leakage for the next fortnight, but none after this, and the actual cause was not discovered. The temperature for the first ten days was practically normal, but for the next ten days there was some pyrexia. There were no abnormal physical signs to be found, and the temperature came down again and remained normal without any discharge of pus. The patient left the hospital about four weeks after the operation.

CASE II.

E. H., aged 33, was admitted to the London Hospital on January 31st, 1912. She had had seven children, all born without any difficulty. Her last period occurred in the first week in April, and she expected to be confined about January 15th. Labour began at 7 p.m. on January 30th, and the doctor was called in for the first time at 1 p.m. on the 31st. He found the head high up with the occiput behind. Application of forceps for three hours on and off failed to bring the head into the pelvis, the forceps slipping several times. Towards the end of the afternoon he gave her a dose of morphine and sent her up to the hospital. He said that during the time when he was attempting to deliver there was no evidence of tonic contraction or of stretching of the lower uterine segment.

On Admission.

The patient was blanched; pulse 150 to the minute, and very feeble. The fetus could be felt lying free in the abdominal cavity. There was a considerable amount of oedema of the labia and some laceration in the lower part of the vagina. A vaginal examination was not made. The patient was so much exhausted on admission that it was thought best to let her lie quietly in warm blankets for an hour. At the end of this time she was anaesthetized and the abdomen was opened.

Operation.

There was a large quantity of blood in the abdominal cavity. The fetus and the placenta, which were lying loose, were extracted and the uterus was pulled up for inspection. A large tear was found on the left side extending from the vagina into the body of the uterus. There was a haematoma in the left broad ligament.

Suture of the rent, communicating as it did with a lacerated vagina and a large haematoma, did not appeal to one as a promising method of treatment, so it was decided to remove the whole uterus. Panhysterectomy was therefore carried out as quickly as possible. A "button-hole" suture was applied to the cut edge of the vagina to prevent bleeding, and the peritoneal flaps were joined over the vagina by a continuous suture. No drain was inserted, the vagina affording drainage for the haematoma of the broad ligament. Two pints of saline solution were injected into a vein of the left arm during the operation, several pints of saline solution were left in the abdominal cavity, and an intravenous injection of ergotin was given when the patient left the table. The pulse-rate at the end of the operation was between 140 and 150. The vagina was lightly packed with gauze, which was removed twenty-four hours later.

After-History.

The gauze was not soaked through with blood, and there was only very slight oozing after its removal. The vaginal lacerations became rather sloughy, but there was no extensive sloughing. The temperature for the first two nights was 100° F., but after this was normal. The patient made a smooth, uninterupted recovery, and left the hospital on February 19th—that is, twenty days after the operation. The fetus and the placenta weighed 13½ lb. The pelvic measurements were normal. The first time a catheter was passed after the operation, practically pure blood was drawn off. After this the urine was normal, and there was no evidence of any injury to the bladder.

In recent years there have been several discussions as to the best method of treatment to be adopted in cases of complete rupture of the uterus. In the cases here recorded there can be no doubt that the only method of treatment was by abdominal section, as the fetus lay free in the abdominal cavity. Whether it is better to suture the uterus or to remove it can only be decided in each individual case on its merits. If there is much bruising and haematoma it is probably better to remove the uterus rather than to leave it damaged, possibly infected, in connexion with a torn vagina and a haematoma of the broad ligament. Removal of the uterus in such cases is an easy operation, but a good deal of time is required for suturing the raw surface of vaginal wall or cervix, as the raw edge is a long one, complete dilatation being present, and the patient's blood pressure so low that the fact that no oozing is taking place cannot be taken to mean that no bleeding will occur when she has recovered from her collapse.

A SUGGESTION FOR TREATMENT OF CERTAIN FORMS OF COCCYDYNIA.

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I HAVE had occasion to treat a few cases of coccydynia in which the pain was so obviously resulting from pressure upon the coccyx, particularly whilst sitting, that I sought for some apparatus which would obviate this and prove not inconvenient in use. Three such cases occurred in nulliparous unmarried women with a history of pain coming on after sitting for a length of time—as, for example, in church or on a bicycle. Examination showed a prominence of the coccyx which would render it liable to pressure on an ordinary seating surface, and it seemed as though such pressure could be avoided if the tubera ischii could be maintained on raised supports.

I found that this could be effected by a simple contrivance made of fine longcloth shaped on the lines of a napkin provided with two hollow rubber rings to receive the tubera. The rubber rings are 1 in. in depth, 2½ in. in diameter, their contained circles being 1½ in. in diameter. They are held within circular pockets, which close with snap fasteners, with their centres 4½ in. apart. The garment should accurately and closely fit the body, and be worn next the skin. It is kept in position by a broad silk elastic band (A) passing round the waist, and a similar band (B) passes across just above the pubes; c and c₁ are narrower silk elastic—they lie in the folds of the groins, and can be almost instantly undone or done up with the snap fasteners.

The arrangement permits of the use of an ordinary diaper. The rubber rings do not cause noticeable projection when worn under ordinary clothing, as they take up a position below the gluteal folds when the patient is standing.

When a good-fitting model has been obtained it is as well to have at least half a dozen made, as the pair of

rubber rings can be transferred from one garment to another in a minute, and thus a clean one can be used daily.

I have found decided relief from the severe pain of coccydynia has resulted in such cases as I have described, and the plan might be worth a trial by others who have greater opportunities for testing it than I have.

I have deposited my model with Messrs. Lindsey and Sons, instrument makers, Ludgate Hill.

ON THE CAUSATION OF PARENCHYMATOUS NEPHRITIS.

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ALTHOUGH the etiology of acute nephritis is perhaps better understood than that of chronic nephritis, it cannot be said that very much is definitely known as to the actual causation of any variety of inflammation of the kidney. Owing to the association of acute nephritis with many of the infectious and febrile disorders, especially scarlatina, and its comparative rarity apart from these affections, the disease is considered with reason to be due to micro-organisms concerned in the production of the original fever or to their toxins.

In certain cases of nephritis occurring in infectious disorders, the specific micro-organisms have been demonstrated in the kidney or in the urine or in both. For instance, typhoid bacilli have been found in nephritis after typhoid fever, pneumococci in nephritis following pneumonia, etc. This does not necessarily prove the causation of the nephritis in these cases; but, on the other hand, acute inflammations of the kidney have been induced by Pernici and Scagliosi by the injection into the blood of certain micro-organisms, such as the bacillus of anthrax, the *Staphylococcus pyogenes aureus*, etc. It was found also that the toxins of these organisms when injected were productive of renal change, but were less harmful than the organisms themselves. Acute nephritis has been induced by the injection of the diphtheria toxin by Roux and Yersin, Spronk and others.

Beyond the association of acute nephritis with the acute fevers, very little is known regarding the causation. The disease has been attributed to the influence of cold, to pregnancy, to the ingestion of deleterious articles of diet, to drugs, to toxins elaborated in the body as the result of abnormal metabolism, and to many other things.

With regard to the causation of chronic nephritis our knowledge is even more vague. The relation of chronic nephritis to a previous acute nephritis, I believe, far from being understood. And in the absence of more precise knowledge we include in the etiology of chronic nephritis such factors as chronic alcoholism, the continued action of damp and cold, various constitutional diseases leading to anaemia and cachexia, syphilis, and so on—factors which from observations we have learnt to associate with the appearance of the disease. But how these various circumstances operate we are still ignorant.

With the idea of obtaining some further insight into the etiology of renal inflammations, I have recently, in conjunction with experimental work, been engaged in the analysis of 100 cases of nephritis occurring in the wards of the General Infirmary at Leeds during the years 1900, 1901, 1902, 1908, and 1909. Save for the exclusion of cases of definitely interstitial nephritis or primary sclerotic kidney occurring beyond the middle period of life, there has been no selection in the series analysed.

Out of the total of 100 cases, there were 80 cases of undoubted chronic disease of the kidneys. Of the remaining 20, some were unquestionably examples of primary acute disease, whilst the others did not present a sufficiently clear combination of clinical facts to warrant a definite diagnosis. For convenience, both in description and deduction, I propose to consider first the chronic cases.

Before passing on to a consideration of the factors probably concerned in the production of chronic nephritis, it is necessary to mention briefly the different types of disease which are met with. Some cases exhibit marked albuminuria, with perhaps haematuria, scanty urine, dropsy, and anaemia, but no very pronounced toxic symptoms and no retinal changes as a rule. This clinical picture is associated with a distinct type of morbid kidney. The organ is large and pale, differentiation is good, and the capsule strips easily. Microscopically there is a widespread fatty degeneration of the tubules, and to a lesser extent of the glomeruli and the stroma, with also some amyloid change. Indications of interstitial inflammation may be slight, but are probably always present. This type of kidney is known as the "large white kidney."

Another type is that occurring in pale, thin, weakly-looking individuals. There is little or no dropsy, definite but less marked albuminuria; a normal or even an increased quantity of urine, pronounced toxic symptoms, and, usually, retinal changes. In this form the cardio-vascular changes are much more evident than in the preceding. The appearance of the kidney from a case of this kind is equally characteristic. The organ is small and contracted, differentiation is poor, the capsule strips with more or less difficulty, and the surface of the kidney is "pimply." Microscopically there is a great increase in the interstitial tissue, together with degenerative changes in the tubules and the glomeruli. This kidney has been termed the "small white" indurated kidney.

Clinically and pathologically both these types are definite enough when they occur, and present no difficulty in diagnosis. But by far the greater proportion of cases present features common to both varieties, and cannot strictly be classified as either. When we examine the kidneys of such we find a great variety of appearances. There are variations in size, in colour, in the ease with which the capsule can be stripped, and the character of the surface of the kidney. And microscopically these variations can be demonstrated to be due to differences in degree of the pathological changes in the individual tissues affected.

Much confusion is caused by the introduction into clinical medicine of such terms as "large white kidney," "small white kidney," "mixed nephritis," etc. It would lead to clearer conceptions if cases were recognized as cases of chronic parenchymatous nephritis, with little, some, or much induration, bearing in mind that the quantity of urine secreted and the intensity of the toxic symptoms tend to vary proportionately with the degree of induration, whilst the amount of oedema and degree of albuminuria usually vary inversely with the same factor.

Most authorities hold that some interstitial change occurs in the kidney in all cases of chronic parenchymatous nephritis, and that the degree of induration is largely a matter of time. That is to say, the longer a patient lives with chronic parenchymatous nephritis, even though at first the symptoms suggest that there is very little fibrosis of the kidney, the more does the clinical picture tend to approximate to the type which we have learnt to associate with much induration of that organ.

It is not my present object to discuss the question whether or not the same factor is responsible for the development of both the tubal disease and the interstitial fibrosis. I have therefore made no attempt to classify the cases according to type, but have considered them all, for my present purpose, simply as cases of chronic parenchymatous nephritis.