prolapse can occur in nulliparae and virgins, in which case an elongated cervix is almost invariably the cause. As in hernia, so there are degrees of prolapse; there may only be a slight bulging of the anterior vagina wall with slight descent of the cervix, or the os may descend to the vaginal orifice; or, as a final stage, the uterus may be protruded completely from the vagina. A small degree of prolapse as a rule gives more pain than a procidentia.

The treatment should be the same as that adopted in an ordinary case of hernia elsewhere, which, in short, means a truss for relief, and an operation for cure. But before discussing treatment in detail, let me say a few words about prophylaxis. Most cases of prolapse are the result of parturition, therefore it must follow that something can be done to lessen the incidence of this complication. During labour it is all-important to preserve the pelvic floor; and if it has been lacerated an efficient repair is very necessary for the future of the patient. It is so common to find a thin skinny structure where, before labour, a strong support in the form of the perineal body existed. Then, in the third stage of labour I deprecate the commonly adopted plan of forcing the uterus down in order to express the placenta; this practice must weaken the fascial supports round the uterus, and twice I have seen a careless midwife produce an inversion of the uterus by her vigorous efforts to expel the placenta for the treatment of haemorrhage; inversion is more readily produced by this procedure than by pulling on the cord. I may be guilty of heresy, but I see no harm in delivering the placenta from the vagina by pulling it out, instead of using the uterus as a wedge to push it out. In the puerperium much might be done by maintaining muscular tone, and for this end I advise not only abdominal exercises, but exercises for the levator ani muscle. The latter are carried out by telling the patient "to contract herself as if she were trying to hold in a motion." In the treatment of early cases following childbirth the patient should be made to spend most of her time in the recumbent position, but exercises should be carried out thrice daily. If the uterus has not involuted completely, a course of ergot and strychnine will be beneficial. Treatment on these lines is advised for a month, and if the prolapse is still present at the end of this time the condition must be regarded as one of hernia, and a truss in the form of a pessary is necessary. There is no question as to the relief so obtained. If a pessary or a truss gives relief and is comfortable I see no harm in its use. I use only soft rubber pessaries, and I have many patients who complain of pelvic pain immediately they cease to wear them. They must, of course, be changed and cleaned regularly. Many patients, however, are not relieved by wearing a ring pessary—either it cannot be retained, or it fails to give relief; in these cases operative treatment is essential.

I perform one operation for prolapse only, and this I call the operation for the radical cure of perineal hernia. In the last eight years I have practised Fothergill's operation, with certain modifications, without experiencing a failure. Among others, I have operated on cases of procidentia which had previously undergone some form of ventrofixation operation with subsequent recurrence of symptoms, and obtained a complete cure. The chief points in the operation are: (1) careful pre-operative preparation, (2) amputation of the cervix, (3) restoring the muscular and fascial supports under the bladder, (4) restoring the muscular and fascial layers in front of the rectum, and (5) building up a new perineal body.

CONCLUSION.

Earlier in this address I threw doubt on the value of many operative measures for the relief of chronic pelvic pain. I close it with an enthusiastic faith in the surgical treatment of the most constant cause of this condition. Why is this? It is because surgery is able to restore a damaged part to its originally correct anatomical state. In the many "pexy" operations which are practised, the failure of them is, in my opinion, attributable to the fact that organs are placed or tied up contrary to Nature's intention.

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NON-INFECTIVE ARTHRITIS IN WOMEN.

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WHEN the process by which a morbid condition arises is obscure its elucidation may be facilitated by considering the results of treatment. This may be true whether the method of treatment has been arrived at empirically or not. We have found that the process producing arthritis may, in a certain class of case, be brought to an end by heating the pelvic organs by diathermy.

Since 1912 the treatment of arthritis by diathermy has been investigated in the electrical department of St. Bartholomew's Hospital. Before 1914 it was found that diathermy had a marked effect on gonococcal arthritis when applied to the affected joints. After the war it was found that it was unnecessary to apply the current to the joints if the application were made to the foci from which dissemination occurred—namely, the cervix uteri in women and the prostate and vesicles in men.

As the work proceeded it became evident that patients were being successfully treated in whom gonococcal infection was more and more doubtful, and later that cases of arthritis, both in men and in women, in whom gonorrhoea had definitely not occurred were also efficiently treated by diathermy. It was supposed that the effect upon the arthritis was due to the action of the current upon the cervix or prostate and vesicles infected with organisms other than gonococci.

A series of cases has, however, occurred in which it seemed clear that no infection existed. These cases were either in young women in whom the onset of the arthritis coincided with the establishment of menstruation, or in women at or about the age of the cessation of the menstrual function. An illustrative case at either end of menstrual life will be described later. It is held, we believe, by most authorities that the so-called-rheumatoid arthritis is in all cases due to a focus of infection giving rise to a toxic arthritis, or to an arthritis in which there is actual bacterial invasion of the structures of the joint. This opinion is held in spite of the fact that in many, if not in most, cases a focus of infection is not found. We have no doubt, however, that the number in which a focus is not discovered would be considerably reduced if the cervix were more often examined.

The so-called rheumatoid arthritis is far commoner in young women than in men. It seems a fair deduction from the results of this treatment that this is due to the fact that the cervix is liable to an infection capable of producing the arthritis, and that although the prostate may play a similar part in the causation of arthritis in men it is not nearly so commonly infected with organisms other than gonococci in comparatively young persons.

There still remain cases in which a focus cannot be discovered and which are not due to an infective toxæmia. It is true that in these the teeth are often affected by the same process as the joints, and are held to be responsible for the toxæmia when they are really a manifestation of it. This accounts for the great number of cases in which complete removal of the teeth is not followed by any improvement in the condition of the joints.

It seems that at all events some of these cases of arthritis—namely, those in which no focus of infection can be found—are due to absence or deficiency of hormones of the ovary or other pelvic organ. These are amenable to treatment by diathermy applied to the pelvic organs. Heating of these organs by diathermy has resulted in subsidence of the inflammation of the joints and complete functional restoration, unless such new bone formation or other organic changes have taken place as to render restoration of function impossible.

In virgins the treatment may be effectually carried out by means of a rectal electrode, the procedure being similar to that used for heating the prostate in men. In married women an intrapelvic electrode, introduced into the vagina, is used.

CASE I.

In a girl, aged 16, the illness began at the end of 1923. The symptoms were then a general feeling of illness and pain in the left hip. She was confined to bed for a short time, but was able to walk after this till just after Easter, 1924. At this time the knees became swollen and stiff, and when admitted to the West Middlesex Hospital on May 1st she was unable to walk. Most of the joints were affected, the knees and wrists most severely.

When first seen the knees were flexed and could not be extended beyond a right angle, and the wrists were fixed in an extended position; the patient was thin and anaemic. Diathermy was applied by a rectal electrode on eight occasions, over a period from June 2nd to June 30th, 1924. At the end of this time the knees could be completely extended and there was full range of movement of the wrists and fingers. There were no pains and she was beginning to walk. Synovial swelling of the knees was still present. The quadriceps extensor muscles, especially the vastus internus, in both limbs were wasted.

Massage and exercises were then commenced. On August 8th her general condition was good and she walked fairly well, but with an awkward gait. On November 3rd she walked well. All joints were freely movable. There was slight swelling of the wrists and knees. On November 27th the wrists and knees were still slightly swollen. She was then doing physical exercises, including skipping.

At Christmas, 1925, complete functional restoration of all joints had taken place. She was fat and well, but still had an awkward gait.

Menstruation had started at the age of 15, and had been regular for six months. It then ceased for six months. At the end of this time it was re-established and remained regular afterwards.

CASE II.

A woman, aged 40, suffered from generalized arthritis resulting in much suffering and ill health. She was so crippled as to be hardly able to walk with the aid of two sticks. She was thin and had a sallow, unhealthy appearance. There was a marked tendency to growth of hair on the face. The wrists, knees, and ankles were swollen, painful, and tender. The right knee could be fully extended, but the left was flexed and could not be extended and the patella was fixed. The left hip was flexed and fixed in that position.

The illness had begun two and a half years previously, and she had had a long course of treatment, including various forms of electrical treatment. During this the tonsils had been removed without effect. Treatment by diathermy applied by a rectal electrode was begun on January 24th, 1924. At the end of one month her general health had much improved, and she had gained 7 lb. in weight. The joints were more movable and almost free from pain. Treatment was then left off till November, when she was found to have continued to improve during the interval. Her general health was good and pain slight. The right knee was normal, the left knee only slightly movable from the fixed position of 120 degrees. The left hip was still fixed. The treatment was renewed for one month and then left off till March, 1925. At this time her general health was good. There was no pain, but the left knee remained flexed to 120 degrees and almost fixed.

During the last course of treatment she had menstruated quite normally, though the periods had been absent for four or five years previously. X-ray examination of the left knee showed diminution of joint space, great lipping of upper and lower margins of the patella with osteophytic formation, and extensive lipping of tibia and fibula at joint surfaces, with a fair amount of bone destruction.

It is obvious that when the destruction and new bone formation in the joint has advanced to such a condition as existed in this case in the left knee, restoration of function is out of the question. The treatment resulted, however, in relief of pain and in restoration of function in the other joints, and a return to good general health. It is only when the arthritis is recent and destruction and organic changes of bone have not proceeded beyond a certain point, that complete functional restoration may be obtained, as occurred in the first of these two cases.

Both of these patients were virgins, and in neither was there any evidence of infection of the pelvic organs. In both there was evidence, apart from the arthritis, of deficiency of ovarian internal secretion. In the younger of the two patients it may be considered doubtful whether the onset of puberty can be considered abnormal. There is, however, some evidence of deficiency of ovarian internal secretion in the interval of amenorrhoea after the original onset of menstruation. In the older there was evidence of deficiency of ovarian internal secretion in the early cessation of menstruation and in the growth of hair on the face. It is noteworthy that in this case, as in some others of a similar kind treated in this way, the menses appeared after having ceased for some years.

Corroboration of the possibility of stimulating the formation of the ovarian hormone by heating the pelvic organs

consists in the relief by this means of subjective symptoms and irregular haemorrhage due to the deficiency of ovarian internal secretion at the menopause. Several such results have been obtained recently in this way in the electrical department of St. Bartholomew's Hospital.

The object of this paper is to put forward the contention that there exist cases of arthritis occurring at either end of menstrual life which are not due to infection, that in some of these, at all events, the arthritis is due to deficiency of ovarian hormone, and that in these the arthritis and accompanying ill health are efficiently treated by heating the pelvic organs by means of diathermy.

This is the first of a series of articles which we hope to publish on work carried out in the electrical departments of St. Bartholomew's and West Middlesex Hospitals on the treatment of arthritis and of gynaecological cases.

A REVIEW OF THE LATER RESULTS OF INSULIN TREATMENT.*

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In this paper I propose to review the results obtained by the insulin treatment of 100 cases of diabetes, in all of which the treatment began over a year ago, and in rather more than half of which it has continued for nearly two years. Detailed consideration of early progress under insulin treatment will be omitted—first, because this matter has already been extensively reported, and it is now well known that the vast majority of cases do very well in the initial period; and secondly, because the progress of patients after their return to ordinary life is a matter of greater practical importance.

The cases have been taken in strict chronological order, and no case of any type that has received insulin treatment for diabetes has been excluded, with the exception of 15 patients it has been impossible to trace. Of the 100 cases (44 in hospital, 56 in private) whose records are available, 25 are now dead (13 in hospital practice, and 12 in private); 15 deaths occurred during the early period of treatment, the remainder within a few months of beginning insulin.

Causes of Death.

In no fewer than 17 of the 25 cases it was clear that death resulted from some complication of the diabetes: 5 of them had severe tuberculosis (4 pulmonary and 1 renal); gangrene was present in 4; 2 patients died of angina, and 2 of heart failure without coma (both were over 70 when insulin treatment was tried as a last resort); 3 cases had gross septic infections (1 mastoid disease, 1 pyonephrosis, and 1 ischio-rectal abscess); 1 case of renal infantilism with slight diabetes died of uraemia; 7 cases died of coma that was apparently uncomplicated (there were *post-mortem* examinations in 3 only). In 2 early cases which occurred when the supply of insulin was limited the treatment was inadequate; 2 others were of the special type of coma to be described later; in 1 case death followed rapidly from coma when insulin was left off against advice and an unrestricted diet was taken; the treatment of the 2 remaining cases was begun when the coma was far advanced. One patient died as the result of insulin treatment, a woman with diabetes of moderate severity who was doing well when she suddenly became unconscious. The diagnosis of hypoglycaemia was made at once, and glucose was given intravenously. She appeared to rally slightly and a small injection of adrenaline was made intravenously to expedite recovery, but ventricular fibrillation occurred and was immediately fatal. Death was probably due to the adrenaline, and this case demonstrates again the danger of the intravenous injection of this drug.

An examination of these details shows that the 25 per cent. mortality recorded in this series gives too serious an

* Being the substance of a post-graduate lecture at the General Hospital, Birmingham.