this being to draw up the bladder well within the vulva; at the same time the top of the vagina was fixed to the peritoneum and to the "central knot" formed by the firm attachment of the cut ends of the uterine ligaments.

At a second operation the perineum was repaired, and the vaginal opening narrowed, the anterior edge of the new perineum being brought well forward so as to support the urethra and lower part of the anterior vaginal wall. The results have been very satisfactory, both patients being able to get about as they wish, with no urinary inconvenience, and without pessaries.

Hysterectomy for prolapse has been objected to by some operators, who have found that the patient continues to suffer from a prolapse of the vaginal walls. As I have said, the mere excision of the uterus cannot be expected to cure the hernia of the rest of the pelvic floor. This object, however, may be obtained by careful attention to the steps of the operation subsequent to the actual excision of the uterus, namely:

1. The drawing together of the peritoneal surfaces and the cut ends of the uterine ligaments.
 2. The making of a broad union between the anterior and posterior vaginal walls, and their fixation to the "central knot" formed by the remains of the various uterine ligaments.
- If these points are attended to the operation should meet with the desired success.

ON VAGINAL HYSTERECTOMY FOR UTERINE PROLAPSE.*

By R. C. CHICKEN, F.R.C.S.,

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It may be assumed that there are cases of prolapse of the uterus so severe and confirmed that hysterectomy alone gives any hope of a good result, even then recurrence sometimes following. Within this field there are three points worthy of consideration:

1. The reason that even hysterectomy fails to cure the prolapse.
2. The anatomical conditions which are the cause of this.
3. An operation specially modified to meet the difficulty.

As far as my experience enables me to judge, I find that vaginal hysterectomy for prolapse is practically the same as that for cancer. The method of operation and the incisions are the same, and the details of the various steps are not modified by the essential difference of the object to be attained. This, in my opinion, is wrong technically; for although when performed on the usual lines it may at times be attended by success, this is chiefly due to the floor of the pelvis having become tightened by the casual corrugation and folding of the vaginal flaps.

In removing the uterus for cancer, our great object is to completely excise the growth and its surrounding parts, without impairing the functional activity of the neighbouring organs. In hysterectomy for prolapse, the object is not so much to get rid of the uterus and those structures which promote prolapse. Although there are many points in common in the two operations, there is one fundamental difference. The one demands that the whole of the uterus be removed, as possibly containing isolated cancer cells; the other admits of voluntarily leaving behind any part of the uterus which, in the opinion of the operator, may assist in preventing the recurrence of prolapse. It is not within my scope to discuss the plastic operations that have been proposed, such as those of Freund and Baldy; they are well known.

The first step in designing an operation for inveterate prolapse is the recognition of the causes of prolapse and the nature of the structures on which the strain falls after the uterine ligaments have relaxed. The burden practically falls on the broad ligaments, which are bound to stretch under the continual application of strain. The uterus has no definite short firm attachment except to the base of the bladder, which is, however, itself so freely movable that the gain is fictitious.

* Abstract of paper read before the Nottingham Medico-Chirurgical Society, March 7th, 1900, at which specimens illustrating the operation were shown.

The object then of an operation is to give a firm rigid attachment which will form a new pelvic floor; but if we cannot do this to remove the uterus and fix the apex of the vagina firmly by a short broad pedicle to a point as near its normal position in the pelvis as possible, so that it will be enabled to bear the strain required.

The loosest attachment is that connecting the neck of the uterus with the posterior vaginal wall, and unless this is specially considered no operation can ensure success. The second consideration is that any modification introduced should admit of easy and quick performance, offer as little risk as possible to the neighbouring structures. Beyond the slight support afforded by the vesical folds, the uterus is rather helped to fall than hindered by its connection with the bladder. The posterior vesical attachments are necessarily very loose, and this allows of the easy descent of the uterus. In fact functional dilatation of the bladder demands that alteration of relative position should be physiologically possible; and if physiologically therefore pathologically also. The posterior attachments of the uterus are equally unstable. The roof of the posterior vaginal fornix forming the floor of Douglas's pouch has no rigidity whatever, so that assuming that the lateral and other attachments of the uterus have been relaxed by pregnancy, there remains but very slight hindrance to stretching of the upper pelvic supports.

Is it possible now to strengthen the pelvic floor by making the summit of the vagina a fixed point that is more certain and solid than a chance adhesion? The entire removal of the uterus is ineffectual unless the cut surface at the base of the bladder happily forms peritoneal adhesions high up instead of to the raw edge formed by the posterior primary incision. The plan I recommend is:

1. The removal of a part only of the uterus.
2. The removal of the unattached portion of the posterior fornix.

In the state of complete prolapse the relationship of the bladder, ureters, and uterus is changed. The fundus of the uterus by its descent carries the posterior half of the bladder and the ureters with it, so that the posterior wall becomes the anterior. In complete prolapse the anterior uterine surface and sides are covered by bladder and ureters. To guard against any accident in operating produced by this abnormal anatomy a sound is passed backwards and downwards into the bladder as it lies exposed in front of the uterus. The continual dexterous manipulation of this by an assistant shows the limits of the bladder. By means of scissors the bladder is dissected off the sides and cervix of the uterus, the incision being in uterine tissue; the points are now turned sharply backward and the uterus cut across at the level of the cervix into Douglas's pouch. Two fingers of the left hand are passed through into the peritoneal cavity, the fundus of the uterus seized, retroverted, drawn down, and amputated at the point of peritoneal reflection on its anterior surface, the broad ligaments having previously been seized with forceps and ligatured.

There is now left attached to the base of the bladder a solid piece of uterine tissue. On the breadth and firmness of union which this is able to make will partly depend the success of the operation by resisting downward pressure in micturition and defæcation; in short, it acts as a buttress in forming a new pelvic floor. The next step is to make a posterior fixed attachment for this stump. We find at this stage that there is left the cervix and os uteri hanging on to a long flap of mucous membrane and peritoneum which is the stretched and useless posterior fornix; this is cut off by a pair of scissors close to the base. To this raw surface at the back of the pelvis the stump of uterine tissue is easily brought in contact after bleeding has been stopped. The parts are retained in position by gauze tampons.

By these means not only is there a broad, firm union of two fixed inelastic tissues, much preferable to a narrow casual adherence of thin, stretched membrane, but it gives a fixed support to the neck of the urinary bladder much preferable to the very thin walls which are left after the operation of vaginal hysterectomy for cancer.

The only part which requires special care is the dissection involved in separating the displaced bladder.

The points for which advantage is claimed are:

1. The leaving behind of a solid piece of uterine tissue,

2. The transverse cut across the uterus allowing of easy retroversion of fundus and facility of applying ligatures to vessels.

3. The removal of the whole of the floor of Douglas's pouch.

4. The incision in the posterior fornix being made as far back as possible; the resulting scar admitting of no "play" between the bony pelvis and the neck of the bladder.

A CASE OF PUERPERAL SEPTICÆMIA: TREATMENT BY ANTISTREPTOCOCCUS SERUM:

RECOVERY.

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ON Christmas Day, 1899, I was asked by another medical man to see a woman for him, who had been confined by a midwife on December 19th, and who he feared, from what her husband said, was probably suffering from puerperal fever. As I had on the previous day been called to see a patient moribund from general peritonitis who had been attended by the same midwife on December 17th, I had little doubt as to the nature and cause of the disease in the present case.

On visiting the patient I found her in bed, with an anxious look on her face. The temperature was 101° , pulse 100; tongue dry and furred. There had been diarrhoea, the nurse told me, in the night, and she had been restless and light-headed. On examination the abdomen was somewhat distended; the uterus was enlarged, and tender on palpation. There was a very small amount of offensive discharge. I was informed that the patient, who was aged 37, had been confined on the 19th, and had first seemed ill on the 21st, but no medical advice had been obtained until I saw her. Having washed out the uterus with perchloride of mercury (1 in 2,000), I gave 10 grains of quinine, and ordered 5 grains to be given every four hours. I also put the patient on brandy (8 ounces in the twenty-four hours), milk, beef tea, etc.

In the evening the temperature was 101.2° , pulse 120. Having obtained a supply of antistreptococcus serum (Burroughs and Wellcome), I injected 10 c.cm. beneath the skin of the abdomen. As the patient complained of noises and singing in the ears I stopped the quinine during the night.

December 26th. The patient was much worse. She had a rigor in the early morning, and was sweating profusely; temperature 105.5° , pulse 144. She was quite conscious, and complained of no pain whilst lying still. The abdomen was slightly more distended and more tender on palpation. There had been no further diarrhoea since the previous day. I injected 10 c.cm. of antitoxin, and washed out the uterus with chinisol 1 in 2,000. The quinine was resumed every four hours. In the evening the temperature was 103° , the pulse 144. The abdomen and general condition were much the same as in the morning, and the patient was taking nourishment well. A further 10 c.cm. of antitoxin were injected.

December 27th. Patient was better; temperature 101° , pulse 120, tongue furred. The abdomen was still full, but not so tender; there was, however, a good deal of tenderness over the uterus, and also in the region of the spleen, which was enlarged. The bowels had been moved; the uterine discharge had almost ceased. Ten c.cm. of antitoxin were again injected and the uterus washed out with chinisol. On account of deafness no more quinine was given.

In the evening the temperature was 100° , pulse 100. Patient said she "felt beautiful"; she had been dozing a good deal. Antitoxin was again injected.

December 28th. The improvement continued; temperature 100.8° , pulse 96. The abdomen was quite lax, the uterus being enlarged, and still tender. The uterine discharge was small in amount, and not offensive; lactation had not been interfered with from the first. Antitoxin was injected, and a uterine douche administered.

At night the antitoxin was repeated, and 2 grs. of calomel given, as the bowels had not been open for two days.

On the following day the temperature came down to 99.8° , and on the evening of December 30th it was 99° . I still continued washing out the uterus, however, using perchloride of mercury 1 in 4,000, and injecting 10 c.cm. of antitoxin each morning.

On January 1st, one week after beginning treatment, I stopped both, and for the next five days the patient made steady progress, the temperature keeping below 100° , and the pulse about 90. The abdomen was quite lax, but there was still a good deal of tenderness over the uterus and in the region of the spleen. The patient was taking food well, being allowed to have pretty much what she liked. The bowels were kept regular with an occasional aperient.

On January 6th the patient did not seem quite so well; the temperature was 100° , and the pulse 100, but there was nothing fresh to be detected in the condition of the abdomen.

On January 7th the temperature was 101° and the pulse 120. On vaginal examination I found that the uterus was still enlarged and the os patulous. Thinking there might be some septic matter retained, I introduced a curette and scraped the uterine walls well, following this with a douche of perchloride 1 in 4,000. A good deal of shreddy, unhealthy-looking material came away. In the evening the temperature was 100.8° , and the pulse 108. Patient said she felt better, but had had some pain after the curetting.

On the following day, January 8th, whilst the general condition was no worse, the temperature had gone up to 103.2° , and the pulse was 120. Fearing that there might be fresh septic infection, I resumed the injection of antistreptococcus serum, giving 10 c.cm. morning and night for the next

three days, and washing out the uterus once daily. The temperature remained between 102° and 104° , and the pulse about 120. There was very little constitutional disturbance, however, and the patient took nourishment fairly well. The abdomen remained lax, but there was a definite sense of resistance on the right side of the uterus. *Per vaginam* this was felt as a thickened mass filling up the right side of the pelvis, and the uterus was found to be somewhat fixed and at the same time pushed over towards the left. The examination caused a good deal of pain. The patient at this time complained of some pain in the lower part of the abdomen on passing water, and especially if the bowels had not acted. She did not lie with her legs drawn up. As I considered that the maintenance of the temperature was most likely due now to local inflammation, probably some pelvic cellulitis on the right side, I discontinued the washing out and injections of serum from this date (January 11th) onwards. On the following day the temperature was still higher— 104.2° —and pulse 132, but the general condition remained fairly satisfactory. After this, however, there was a gradual fall of temperature, accompanied by an improvement in the pulse-rate. The mass on the right side of the pelvis also became less marked and not so tender, but the patient still had some pain on passing water, the pain beginning some little time before the act of micturition, and quite disappearing after the bladder had been emptied.

On January 17th the temperature had fallen to 99° ; there was another rise to 101° on the 19th, due possibly to constipation, but it fell again, reaching the normal on the 21st. Since that date convalescence has gone on uninterruptedly, and at the time of writing (February 15th) the patient gets up for some hours every day, and says she feels very well, and has not the slightest pain anywhere.

In reviewing the case I think one may safely say that the actual process of septic absorption came to an end after the fifth or sixth day of treatment, the temperature having then come down to 99° F. and the pulse to 88. The rise again at the end of another week (January 7th) was probably due to the onset of some local trouble in the way of pelvic cellulitis. That being so, I now think that it was unnecessary to use the curette as I did, although there was some slight discharge at the time. At any rate, I should not feel inclined to do so in a similar case again, but should content myself with washing out the uterus. Similarly the second series of injections I gave at this period were probably not wanted and did no good, but I thought it only right to use them, lest it should be the case that there was some fresh streptococcal infection.

In conclusion, seeing that the other patient, attended two days earlier by the same midwife, had died of acute general peritonitis, it is reasonable to suppose that this case would also have proved fatal had it not been for the treatment adopted. Further than this, it is impossible to say how much of the success was due to the use of antitoxin, and how much to the uterine douches, etc. At least I think we may conclude that the serum treatment does no harm. From first to last, in a period of eighteen days, I injected into this patient 170 c.cm. of antistreptococcus serum, and, as far as I can tell, she had no unfavourable symptoms whatever, either local or general, as a result of it. Of course, the strictest antiseptic precautions were observed, the syringe and needle being boiled before and after use, and the skin carefully cleansed with soap and water, ether and carbolic lotion 1 in 20.

My own view of the matter is that no one should be satisfied, when treating a case of puerperal fever, unless, in addition to the ordinary methods of treatment, he employs also the use of the antistreptococcus serum, beginning it of course at the earliest possible date.

[Since writing the above I have been interested to read in the BRITISH MEDICAL JOURNAL of February 17th, p. 378, the reports of two cases of puerperal septicæmia treated by the injection of antistreptococcus serum. With reference to the statement by Dr. Anderson that he found the serum "a most potent remedy with a powerfully depressant effect on the circulation," I can only repeat what I have already said, that in the present case, so far as I could tell, no bad symptoms whatever, either local or constitutional, resulted from the injection of the antitoxin. Beyond the actual discomfort of the needle the patient did not seem to mind the treatment at all, and she certainly never showed any signs of faintness or cardiac depression.]

THE FIRST SEASIDE SANATORIUM IN PORTUGAL.—Thanks to the persevering efforts of Dr. Jose de Almeida, a seaside sanatorium for scrofulous children has recently been established in Portugal. Dr. Almeida induced the Government to hand over to him for the purpose the dismantled fort of Junqueiro, and with the assistance of a number of charitable persons, including one of our countrymen, he has had it fitted up as a sanatorium with accommodation for twenty-four children. In connection with the sanatorium there is a separate building for the isolation of cases of contagious disease.