THE SURGICAL TREATMENT OF PROLAPSUS UTERI.

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It is to be regretted that there should be such a multiplication of long words descriptive of operations, nearly all of which are based upon the same general principles, for the relief of a prolapsus or procidentia due to any cause whatever. There are at least ten distinct procedures devised for the relief of this condition which may be classed as follows:

1. Anterior-elytrorhaphy.
2. Posterior-elytrorhaphy, or posterior colporaphy of Simon.
3. Colpoperineoraphy of Hegar.
4. Kolpoperineoplasty of Bischoff, of Bale.
5. Le Fort's median colporaphy.
6. Lateral and bilateral elytroraphy.
7. Episio-perineoraphy or contraction of the vulva and perineum.
8. Stricture of the vagina.
9. Episiorrhaphy or contraction of the vulva.
10. Obliteration of the vulval ring.
11. Huguier's operation, or amputation of the cervix.

Primarily and strictly speaking, prolapsus means the descent of the uterus as a whole. But owing to a faulty nomenclature, and to that adherence to terminology, a respect for which has been enforced by age, we include under one general head; 1. A simple descent. 2. Hypertrophic elongation of the infra-vaginal cervix. 3. Hypertrophic elongation of the supra-vaginal cervix. The language is faulty since it disregards the fundus uteri, and is merely predicated upon the assumption that the *os tincæ* are found to be lower down than in the normal condition. The simple prolapsus found in old maids of a certain age, due to senile atrophy, and to the general decrepitude of advancing years, may also be met with in younger women as a resultant of various causes. Since we are concerned chiefly with surgical intervention, it is scarcely pertinent to the subject, however interesting such a discussion might be, to consider the patho-anatomy of these three subdivisions.

Anterior Elytroraphy.—This is the favorite practice of American surgeons because cystocele usually complicates *procidentia uteri*. Marion Sims' first operation consisted in a V shaped incision of the mucous membrane of the anterior wall of the vagina, the apex being near the neck of the bladder and the two arms extending upon the sides of the cervix uteri. The two denuded surfaces were then brought together by silver sutures passed transversely. He has since modified this plan so that now in place of making the suture after having denuded a large oval surface of the anterior vaginal wall (as in his first attempts) he dissects off a portion of mucous membrane in the form of a trowel, so as to form a true fold, the upper ends of which, when brought into contact, form a support for the cervix. To remedy the defects of the simple V incision, which consisted in the formation of a pouch, so that the cervix slipped behind the septum into the pouch, and the fundus became fixed in the hollow of the sacrum, Dr. Emmet simply denuded the vaginal mucous membrane in a line across the cul-de-sac, making a regular triangle with its apex at the neck of the bladder and its base at the cervix. Emmet completes the triangle by denuding the strip which in Sims' trowel-shaped denudation, is left untouched at the upper end of the triangle. Dr. T. G. Thomas and Dr. Dawson remove the entire mucous membrane enclosed within the triangle. Dr. Dawson catches up an inch or more of the mucous membrane with a tenaculum to one side of the cervix, and removes with Emmet's curved scissors a piece in the shape of a cone. This serves as an outline. After the entire surface within the triangle is removed silver sutures are passed immediately below the denuded surface entering and emerging about one-fourth of an inch from the edges and introduced first at the upper end of the triangle. After these sutures are passed, the denuded surface is folded with a sound so as to bring its opposing faces together. In this way the wire is folded within the tissues so that the sutures act as splints in keeping the vaginal fold in position and the denuded surfaces in apposition. In 1869 Emmet adopted the following method. The uterus is first anteverted and its neck crowded up into the posterior cul-de-sac by a sponge probang. He then endeavors to find two points, one about half an inch from the cervix on each side and a little behind the anterior lip, which can be drawn together in front of the uterus by means of a tenaculum in each hand. When two such points can be thus brought together without undue tension, the surfaces are to be freshened. Then a surface about half an inch square is to be denuded with scissors about the point of the other tenaculum. Next a similar surface is to be freshened about the point of the first tenaculum, and a strip afterwards removed from the vaginal surface, in front of the uterus, about an inch long, by half an inch wide. Beneath each of these freshened surfaces a needle armed with a silk loop, to which the silver wire is twisted, is passed, so that the three surfaces are brought together in front

of the cervix forming a fold. Courty depresses the posterior wall and perineum by a Sims' speculum, and fixes in the anterior lip of the cervix the two terminal ends of a catheter, the convexity of which depresses the anterior vaginal wall toward the bladder—the curve of the catheter is buried under the lateral folds formed by the mucous membrane, where they meet in the median line. He then passes a solution of nitrate of silver over these folds and afterwards one of salt, which whitens them and allows him to make out exactly the surface to be denuded. The artificial support of the uterus is not secured so satisfactorily by anterior as by posterior elytroraphy or the colporaphy of Simon. Then, too, the operation is by no means an easy one and requires exceedingly delicate manipulation.

Posterior Colporaphy.—Devised by Simon of Heidelberg. He dilates the vagina by means of a broad fenestrated speculum, and then removes with scissors or bistoury, a portion of the mucous membrane and subjacent tissue to within about an inch of the vaginal insertion of the neck. The upper extremity of the denuded surface should be almost square, and not pointed, so that after cicatrisation has taken place, there is a kind of bag above the cicatrix which receives and retains the cervix, without this precaution, as stated by Courty, "the cervix would penetrate into the narrowed canal, would insinuate itself like a wedge, and by gradually dilating it would eventually make its way through it and reproduce the prolapsus." Below, the posterior portion of the labia must be denuded, so that by uniting them, the elongated perineum is produced forward "forming a curve terminated by a spur which forms an extended *point d'appui.* The opposite edges are brought together by sutures, and thus a firm cicatrical band is formed which occupies almost the whole length of the posterior vaginal wall. Prof. Simon claims for his operation; That it forms a pouch in which the cervix rests; that a firm barrier is by it opposed to the exit of the uterus at the point toward which that organ naturally gravitates, and that the vagina is made narrower and more rigid. In addition the uterus is not drawn down by the contraction of the cicatrix as occurs in Sims' operation. (Barnes).

Colpo-perineoraphy (Hegar).—Hegar narrows the vagina by removing a V-shaped fold of mucous membrane from the posterior vaginal wall, the apex reaching nearly to the cervix, the base ending at the vulva, which it includes, as in rupture of the perineum. The paring has to be done very carefully, and it is sometimes difficult to decide just how much mucous membrane from the posterior vaginal wall should be taken off. Hegar gives six to seven centimeters in one direction, and seven centimeters in the other. He also uses the radiating stitch.

Kolpoperineoplasty of Bischoff.—A tongue shaped flap is separated in the direction upward, and each edge of it is united by sutures to the

posterior edge of the ordinary lateral denudation, after healing of the wound the lower part of the vagina is considerably narrowed, and the vaginal axis is broken so as to form an angle with the axis of the uterus. The two factors, it is claimed, prevent the womb from protruding through the vagina.

Median Colporrhaphy. (*Le Forts' Operation.*)—The uterus being outside of the uulva, a portion of mucous membrane is dissected off each of the vaginal walls from the middle part (six centimeters long and two wide, according to Courty) the uterus is reduced sufficiently to bring into contact the uterine extremities of these two denuded surfaces, and three sutures are applied to this transverse border, uniting the anterior and posterior vaginal walls in a linear direction. The union of the lateral borders is effected afterwards by forming a metallic thread on each side, first through the border of the anterior denuded surface, and then through the corresponding border of the posterior surface; a thread being placed in the same way on the opposite border and at the same height, it suffices to fasten these two sutures, in order to increase the reduction of the uterus by bringing the opposite vaginal walls together.

Eustache of Lille modifies this operation by removing the mucous membrane at least four centimeters in length and as much in width so that the wound may be nearly square. He also uses catgut instead of silver wire for sutures.

Dr. A. H. Smith uses long deep stitches of silver wire inserted in sound tissue on one side of the anterior denuded surface completely under the latter, then out and under the posterior denuded surface in the same way. The loop of the stitch is now passed through a perforation in a soft metal bar and shotted. The remaining stitches are passed in a similar manner, the loops of each being passed through a perforation in the bar and shotted. The ends of the sutures are twisted and left long.

Hewitt's Operation.—One plan of Dr. Hewitt's is to remove a triangular strip of mucous membrane about two inches broad below, and about half an inch broad above, from the floor of the vagina, the upper end and apex of the triangle being quite close to the os uteri. The ordinary perineal operation is then performed. His other plan is to remove *two* triangular strips from the vaginal canal, one on each side of the vagina, then follow it with the perineal operation. The edges are brought into apposition by means of silver wire, an ordinary short curved needle such as is used in vesico-vaginal fistula being used to carry it. He uses the ordinary *post mortem* stitching which acts as a splint stitch.

The Method of Dr. Savage.—Dr. Savage entered the perineal cavity by removing the mucous membrane upward along the floor of the vagina, but he relies on deep sutures for securing coaptation. This only differs from Simon's operation in the stitching—Simon using the ordinary stitch.

Dr. Gillette has operated successfully by passing stitches under the mucous membrane without denuding it, by simply condensing the walls of the vagina.

Dr. Schröder denudes the whole surface of mucous membrane within an oval, and buries the sutures in the submucous tissues across the whole face of the wound.

Mr. I. Baker Brown's Operation was devised to meet those cases in which there was a deficiency of perineum from laceration. He denuded the posterior wall of the vagina an inch above the raphé of the perineum, and up the sides of the orifice two-thirds of the inner surface.

Lateral and Bilateral Elytroraphy are indicated, perhaps, in an exceptionally broad vagina.

Episiorrhaphy or contraction of the vulva, is done by uniting the posterior three-fourths of the labia majora—the labia minora being removed, the vivified edges are united by wire sutures.

Obliteration of the Vulval Ring.—This may be done by infibulation as practiced successfully by Schieffer in 1856, Aran did four cases in 1859, result not known.

Martin's Operation.—Martin aims at restoring the posterior columns of the vagina. He makes raw surfaces on the posterior wall, and a raw surface around the introitus. The opposing edges are united in the vaginal wall. The denudation resembles an anchor with a double stock. The surfaces on the stock being brought into apposition on each stock separately.

Huguier's Operation.—Marion Sims has said, that, as a rule conoid amputation should only be made when there is hypertrophic elongation of the intra vaginal portion of the cervix as well as procidentia and supravaginal hypertrophy. Courty holds the same opinion. The operation consists in removing a part or the whole of the cervix with the upper extremity of the vagina, by scooping it out from without inwards, after having previously detached the bladder from the part which is to be removed. Courty says: The object of the operation is not merely to amputate the subvaginal portion of the cervix, but also to remove that extending between insections of the vagina and the body of the organ, which is the principal seat of hypertrophy." The dangers to be avoided are lesions to the perineum and to the bladder. When the malady is preceded by a rectocele or cystocele, or by both, it may be necessary to operate upon the herniæ of the rectum and bladder separately. Huguier has devised an interesting operation for this, which I take from Courty. "For cystocele, after having previously dilated the urethra with prepared sponge, he introduces the little finger by this canal, and if possible, the index finger of the left hand into the bladder. He seizes the tubercle and the anterior wall of the vagina with a small pair of Museux's forceps, making an assistant draw them downward and forward, so as to stretch them and separate them, if possible, from the corresponding wall of the

bladder. Then he passes, at the base of the fold formed by the part of the vaginal wall which he wishes to remove, a long pin, or several pins crossed, for example four, forming two crosses, taking care that the pins traverse the cellular tissue lying between the vagina and bladder without touching the walls of this organ, of which he is warned by the finger introduced into the vesical cavity. He throws a loop of thread behind each cross formed by the pins, forms a pedicle of the whole with a triple thread and applies the écraseur."

Episio-perineoraphy consists in the greatest extent of juxtaposition by extending the excisions from the vulva to the perineum, and in the increase of the depth and resistsnce of the cicatrix which contracts the vulva behind, a portion of tissue in the shape of a horse-shoe is removed, and two sides united by a double set of sutures, three deep and three superficial.

Critical Examination.—Savage says: Experience has shown the futile character of these and such—like plastic operations. The great sustensibility of the vagina defeats their object sooner or later." This very sweeping assertion is not sustained by the results of to-day. Gynecologists all over the world are operating for prolapsus, with a success more or less favorable. Some cases fail *in toto*, others are only partially successful, while another class are permanently benefited in every particular for which surgical interference was demanded. Discrimination in the choice of an operation, a proper consideration of the conditions enjoining it, with a just appreciation of etiological factors are as necessary here as in the larger operations. Anterior-elytroraphy is pre-eminently suited to some cases, while Simon's and Hegar's operation will be followed by better results in another. Huguier's operation is a difficult and dangerous one, but when carefully performed for the relief of certain conditions, is usually followed by happy results. Not even the majority of instances of complete or incomplete prolapsus is attended with perineal laceration, and I very much doubt if a prolapsed uterus has the power of lacerating the ano-perineal tissue, a prolapsed uterus follows the same general course as a fœtal presentation, that is, the curve of the sacrum. If, the prolapsus prior to making its final turn under the pelvic arch, has pressed for a long time upon the perineum, the perineal body becomes distended, and the perineum itself thin and patulous. If, once escaped, it has remained unreduced for some time, the perineum becomes a thin edge of "atrophied recto-vaginal septum" the space between the rectum and vagina being lessened. Another case, is a prolapsus complicating a lacerated perineum from parturition in which, of course, the double operation is demanded. The long continued pressure of a prolapsed uterus upon the anterior perineal triangle, produces, in time, many of the changes incident to child-bearing, but never a laceration. The object aimed at is to secure a sufficient support for the uterus, in which the

vaginal walls shall act as natural pessaries, to strengthen the perineum and to increase its saggital dimensions. These are the primary points of consideration in instances of simple prolapsus complete or incomplete, we desire to arrive at a position in which the final descent from under the pubic arch may be anticipated. If cystocele or rectocele or both shall accompany the prolapsed uterus, such an operation must be chosen as shall best meet these indications. If the perineum be lacerated from any cause, the operation upon the vaginal walls must follow that of the reservation of the perineum, and here the incisions may be prolonged so as to narrow the vaginal outlet. Preservation of the perineum in whatever way it may be done will not of itself prevent extrusion, and is useful only as affording a more permanent support for a pessary. The prolapse may be due to hypertrophic elongation of the infra-vaginal cervix or to elongation of the supra-vaginal cervix. In the former we have a "prolapse without locomotion of the fundus," for while the fundus may be slightly dragged down, it is the exaggerated nutrition of the cervix which causes such an elongation as to bring the *os tincæ* near the orifice of the vulva. Here, too, we are apt to meet the conical cervix so often associated with sterility and dysmenorrhœa, or the *tapiroid*, an acquired form of hypertrophy due to defective involution, or to the "traumatisms of labor." (Goodell). For the relief of such conditions the redundant portion must be removed by the galvano-cautery or écraseur, or by Hégar's operation, which consists in exsecting a wedge-shaped piece from the redundant tissue, and bringing the flaps together by deep stitches passed through the whole substance of the cervix; or the whole rim of the os may be stitched to the vaginal mucous membrane. Where infra or supra-vaginal hypertrophy are associated, Huguier's operation has met with success.

Now, since neither form of these hypertrophic elongations constitutes a true prolapsus, if the plan of Huguier is to be resorted to only when procidentia accompanies both forms of hypertrophy, the cases will be exceedingly rare, since the occurrence is excessively infrequent. The fundus is always dragged down somewhat in these elongations, but there is no true prolapse, no descent of a fundus as a whole, and on the only part usually appearing outside the vulva is the elongated cervix of supra-vaginal hypertrophy.

I do not intend to convey the impression that procidentia may not occur with elongations of both infra- and supra-vaginal cervix, but that such instances are extremely rare and are pathological curiosities. Veit (*Zeitschrift f. Geburtsk.*, Bd. 1, S. 144) believed that primary hypertrophic elongation was very rare, and that this kind of hypertrophy was usually consecutive to prolapsus. The fact is just the reverse. It is the hypertrophy that simulates the prolapsus. Partial hypertrophy of the cervix may exist in the peripheric parts or in the parts which form the

walls of the cervical cavity. Courty, who read a most interesting paper on this subject before the Academy of Medicine, May 22, 1877 (quoted by him in "Uterus, Ovaries and Fallopian Tubes," p. 616), says: "It exists most frequently in the median line. It is often congenital, depending on arrested absorption of the partition which separates primitively the two uteri, and of which the columns of the *arbor vitæ* are the vestiges."

Anterior elytroraphy seems to have originated in the desire to rectify a cystocele which usually attends *procidentia uteri.* It may be objected to this operation. 1. That it is a delicate one, and 2. That it gives an insufficient artificial support to the uterus. The chief object is to make a proper support for the womb and for the anterior wall. If the uterus be prolapsed, and there is no rectocele dragging it down, if there be no hypertrophic elongation or perineal laceration, the operation of Sims or Emmet is probably the best. If the perineum be much dilated, if there should be a rectocele, colporraphy will be resorted to, or the colpoperineoraphy of Hegar where the perineo plastic operation is demanded.

Banga (*American Journal of Obstetrics*, July, 1882, "The operation for prolapsus uteri of Simon-Hegar *vs.* that of Bischoff"), says: "I deem it my duty to revoke the statement made in my former article as to the feasibility of Bischoff's Kolpoperineoplasty in every case of prolapsus, however complicated. More extended experience has shown me that this more justly applies to the Simon-Hegar mode of operating." And again he says; "I always thought that anterior elytroraphy was essential to secure a good result in any severe case of procidentia. However, the two last reported cases go far to show that the assistance to be derived from such a primary operation had been greatly overrated. Anterior elytroraphy. had failed, and yet after colpoperineorraphy the prolapse was cured. Nevertheless, I shall continue to make anterior elytrorhaphy, especially where the bladder descends very low."

As a general rule I think the Simon-Hegar operation is to be preferred—both because it is more easily carried out and meets more fully the requirements. Again there are conditions of the posterior vaginal wall which render Bischoff's method utterly impracticable. Anterior elytroraphy may be resorted to for the cure of the cystocele, and later on it may be followed by colpoperineoraphy. Cases of supra-vaginal hypertrophy of the cervix are best treated by Huguier's method, which seems to offer the shortest road to a permanent cure. Great caution must be used against wounding the bladder or the peritoneal reflection behind. The exposure of the cervix is attended with considerable difficulty, and its retraction, after being severed, must be guarded against by transfixing the uterus above that point. Le Fort's operation is an exceedingly ingenious one, and is preferable to either lateral or bi-lateral elytroraphy. It has the merit, too, of not interfering with coitus, while placing within the vagina an

obstacle "which, from its position, ought to prevent a return of the prolapsus better than any other operation." This operation may be supplemented by perineoraphy if we desire to give more strength and resistance.

Courty says: "Posterior colporaphy seems to me theoretically preferable, and my practice has justified this theory; I should therefore advise it when there is reason for attempting a radical cure of these maladies. If the cystocele has not yielded to this operation, anterior colporaphy may be added."

Barnes states his conclusions as follows: "1. When there is prolapsus without marked elongation of the cervix, remove a portion of the mucous membrane of the anterior wall of the vagina on Sim's plan. 2. If there be considerable elongation amputate a portion of the redundant neck, and at the same time remove a triangular piece of the mucous membrane just in front of the cervix, the base of the triangle merging in the stump of the cervix, and bring the sides of the triangle together by sutures. 3. If there be considerable rectocele, with impairment of the perineum, perform the perineal operation, or posterior colporraphy. 4. Where the three conditions co-exist, all three operations should be performed. It will generally be best to do this in successive operations."

Mr. Whitehead (Manchester Medical and Surgical Reports, 1871, cited by Barnes), thought that to cure prolapsus we must aim more

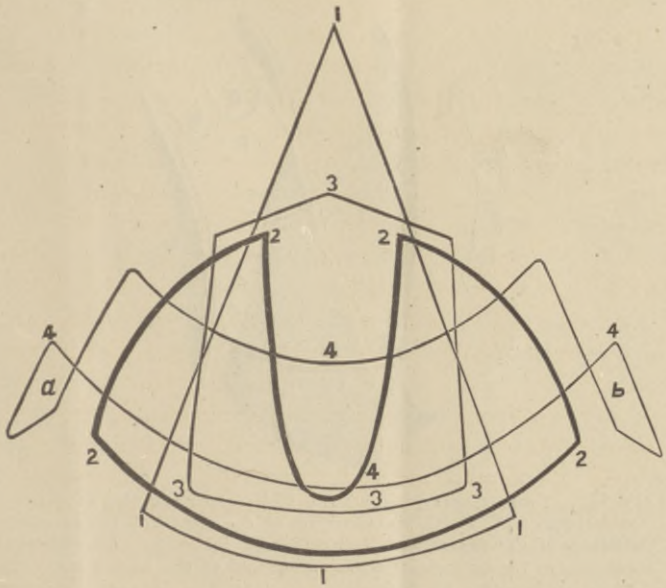

PLATE I.—This drawing, from Hart and Barbour, shows the various forms of raw surfaces made on the posterior vaginal wall. 1 1 1 1, Hegar's. 2 2 2 2, Bischoff's. 3 3 3 3, Simon's. 4 4 4 4, a b, Winckle's.

to relieve the pressure from above than to diminish the weight of the uterus or to increase the strength of its supports. Consequently he made two triangles, the posterior one with its apex towards the os uteri, and the anterior one with its apex downwards—he also amputated the cervix.

Hart and Barbour say: "Of all the raw surfaces recommended Hegar's is probably the best and simplest."

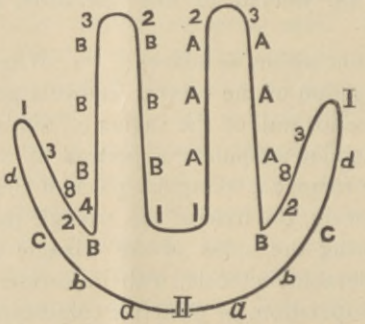

PLATE II.—Also from Hart and Barbour, shows Martin's operation. 1 2 3 4, raw surfaces on posterior vaginal wall. 1. II, raw surface around introitus. The surfaces 1—4 are united., A to A., B to B. The edge 4 B., is turned in with the corresponding one of opposite side, along the line a. The surface I. II is united by sutures, so that the English and Greek letters are in apposition.

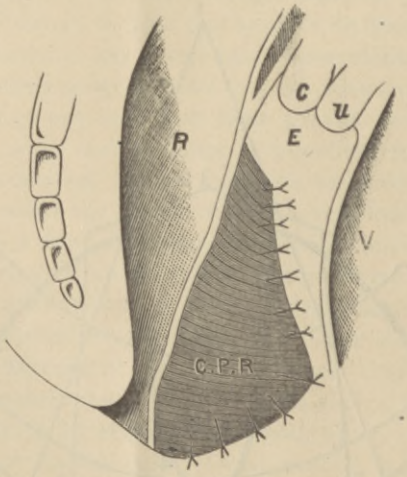

PLATE III.—From Courty, shows the Colpo-perineoraphy of Simon and Hegar: C. P. R., juxtaposition of the right and left bleeding surfaces of the vagina and perineum kept in contact by alternate sutures; at the upper part a projecting fold of the vagina makes a supporting surface for the cervix; E. vagina; C. U. vaginal portion of the cervix; V. bladder; R. rectum.

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