CONSIDERATIONS ON THE TOTAL ABSENCE OF THE VAGINA, AND ON ITS SURGICAL TREATMENT.*

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Among the congenital malformations of the vagina total absence of that organ is one of the most rare and most difficult to remedy. Embryologically the explanation of this malady is well-established and admitted by all authors, except perhaps as far as concerns the formation of the hymen and of the vestibule of the vagina. The union of the ducts of Mueller gives rise normally to the tubes, the uterus and the vagina; anomalies in the coalescence of these ducts easily explains total and partial obliterations of the vaginal canal.

The fact that when the vagina is wholly or partially absent there may exist a hymen and a vaginal vestibule of a more or less rudimentary nature seems to indicate that these organs do not originate from the ducts of Mueller, but that they are developed from the urogenital sinus (Pozzi). Whatever may become of these embryogenic theories, which will long excite the

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interest of anatomists, one essential question dominates these studied, and that is as to what can be done to cure them. On this point surgery has already accumulated a large amount of evidence, from which can now be educed the principle methods, the undeniable and well-established value of which commands the attention of operators.

The time is past when the creation of a vaginal cavity could count as a grave operation, with danger of fatal septicæmia, the time when Dupuytren, Sabatier, Cazeau, Nélaton and Langenbeck, in consequence of repeated failures, advised abstention from operation in all cases in which pressing complications did not compel interference.

American authors and Steward and Lawson-Tait also counselled prudence. It needed antisepsis and the successive transformations of surgical procedures to reverse these opinions and to establish the legitimacy of intervention in all these cases of total or partial absence of the vagina.

The thesis of Baudry,* of Mlle. Dumitrescu,† which are the two most recent comprehensive works on this subject, approach the question from the different points of view of morals, religion and surgery, and the conclusions which they draw are favorable to intervention.

There is a definite indication for establishment of an artificial vagina whenever there is retention of menstrual fluid or hæmatometra. In these conditions, which I do not care to consider here, opinions are unanimous that it is necessary to provide a way of escape for the blood accumulated in the uterus, and the perineal way is the best and gives the best drainage. There is still discussion as to whether laparotomy is not generally preferable (Riedinger), but it seems that the opinion is nearly universal that the lower route is better and is to be preferred.

I desire to consider only the cases in which total absence of the vagina is accompanied by no menstrual retention. To this class of cases belongs one which I am going to report further on, and in relation to which I shall discuss some interesting points of therapeutics. Malformations of this kind may be divided into two classes, (a) total absence of the vagina with absence of menstrual molimen, and (b) total absence of the vagina with existence of menstrual molimen.

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†Thèse de Paris, 1896.

(a). When the vagina is absent, except at its inferior extremity, where a hymen and a vestibule are generally found, and no phenomena indicating a menstrual molimen, is observed in a woman who has arrived at the age of 20 to 25 years, it is a question whether there is any use in operating. If the woman thus malformed has been informed early of the real state of her genital organs, and of the absence of any troubles of her general health, depending on the condition, it is probable that she will always accept the consequences of her condition and will definitely renounce marriage, and by so much the more readily since she does not feel any desire or any attraction for this act of her life.

Abstention from operation is then the rule, and it would not enter the mind of any surgeon to propose to modify the physical condition of such creatures, so blighted by nature, for it is quite evident that the formation of a vagina could not awake in them the sexual instinct congenitally abolished.

The conditions are not the same if the young woman thus malformed has consented to marriage, in spite of amenorrhœa and the absence of all genital sensation. Although it seems strange that marriage should occur under such circumstances, yet it sometimes takes place, to the great prejudice of the husband, and when the woman has acted in entirely good faith. Under such conditions the wife has often been urged to marry by her family, in the hope that it will modify her previous condition and will bring about the appearance of menstruation which has been absent.

When the physician is consulted and the anomoly of development is discovered it is too late; the civil and religious act which binds two beings indissolubly is consummated, and although the law offers a way of escape legally valid there is often a repugnance to taking advantage of its provision. The surgeon is then solicited to intervene, and I am convinced that he ought not to refuse. This question has often been discussed at great length; it has been answered in two opposite ways. Some hold that it is contrary to morality and to the Christian religion to make a vagina simply for the purpose of carnal satisfaction; others, persuaded that marriage can only be consummated by sexual congress of two beings, believe that it is logical and natural to favor this congress and to render it possible by repairing an error of nature. From a humanitarian point of view there might be

room for doubt, if the creation of a vagina constituted a grave operation, which imperilled the life of one of the couple; likewise one might hesitate, if the vagina thus artificially formed were destined to perform its functions imperfectly, and to be the cause of suffering or ulterior complications. But this is no longer the case in our day, thanks to new surgical methods and to autoplasty. It may therefore be maintained that surgical intervention is justified in cases of total absence of the vagina, with non-existence of menstrual molimen, when the malformation is first discovered after marriage.

(b). When the menstrual molimen manifestly exists in a woman afflicted with total absence of the vagina, operation is more clearly indicated.

This molimen seems to indicate that the internal genital organs are relatively well-developed, and that the ovaries are susceptible of at least rudimentary function. Examination by the bladder and by the rectum, by combined touch and palpation, there reveals the presence of the uterus in the pelvis, with tubes and ovaries more or less developed and sensitive. The impossibility of the menstrual flow in these patients is due solely to the absence of the vagina, and in such cases we often see that there is retention in the uterus or the tubes, apoplexy of the ovary, with or without hæmatocele. Hæmatometra, hæmatosalpinx, even hæmatocele are the most frequent of these complications, and it is of the utmost importance to prevent them.

Some surgeons have preferred to have recourse to castration in order to suppress the menstrual molimen. Battey's operation in fact, here finds very exact indications, because it suppresses the changes of hæmatometra almost, although not absolutely, certainly. Tauffer, Langenbeck, Peaslee, Kleinwaechter, Strauch and Duvaluis have used it with success. Boursier also used ovarian castration in a patient who showed very marked nervous troubles and severe abdominal pains during 5 to eight days, with hysterical attacks, vomiting, etc. The result was indecisive for a long time, since the dysmenorrhœic crises kept appearing during several months, but they finally disappeared (Baudry). In spite of the success due to castration it is certain that this measure will often be untrustworthy for we must remember that there may be frequent abnormalities in the development of the ovaries, erratic or supernumerary ovaries, etc.

Moreover the want of success which frequently follows the

operation of Battey, when it is performed for nervous troubles of ovarian or dysmenorrhœal origin, makes us doubt the efficacity of this treatment. It should be considered more reliable in troubles of the circulatory system, properly so called, that is to say when there are grave vicarious hæmorrhages.

When the nervous or dysmenorrhœic symptoms are intense it would seem to be surer and more efficacious to have recourse not to castration alone, but to abdominal hysterectomy, which definitely suppresses all danger of hæmatometra, and is no more dangerous than Battey's operation.

The ablation of the ovaries and of the tubes, or total, or subtotal hysterectomy are modes of treatment to which it will be logical and legitimate to have recourse in cases in which the woman is not married or has determined to remain single or whenever thorough examination of the pelvic organs has demonstrated that the uterus has only a rudimentary development. Under contrary conditions, and with a uterus of a normal size and situation, something better can be done.

The perfection of operative procedures of the present time permits us to hope that after the vagina has been formed at the first operation, the cervix uteri can be placed in communication with the artificial vagina at a second operation, thus definitely restoring its function. If this therapeutic ideal has not as yet been methodically realized, at least it is not forbidden to dream of it and to work for its realization.

Emmet and Fletcher, in cases of total absence of the vagina, have succeeded in completely restoring normal uterine and menstrual functions. Gérard-Marchant arrived at the same results, to the great benefit of his patient. Fletcher's patient, although before the operation she had never had any menstrual molimen, was able to become pregnant and to be happily delivered of a child. These excellent results have been obtained by procedures with a technique certainly inferior to what we possess today. I will here briefly recall the principal methods of creating an artificial vagina.

Simple incision is the oldest method. The bistoury and the scissors cut transversely, starting from the vestibule of the rudimentary vagina, dividing all the compact tissues of the perineum, and continue to make an opening between the bladder and the rectum, guided by a sound and the finger of an assistant, as far as the vicinity of the peritoneal cul-de-sac and the

uterus, which the finger can feel and distinguish in the depth of the wound. Cicatrization is left to itself, but watched, and the width of the vagina is maintained by frequent dilatations.

This procedure, instead of being executed solely by cutting instruments, may be combined with separation of tissues by the finger, but the principle disadvantage remains, which is that cicatrization by connective tissue always ends finally by diminishing in depth and width all the dimensions of the artificial vagina.

By combination of incision and of blunt dissection remarkable successes have been achieved from time to time. In proof of this I need only cite the observation of Dolbeau,* where it is reported that the artificial vagina gave free passage to the menstrual flow. This woman was able to marry and to have a happy accouchement in presence of Professor Tarnier.

Patients of Roeve, of Tédenat and of Mollière operated by this method have been able to get a useful vagina, with normal menstruation. In the thesis of Mlle. Dumitrescu are to be found a certain number of happy results, which show the value of the method of blunt dissection, when it is followed by prolonged dilatation.

It is by this procedure of incision and separation that Polaillon obtained a remarkable success and was able to form a vagina and to open the uterus into it in two operations†; thus also Gérard-Martin in a first operation made a vaginal canal into which he was able to make the uterus open by a subsequent laparotomy, enucleating the cervix from the neighboring tissues. Segond, Albertin, Binaud and Demons have also formed new vaginæ in this manner, without attempting to create a communication with the uterus.

In all these operations, performed under the protection of antisepsis, there is mentioned first the safety and harmlessness of the operation itself, but also secondly the invariable tendency of the subsequent cicatrization to obliterate the new vaginal canal. Although some of the patients operated by incision, with or without blunt separation of tissues, have retained wide and deep vaginæ, the majority found that there was a gradual narrowing or final obliteration. Those patients are rare who, like the one operated on by Richet, have been notably helped by

*Gaz. des Hopitaux, 1886, p. 333.

†Bull de Chir., March 29, 1887.

the operation. The report states that this woman, happy in her condition, and contented with the certainty that she ran no danger of becoming pregnant, became a prostitute and was found satisfactory by her lovers. Generally the new vaginæ formed by separation of tissue gradually become unserviceable, at least unless they are submitted to prolonged and often repeated artificial dilatation.

The means which is at once simple and truly efficacious for avoiding cicatricial retraction is to utilize the resources of autoplasty. Lannelogue, of Bordeaux, Roux, of Lausanne, Villar, Picqué and others have had recourse to this method and have had reason to be glad that they employed it.

Roux used for the formation of a vagina two flaps of mucous membrane, traced symmetrically from the hymen on the internal surface of the labia majora and utilizing the labia minora, which were unfolded. These flaps, sutured at their edges, were applied by their raw surfaces to the walls of the new vagina. Picqué similarly utilizes the vulvar mucous membrane as far as possible, and also employs a supplementary cutaneous flap. Schwartz and Villar, of Bordeaux, content themselves with the employment of the vulvar mucosa, fearing distortions originating from the dissection of flaps.

Délagenière was the first to employ a method which I also used, without knowing that it had already been employed surgically. I give here my report of the case which will sufficiently explain the steps of this procedure.

Mme. D., 24 years old, practises the profession of midwife and has been married several months. She enters my clinic Dec. 14, 1900, requesting the aid of surgery for a malformation which marriage has disclosed to her, and which greatly preys on her mind.

Up to the time of her marriage the patient had always been in good health; she is a brunette, of strong build, above the average height. She has never menstruated, but this abnormal condition did not seem important to her, for she thought that marriage would bring about the desired change in her condition and would stimulate menstruation.

Although intelligent, and well informed in such matters, on account of her former studies at the Maternity Hospital, Mme. D. had never suspected the malformation with which she is afflicted; she noticed periodically at every month, regularly and

during several days, very clear symptoms of menstrual molimen. She experienced in the lower abdomen a sensation of weight and of painful tension, of swelling and pricking in the breasts, of flashes of heat in the face and pains in the region of the kidneys. These catamenial troubles had begun at the age of fourteen years.

At the first attempt at conjugal intercourse she suffered much distress, and recalling her studies and experience she found out for herself that there was an obliteration of the vagina, which at first she thought was not absolute. After several vain attempts she had to yield to the evidence as to her condition and seek the aid of surgery.

The patient is a strong and well-built woman; the breasts are well-developed and show normally formed glandular lobes, the nipples and the glands of Montgomery are projecting and well-colored. The abdomen is of feminine type and the pelvis wide and spacious, not leading to the suspicion of any malformation.

The external genital organs, vestibule of the vagina and urethra, seem to occupy a position somewhat high up, and drawn in, below the symphysis and the mons Veneris, which is thickly covered with hair. The perineum appears very broad and very long. The labia majora are short, project but little and are thin; they grow narrower in their lower parts and are lost below the vestibule in the rigid tissues of the perineum. The labia minora are reduced to slight lateral projections. The clitoris is well formed and the urethra has a normal meatus. There is a small fleshy hymen, represented by a membrane some millimeters in height, crescentic in form, behind which can be seen a cup-shaped depression, closed by a pink mucous membrane, which is not depressible and forms part of a firm and compact mass of tissue. No orifice, no fistula, is found in this depression. From the fourchette to the urethra the extent of the vestibule does not exceed one and one-half centimeters; there is therefore a manifest atrophy of the vulvar organs.

Palpation alone teaches me nothing in regard to the presence of a uterus, but by rectal touch, combined with the use of a catheter in the bladder, it is possible to distinguish a moderately large uterus, free in the pelvis. The lower portion of the uterus can be followed, by feeling through the rectal wall down to a point where it seems to be attached in front of the cul-de-sac of Douglas. Between the sound in the bladder and the finger in

the rectum nothing can be felt except a compact mass of perineal tissues, without any cavity or lacuna between. There is then total absence of the vagina, with presence of a uterus and probably of adnexa, and persistence of the menstrual molimen.

Mme. D. earnestly begs me to do whatever is possible toward making a vagina which will permit her to fulfill her conjugal duties. She seems to resign herself easily to the loss of her uterine functions, but considers the formation of a new vagina absolutely requisite. On account of her urgent request I decide to undertake the creation of a vagina, with the intention subsequently, if the case is favorable, of proposing to graft the uterus into the artificial canal.

The operation is performed under chloroform December 19, 1900. Starting from the sub-urethral vestibular depression I make an incision 5 or 6 centimeters long, vertically and across the hymen and the fourchette, cutting only part of the fibres of the transversus perinaei muscle at the lower part of the incision, which is carried to a depth of about three centimeters. I then lay aside the knife and, guiding myself by the finger of an assistant, introduced into the rectum and by a sound in the bladder, my index finger separates the tissues interposed between these two organs, perforating some aponeurotic layers and separating the fibres of the levator ani muscle. The finger does not meet any fibrous tracts indicating the obliteration or the direction of the ducts of Mueller.

Little by little and cautiously my finger is insinuated to a depth of 9 cm., bluntly dissecting and pushing away the tissues, without any difficulty, thus enlarging the opening which has been made. Arrived at depth of 9.5 cm. from the vestibule of the vagina, I feel clearly at the tip of my finger a tumefaction, somewhat spherical, hard, immovable in the transverse plane but escaping vertically on pressure. The left hand strongly depressing the abdominal wall in the sub-pubic region meets the fundus uteri in slight anteposition, at the moment when the index finger of the right hand lifts up the hard mass which it encounters. It is certainly then the uterus. Not wishing to take the risk of opening the peritoneum, the cul-de-sac of which may reach far down, I stop the dissection, and I prepare for the second part of the operation, that is the autoplasty.

I mark out on the genito-crural regions and on the nates, starting from the lower extremities of the labia majora, where the

pedicles are to be, two cutaneous flaps, exactly horizontal and symmetrical, 12 cm. long and 5 cm. wide, comprising the skin and a thin layer of cellular tissue, which is carefully dissected off.

These horizontal flaps having been detached, turned back and slightly twisted on their pedicles and united on their posterior borders by interrupted sutures of strong catgut, the upper borders are sewed together in the same way for a distance of 3 to 4 cm. at their extremity.

A sort of glove-finger is thus formed, with the raw surface outward, but this finger, by reason of the twisting of the pedicles cannot be completed by a suture of the upper and anterior part, where material is wanting. I shall presently fill this loss of substance by a third, mucous, flap.

To introduce the glove-finger, thus formed, into the vaginal opening, I pass into the deep tissues at the bottom of the neo-vagina a strong thread of catgut deeply introduced, the two free ends of which thread are then passed from without inward through the juxtapposed extremities of the two cutaneous flaps. On making traction on the thread the glove-finger invaginates itself in the neo-vagina and its raw surfaces come in contact with those of the opening which has been formed. Some interrupted sutures of catgut, placed on the new fourchette and laterally as sure coaptation, which a light tamponade will still further maintain.

In order to fill the triangular gap, which remains in front, between the cutaneous flaps, below the urethra, I fashion a third flap at the expense of the mucosa which covers the left lateral parts of the vulvar vestibule. This flap comprises the mucous membrane of the left labium minus, and of the internal surface of the labium majus of the same side, and reaches nearly to the clitoris and the meatus urinarius. I thus make a flap of about 4 cm. long and 3 to 4 cm. broad, the pedicle of which is slightly twisted on itself. A few sutures assure the coaptation of the edges of this mucous flap with those of the flaps which have already been invaginated. In this manner the whole of the neo-vagina is lined with a covering of epithelium by the plastic operation, and the upper angle is lined with mucous membrane.

To finish the operation the vaginal cavity is lightly packed with strips of aseptic gauze, and the wounds in the perineum and nates are easily united with interrupted sutures of silk-worm-

gut. The wound resulting from the formation of the mucous flap is likewise united by interrupted sutures.

The results of this operation were excellent. The vaginal packing was changed daily, and only at the fifth day was it soiled by a little suppuration.

I noticed that this pus came from the point of junction of the mucous flap with the cutaneous flaps, and that at this place there was a slight failure of union, which was rapidly filled by granulation. The distal ends of the skin flaps also sloughed a little, giving rise to a slight purulent discharge during about two weeks, but without causing any shortening of the neo-vagina.

The patient left the hospital on January 20, when cicatrization was complete and perfect throughout the whole extent of the vagina. Before her departure I easily introduced the big bougies of Hegar, causing no pain. The depth of the vagina was 8.5 cm.

A year later and since that time the patient has given me information as to her condition. She states that she is satisfied, particularly since it is now possible for her to fulfill her conjugal duties. In January, 1902, the depth of the vagina was yet more than 7 cm. In October, 1904, Mme. D. tells me that the depth is hardly more than 5 cm. At the vulvar orifice there is a tendency to narrowing, which renders the intromission of the penis somewhat difficult, but it must be remembered that since the operation the patient has never submitted to any examination nor any dilatation.

Mme. D. experiences a notable satisfaction during sexual relations, so that she desired them, but she states that if these relations were repeated during several days she would feel a certain irritation at the anterior opening, which she attributes to want of suppleness and to the laxity of the tissues at this point. She has never had any vaginal secretions, or any discharges.

Since the operation the menstrual molimen comes on every month with increasing intensity. The patient in her last letter expresses herself as follows: "I often experience congestion at the time of menstruation, a sort of pain in the lower abdomen and in the loins, a congestion of the lumbar region. The pains in the loins are sometimes so acute that I am unable to move and have to stay in bed. That has happened to me twice this year. I would have attributed this to a sort of lumbago if there had not been at the same time a congestion of the lower abdomen. The lumbar congestion has increased since the operation."

The study of this case, which I have felt should be reported somewhat in detail, is very instructive. It shows first the condition of neo-vaginæ formed by autoplasty, after a period of four years, without the assistance of any further instrumental dilatation. We can, therefore, be reassured as to the functional service which they can render, and as to their ulterior destiny. One point which strikes us is the tendency to stenosis at the level of the vulvar orifice, and also the obliteration of the deep portion which is not utilized in conjugal relations. This is quite comprehensible and could easily be obviated by appropriate care and measures.

It is well to insist on the transformation which occur in the patients, in regard to their genital condition, and particularly in regard to the modifications of the menstrual molimen. As soon as the pains caused by the first sexual relations have disappeared during continued married life, the patients who have undergone this operation experience in coitus satisfaction unknown until then, and become fitted for normal conjugal relations. At the same time that the excitation becomes more intense and more agreeable the menstrual molimen becomes more marked, and although in this respect there are advantages, yet it cannot be denied that there may also be grave inconveniences. It is certain that the menstrual molimen in developing occasions a greater genital excitement and congestion, from which there is the danger of a bloody discharge in the uterus, the adnexa or the pelvic peritoneal cavity. This fear is far from being chimerical, and I have dreaded this complication in the case of my patient. Reports of other cases show that this accident is not exceptional, and at all times surgeons have attempted to avoid it, even by serious operations. For this reason castration and even abdominal hysterectomy have been advised, which, in removing organs practically useless, suppress at the same time the physiological causes of the trouble and the accidents resulting therefrom.

This treatment, which is proper to propose for a single woman who has no need of an artificial vagina, seems to me excessive and somewhat brutal when the woman is married and wishes to enjoy married life. I am therefore led to approve, under these conditions, the course of Gérard-Marchant, and to carry still further the restoration of functions and the cure of the malformation. If the vagina is sufficient, why not open the uterus into it. It would perhaps be rash to realize this plan at one operation,

immediately after the formation of a vagina, for the second part of the operation being very delicate might not be performed with all the necessary antiseptic precautions.

Although in many cases the operator in separating the tissues to form the neo-vagina has come directly on the cervix uteri, without opening the peritoneum and thus at little trouble and almost unconsciously has succeeded at one sitting in accomplishing the junction of the uterus with the vagina, yet we cannot always count on such a fortunate state of things. In seeking for the cervix with the index-finger which separates the subperitoneal cellular tissue one may break through into one of the cul-de-sacs of the pelvic peritoneum and occasion disastrous complications. It would be more prudent to reserve for a subsequent operation the joining of the cervix uteri to the extremity of the vagina, when the latter is well cicatrized, and this may best be done through an abdomen incision.

I have tried to persuade my patient to accept this further operation, pointing out to her the risks which she continues to run owing to the fact that the uterus is enclosed in the pelvis. But Mme. D., who would willingly accept the operation itself, in order to be made physiologically like other women, fears pregnancy and the dystocia which might result from it. Instructed by her professional experience she fears the dangers of a difficult labor more than these of the actual malformation. We must admit that on this point she is perhaps right.

In spite of the example of the patients of Dolbeau and Fletcher, who, after the formation of artificial vaginæ, became pregnant and were happily delivered of children without any particular difficulty, yet we cannot affirm that it would always be thus. It seems possible, however, that pregnancy, by its preparatory modifications, can overcome the cicatricial resistance of vaginæ thus formed by autoplasty, and can soften their walls to the extent of rendering them extensible and passive. We should hope that in the near future, by reports of new facts, we may be able to settle this question, so evidently of great importance.

In resumé, the conclusion which seems to me deducible from this short study is that total absence of the vagina is a curable malformation, which need not be an absolute obstacle to marriage. Surgery, by making the uterus open into the vagina, can guard against the complications of hæmatometra and hæmatosalpinx. The best operative procedure seems to be incision, fol-

lowed by blunt separation of tissues, and autoplasty by three juxtapposed flaps. The method of Sneguireff,* which forms a vagina by utilizing a portion of the rectum is much more complex. Its advantages are largely counterbalanced by its inconveniences.