A Lecture
ON
THE DEVELOPMENT OF VAGINAL OPERATIONS FOR GENITAL PROLAPSE.

GIVEN TO GRADUATES AT ST. MARY'S HOSPITAL, MANCHESTER,
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VAGINAL surgery is now uniformly successful in cases of genital prolapse, and recurrence is rare, even when pregnancy and labour follow and severely test the efficiency of the treatment. What exactly is meant by the term "genital prolapse"? Judging from the published writings, the private correspondence, and the conversation of medical men, it includes four conditions, which occur alone or in combination.

CLASSIFICATION OF CASES.

1. *Cystocele*, in which the anterior vaginal wall with the urethra and part of the bladder bulges in the vulvar cleft, the uterus remaining in its usual position.
2. *True prolapse*, in which the anterior vaginal wall, urethra, and bladder descend first, followed next by the cervix, and last by the posterior vaginal wall.
3. *Long cervix with loose uterus*, in which the cervix emerges first at the vaginal orifice, followed by the vaginal walls, inverted from above downwards, round the descending uterus.
4. *Rectocele*, in which the posterior vaginal wall and the anterior rectal wall descend together and bulge in the vulvar cleft.

The three combinations are (*a*) rectocele and cystocele; (*b*) rectocele and true prolapse; and (*c*) rectocele and long cervix. Nearly all the cases that are sent to hospital as examples of genital prolapse fall into one or other of these seven categories—four conditions and three combinations of them. It may be taken for granted that in nearly all these cases the perineum is defective, and has either been torn or has been stretched by the descending structures.

The operations used are combinations of anterior colporrhaphy and amputation of the cervix; followed by perineorrhaphy unless there is rectocele, when colpo-perineorrhaphy is done. Our present object is to trace the origin and development of these operations. We must remember that the great majority of methods and technical devices have blossomed for a time, only to fade away into the limbo of oblivion. They have been divergences from the direct line of evolution. Our predecessors and we ourselves have proved all things and have held fast, for the most part, only that which is good. Thus we can omit reference to the greater part of the work that has been done and most of what has been written, because they have led nowhere, and their main use has been to show how things should not be done.

ANTERIOR COLPORRHAPHY.

Marshall Hall[1] of London thought out an operation for prolapse which was done for him by a surgeon named Heming in the year 1831. A large portion of the anterior vaginal wall was cut away, making a wound one and a half inches wide extending between the cervix and the vaginal outlet. The first suture was put in at the cervical end of the wound, the next below it, and so on. Thus the prolapsed organs went up into the pelvis as the wound was closed from side to side. This was very like a modern anterior colporrhaphy, and an independent observer reported a couple of years later that the patient was cured. But the operation was lost for a time, as Heming's followers seem to have been afraid of injuring the bladder. They made their wounds lateral instead of anterior, and some were content to "scarify" or "denude" the surface instead of removing the whole thickness of the vaginal wall.

In 1844 Kilian made a wound which was anterior and triangular, with its base towards the cervix. In 1866 Marion Sims[2] excised an oval portion of the vaginal wall, cutting through its whole thickness. But it is not clear that he continued to do this, and both Sims and Emmet modified the operation without improving it. Savage in 1858, Aveling in 1866, and Morton in 1869 seem to have used rather half-hearted methods. But Gaillard Thomas[3] certainly realized the importance of cutting through the whole thickness of the vaginal wall, for about the year 1872 he began separating it from the bladder by means of an instrument like a glove-stretcher introduced through a small incision. From this time onwards anterior colporrhaphy was a recognized operation mentioned in most books.

AMPUTATION OF THE CERVIX.

Removal of the cervix for genital prolapse was performed by Huguier[4] in 1848. He did a high operation, using the scalpel, though he is said to have condescended to the écraseur in some of his later cases. Goupil[5] removed a smaller portion of the cervix by means of the écraseur. In 1866 Sims[2] was amputating the cervix in some of his cases, and he much improved technique by closing the wound with sutures instead of leaving it to granulate. The well known method associated with the name of Schroeder subsequently came into general use, and innumerable modifications have been described.

PERINEORRHAPHY AND COLPO-PERINEORRHAPHY.

The distress of women who had been torn right through into the rectum must have called for surgical treatment from a very early date. The operation was successful in the hands of Guillemeau, a pupil of Paré, and from his day onwards cases were recorded from time to time. Dieffenbach[6] published his work in Berlin in 1829, and Roux followed in Paris in 1834. The name of Baker Brown may be mentioned, as he read a paper on the subject in London in 1851. From that time on perineorrhaphy for complete tears has been improved by surgeons too numerous for citation.

Perineal operations for prolapse also had another origin, for in certain communities it was usual to protect the virginity of the unmarried girls by rawing the inner surfaces of the labia majora so that, as healing occurred, they united in the middle line. Thus a barrier was placed across the vulva which was ultimately divided as a part of the ceremony of marriage.

This idea was taken up by Fricke[7] in Germany in 1832, and by uniting the labia majora he bridged the vulva with the object of supporting the prolapsed uterus. This operation on the vulva was called episiorrhaphy, and it had a very considerable vogue. But from the labia majora the surgeons gradually worked back to the perineum and up into the vagina; and they dropped episiorrhaphy as they developed perineorrhaphy and posterior colporrhaphy. Simon's[8] "kolporrhaphia posterior" was done in 1867, and was an extensive procedure occupying two hours. In 1864 Emmet[9] was removing an oval portion of the posterior vaginal wall at one sitting and repairing the perineum at another; but by 1880 he had begun to combine the two operations in one—colpo-perineorrhaphy.

Between 1874 and 1881 Hegar[10] modified the operation until it closely approached its modern form. He removed a triangle of posterior vaginal wall whose apex was near the cervix in the posterior vaginal fornix, while its base curved along the margin of the perineum. He worked from above downwards, sometimes in stages, traction being aided by the use of the knife. The wound was closed by a combination of deep and superficial sutures. Bischoff of Basle, Martin of Berlin, Pozzi of Paris, and many others modified this operation. The common error seems to have been the belief that it would cure uterine prolapse. Garrigues was one of the first to recognize that its use is for rectocele.

RESULTS.

There are many indications that for a long time the ultimate results of vaginal surgery for prolapse were not brilliant. Some writers definitely say so. Walter Whitehead[11] of Manchester, for example, wrote a good paper in 1871. He was aware of the distinction between true prolapse and long cervix. He recorded fifteen cases which he had treated, using anterior and posterior colporrhaphy and amputation of the cervix; but he expressed himself as very far from pleased at the results. Routh was using

similar operations, and Emmet's work in 1880 was of the same character. But no one gave definite teaching as to how to cure prolapse. The multitudes of variations and modifications that were introduced show that in general results were not good. Indeed, the opinion that up to 1899 there was no satisfactory surgical treatment for prolapse is upheld by Dr. R. H. Paramore.[12] There is no more thorough student of the literature of prolapse than this author, whom I thank for much information and many references. Another indication of the partial failure of vaginal operations is the great popularity which was gained, in spite of their inefficiency, by various abdominal suspension operations.

But, though the results of plastic vaginal surgery were not uniformly good, still most surgeons could say that many of their cases were successful, and certain operators secured permanent cure in nearly every case. Donald,[13] for example, began operating in Manchester in 1888, and has always been so successful with a wide anterior colporrhaphy, amputation of the cervix, and a very efficient posterior colporrhaphy, that he has never thought it desirable to use any abdominal suspension or other method. My own personal experience dates from 1895, and the results were good from the first. But when amputation of the cervix was omitted recurrence was occasionally noted, and some cases failed to stand the test of pregnancy and labour. I have never used suspension or other methods, nor have I seen them employed in the Manchester Royal Infirmary or St. Mary's Hospital.

Rationale of Vaginal Operations.

Why did plastic vaginal operations succeed in some hands and in some cases while they still failed to satisfy the majority of surgeons? The objects of narrowing the vagina, shortening the uterus, and restoring the integrity of the perineum were generally attained. Why did the prolapse so frequently recur? Such questions disturbed our minds for long, and they were only answered in the light of new information gained by surgical experience and anatomical research as to the normal supports of the pelvic viscera. The rationale of prolapse and its treatment was only explained when it was realized that the uterus, vagina, and bladder are not so much suspended from above or propped up from below as they are attached by their sides, where they receive their blood supply, and held in their normal position by the subperitoneal tissue which intervenes between the organs and the more fixed lateral structures in the pelvic floor. This had been described by various anatomists, including Elliot Smith, Cameron, and Derry, when I[14] brought the subject before the Royal Society of Medicine in 1907; but some little time elapsed before this teaching was generally accepted. But with this information we can see how vaginal operations work, for the removal of a wide portion of the vaginal wall exposes the lateral tissue or paracolpos. When the wound is sutured, unstriped muscle and connective tissue that formerly lay far apart at the sides of the vagina are brought together in the mid-plane of the pelvis. This lengthens the course of the structures and so tightens them up, thus restoring efficiency to the attachments of the vagina and bladder. Again, high amputation of the cervix exposes the parametrium and allows its right and left portions to be brought together in the middle line in front of the stump of the cervix. In other words, anterior colporrhaphy works not so much by narrowing the vagina as by exposing the paracolpos; and amputation of the cervix works not so much by shortening the uterus as by freely exposing the parametrium. In this light it is clear that those of us who gained success when these operations were still empirical must have operated in such a manner as to secure good union of lateral tissues in the mid-plane of the pelvis.

Consequent Changes in Technique.

How could these operations be simplified and standardized so as to place uniform success within the grasp of any competent surgeon? At the Edinburgh Obstetrical Society in 1907[15] I advocated the extension of the anterior colporrhaphy wound far into the lateral fornices with the object of securing better exposure of the paracolpos than is given by the ordinary colporrhaphy wound, together with exposure of the under surface of the parametrium. This modification was followed by improvement in my own results; but I soon realized the importance of high amputation of the cervix to secure efficient exposure of the parametrium. In 1910 I saw the way to a great simplification, and began to excise a large portion of the anterior vaginal wall together with the cervix in one piece. The incision begins half an inch above the urethral orifice, passes wide of the cervix on either side, and ends behind it. This leaves a quadrilateral wound narrow below, wide above, with the stump of the cervix near its posterior angle. The bladder, freely separated from the cervix, is well out of the way. The parametrium is much better exposed than is the case when the amputation and the colporrhaphy are done one after the other. Beginning in the mid-line behind, the vaginal wall is sutured to the cut edge of the cervical canal until the stump of the cervix is surrounded and covered in. The rest of the wound is closed from side to side by interrupted sutures which take a good bite of the paracolpos together with the edge of the vaginal wall. As this is done the cervix passes upwards and backwards, and the uterus is left in anteversion. This combination of anterior colporrhaphy and amputation of the cervix in a single operation was published in 1913[16] and in 1915. It has proved during the last fifteen years to be simple, safe, and efficient.[17] It is generally followed by perineorrhaphy, colpoperineorrhaphy being used whenever rectocele is present. Dr. Lacey's[18] inquiry into ultimate results was published after the Birmingham congress had discussed them in 1921. He found that 97 per cent. of my cases in 1914-15-16 were permanently cured. Thirty children had been born to twenty-four of the patients. One of them who had had three children required further operative treatment; this patient's cervix was not removed at the first operation, or the result might have been better.

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THE OPERATIVE TREATMENT OF HERNIA IN INFANTS AND YOUNG CHILDREN.*

BY

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THE remarks which follow deal with a consecutive series of operations for inguinal hernia in infants and young children. Most of these were performed in the out-patient department of the Belfast Hospital for Sick Children, and a comparison is made of the results of these operations and those performed in the wards and in private practice during the same period.

When the British Medical Association held its Annual Meeting in Belfast in 1909 the late Mr. J. H. Nicoll of Glasgow advocated the treatment of hernia in children by operation in the out-patient department. The late Mr. Robert Campbell of Belfast, who was at that time a recognized authority on the surgical affections of children,

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