SURGICAL GYNÆCOLOGY

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IT may be said without fear of contradiction, that we owe to anæsthesia, asepsis and hæmostasis not only the immense advance in modern surgery and its greater possibilities, but, unfortunately, a tendency to loose methods and careless work.

This follows so naturally the comparative immunity which surgical patients now enjoy that we need to be constantly on guard against it.

With the patient on the operating table, anæsthetized, insensate as the raw material under the hand of the artisan, and protected from immediate danger by the latest safeguards against hæmorrhage, sepis and shock, there is to some too great temptation to loiter over unessential details, to do unnecessary or ill advised work. Also, the favourable conditions under which we may operate to-day, make it easy to forget that, in handling organs or tissue of the body, we are dealing with living substances of different degrees of resisting power, and the success of our manœuvres depends quite largely upon the amount of delicacy, dexterity and expedition that we use. The least possible violence must be done to delicate structures if we are to approach ideal results. In work within the peritoneal cavity, for instance, it is not enough to do an anatomically correct operation for the removal of this or that lesion of the viscera. Too ofter after such work we find the patient suffering as much as before the operation. The adhesions, scar tissue, and distortions, that follow undue violence or careless work, are frequently as great a bugbear to the patient as the condition for which the operation was undertaken.

This is science over-reaching herself, for it goes without saying that the main object of all operative work is to benefit the patient. And particularly is this true of all plastic surgery where a life-and-death emergency does not exist as an excuse for hurried or bungling

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work. Take, for example, simple divulsion and curettement of the non-puerperal uterus; we have all seen the most reprehensible work done here. Tearing, especially about the internal os in rapid divulsion, is the most unfortunate because close approximation of the torn surfaces and healing by primary union is practically impossible. The consequence is the formation of scar tissue about a circular orifice designed physiologically to soften, dilate and contract, not only during labour but at the menstrual period as well. Thus, a delicate and important function is irreparably impaired. Similar results follow bungling or ill advised use of the curette, especially within and about the internal os. Too vigorous or careless use of this instrument may not only result in perforation, but also in the most serious disturbance of the delicate function just mentioned. The resulting granulations and scar tissue, including, perhaps, the broad ligaments as well as the entire cervix, are practically beyond remedy, and not only seriously impair the cervical function, but at all times menace stricture with its pathological sequelæ.

Indeed, this entire subject of when and how to use the curette is so important and so pertinent to my subject that I could afford it more extended consideration, but as I wish to speak of other procedures I will only say by way of emphasis that I would judge an operator not so much by his hysterectomies and capital operations, as by how he does his curettements and minor plastic work.

But it is not my purpose, in a brief presentation of the subject, either to discuss the merits and accomplishments of the brilliant leaders, past and present, whose skill and judgement have brought honour to this department of medicine, or to deplore the mistakes that have been made in the name of surgical gynæcology by some enthusiasts whose place is not properly in gynæcology and to whom the science appears as a pseudo specialty.

It is enough to say in passing that not to know the relation of cause and effect in pelvic lesions, not to be familiar by long training with therapeutic probabilities, the anatomy, pathology and complex functional activities of this region, is to be disqualified by both reason and conscience for surgical undertakings on the organs involved.

While this is true of plastic or minor surgery where function is to be restored and normal contours and relations re-established, it has its special application in major surgery involving the radical removal of functionating organs, like the uterus, tubes and ovaries.

The ease and comparative safety with which such operations on the pelvic organs may be accomplished, has invited their far too

frequent removal in cases in which neither the symptomatology nor gravity of the condition would justify such procedure. Were surgery of such extent and involving the mutilation of the sexual system, to be commonly applied to the male organs, or were one called on to decide the matter in reference to his own family, the real importance of the subject would be apparent.

Then, too, we now question the formerly accepted opinion, that the female reproductive organs are of use to the human economy only in so far as they contribute to the perpetuation of the species, and that their removal involves nothing more serious than sterility to the individual deprived of them. Later studies are tending toward a wider view of the significance of organs which mark the fundamental distinction between sexes whose mental and physical characteristics diverge so radically.

The probability is strong that ovarian secretions, as yet unclassified, have a high relative importance in general metabolism, as significant as the rôle now attributed to the secretion of the so-called ductless glands. And aside from the subtler considerations of cell activities and the physical and psychic effects of interference with their established order, the removal of the gross mass of any organ is an acknowledgement in itself that we cannot meet the indications or cope with diseased conditions except by removing the affected structure. True, in many instances the only honest course is admission of this inadequacy of medical achievement, and prompt recourse to such means as we have, but it should be the steadfast aim of our science to promote prophylaxis, to popularize preventive measures, to preserve organs and restore function.

Beyond what may be called emergency measures, then, for the saving of life in malignant disease, acute septic or inflammatory involvement, hæmorrhage from extra-uterine pregnancy, and the removal of various neoplasms, the province of operative gynæcology should be to recognize what pelvic structures can be preserved and how they may be restored to their functional activity and made to conserve such vital energies as may depend on such function. Also, we should aim, even in extirpative surgery, to preserve, as far as possible, the rhythmical action of the pelvic diaphragm and its sustaining structures, as well as that of the pelvic floor, too often seriously injured through the results of injudicious methods. In some instances, an unrecognized trauma or an abrasion about the stump of the severed broad ligament, may not only give rise to a pernicious immobility with its dangers, but interfere with free circulation and cause passive congestion, blood stasis and con-

current evils. I regard the rhythmical action and mobility of the pelvic diaphragm as an important factor in the ultimate cure of the patient. The blood vessels in the pelvic tissue, being without valves, are dependent to a greater or less degree on the diaphragmatic action of the muscle groups of this region, and it is my practce to reunite as far as possible, the severed tissues of peritoneum, broad ligament and vaginal vault so as to insure their normal stability and relations.

Where plastic work is undertaken for the relief of chronic conditions we have fuller scope and ampler opportunity for needed reforms, and as a means of demonstration I shall refer briefly to some of the more frequent procedures.

Tracheloplasty

The classical trachelorrhapies are rarely, if ever, indicated to-day, except in recent injuries or tears of the cervix uteri. Two decades or more ago, Emmet himself conceded that his original operation for pathologic conditions following laceration had had its day, and suggested for it honourable retirement to a few well selected cases.

In recommending tracheloplasty as a substitute I claim for it that it best fills the requirements of plastic work. It requires the least preparatory and after-treatment; it exacts the least in the way of time and patience from patient and physician. It has a wide range of usefulness, being applicable in cases of laceration and erosion of the cervix, hypertropy, elongation, stenosis, and deformities, cystic degenerations, neoplasms and all adventitious growths —except cancer, which demands radical removal. As its name implies, it is a plastic operation on the cervix, and it may embrace all degrees of work from the repair of a simple tear, having pathologic involvement, to the more extensive amputations or entire removal of the organ. Its technique is briefly as follows:

Technique. The patient being surgically prepared and placed in the lithotomy position, the cervix is drawn down with a vulsellum forceps, bringing the uterus well into view. The cervix is dilated and the uterus curetted if indications for curettage exist. These are, however, so nearly constant as to make it practically the rule. The blades of the bullet forceps or double tenaculum, with which the cervix is held, may be reversed and placed within the cervix so that their points are directed laterally from within outward, but I prefer to use a specially designed instrument by which

traction is made on the inner area of the cervix, leaving the anterior and the posterior walls free for making flaps. The cervix is now transfixed by a special knife and a clean cut made from above downward, first in the posterior lip. The anterior lip is transfixed in a similar manner about 1 or 1·5 cm. in front of the other and cut in the same way. The intervening plug of diseased tissue is now removed by a single cut or two of the curved scissors; the bullet forceps having been moved to a lower position to allow it. The flaps thus made will now fall together and inward so as to assume the appearance of a normal cervix, and will require only the simplest suturing to keep them in this position. The first suture is passed through the centre of the anterior flap, a centimeter or more from its cut edge, and brought out about 0·75 cm. within the cervical canal. Two parallel stitches are now placed at each angle of the cervical canal. Silkworm gut or catgut is the suture material commonly used, and the employment of a fixed needle and holder renders an otherwise difficult procedure quite easy. The posterior lip is treated in the same manner, expect that here it is easier to pass the sutures from within outward, while the reverse is true in sewing the anterior lip. Two sutures are now passed, as in trachelorrhaphy, through the outer angles of the wound, which gape slightly after the turning in of the flaps. For nice adjustment of the stitches, and for ease in removal, I am in the habit of treating them in this way; in tying the sutures, one end of each is left long, and these long ends are grouped by tying them together according to their location. The three anterior sutures form one group, the three posterior one group, and the two lateral sutures are tied together, a pair at each side, making four groups in all. A uterine tampon of iodoform gauze or wicking is now inserted by means of a forceps and tampon carrier, a projecting strand being attached to the vaginal gauze tampon in order that both may be removed without undue disturbance of the parts.

If no accessory operation is to be done, the usual perineal dressings are applied and the patient put to bed. The external genitals are bathed with antiseptic solution after micturition, but no douching or disturbance of the vagina is allowed until after twenty-four or forty-eight hours, when the entire tampon is removed and not replaced. Vaginal douches of 1 to 4,000 mercuric chlorid are then used twice daily. The sutures are removed at the end of two weeks, unless absorbable material is used, and the patient can be up.

The advantages of this method are, in brief, as follows:

1. Quickness and ease of operating by the knife here presented,

the manner of making the flaps transcending in certainty and safety the ordinary methods of excision.

2. The fact that clean, smooth-cut surfaces are obtained without haggling of tissues.

3. The easy approximation of flaps and the fact that all hæmorrhage beneath them is avoided by deep placing of sutures and compression of flaps. There is accurate approximation of mucous membrane to mucous membrane, thus avoiding granulating surfaces, formation of cicatrix and constricting of canal. The certainty of obtaining a permanently patulous canal and a well formed cervix with pronounced reduction of a hyperplastic uterus, and the simplicity of the after-treatment, are of themselves enough to recommend this method to careful operators.

Operations on the Pelvic Floor

In operating on the pelvic floor, the indications are to correct the pathology and restore function in the involved structures. In nearly all long-standing cases, we have not only the presence of hyperplastic and scar tissue with disturbed function of the parts, but atrophy of muscles, changed relations of the different organs, and often veritable hernias. It is now many years since I suggested a classification of hernias which should include, besides cephalic, thoracic and abdominal, the group comprising cystocele, urethrocele, rectocele and prolapse of uterus and vaginal walls, this group to be known as pelvic hernias. A hernia is a surgical disease and calls for surgical treatment, which term admits of wide interpretation and includes all mechanical means, from simple air-pressure and gravitation in postural treatment to the radical procedure of removal of the offending organs. The latter, however, is rarely necessary except for unusual pathologic conditions, or in advanced age, but colpoperineorrhaphy, a modification of the flap-splitting perineal section and restoring the fascia and muscular layers, is indicated whenever any considerable tear or a weakened pelvic floor exists.

Colpoperineorrhaphy

Technique. It consists of a simple extension of the lateral perineal incision of Tait, deep into the vaginal sulci, so as to expose the torn and retracted ends of the levator ani and transverse perinei muscles, as well as their fascia. These, the proximal ends of the muscles and fascia, are then encircled with a curved needle carrying a strong silkworm-gut suture, threaded at both ends, which when

crossed and brought out through the skin on opposite sides, form a figure-of-eight suture. A second suture may be introduced in the same manner, about a centimetre distant, for further co-aptation and strengthening of the muscular floor. Before tying these sutures, a crown, or puckering-string suture is passed around the upper part of the wound, just along the under surface of the vaginal flap, approximating and shutting off the vaginal part of the wound.

With the parts now fully brought together, sutures tied, and their ends left long and fastened in one strand, to prevent their irritating or pricking the surrounding surface, the operation is complete, and it only remains to guard against contamination in the after-care. Should the sphincter ani muscle be torn or weakened, the same cuts that are made anteriorly at the sides of the vaginal orifice are made posteriorly at either side of the rectum, exposing the torn and retracted ends of the sphincter ani muscle. It is then easy to catch up their proximal ends, and bring them together just in front of the anus with the curved needle and silkworm-gut suture. The figure-of-eight will hardly be necessary in this instance, as the sutures are so superficial. Should rectocele or cystocele exist, the former is effectually taken care of by colpoperineorrhaphy; the latter may be entirely remedied, or in case there should be an amount of redundant tissue not taken up by operation, it is a simple matter to remove an elliptical or conical section of the vaginal mucous membrane and unite the edges by a purse-string or running catgut, or by the interrupted suture.

Correcting Displacements

With the pelvic floor intact, it is now highly important to correct any backward displacement of the uterus and adnexa. This should be accomplished by first removing the cause, and then securing proper support from beneath, aided by erect carriage, postural treatment, and shortening of the round ligaments. The last named procedure, when done externally through the inguinal canal or external inguinal ring, will effectually hold the fundus forward over the bladder, and prevent further tendency to prolapse or retrodisplacement. The operation given to the profession years ago, which I called in reference to its technique, the "direct method", is still applicable to such cases in which the uterus is movable, and in which there are no complications which require opening of the abdomen. If section is necessary for adhesions or other complications, the internal method is to be preferred. The

proceeding is simple in the extreme, and when properly executed should lead to no unpleasant consequence in subsequent labours. In uncomplicated cases, in which the direct method is chosen, I proceed as follows:

Author's Round Ligament Operation

Technique. Under full aseptic and antiseptic precautions, I begin by making an incision 1½ inches or more in length, parallel with Poupart's ligament, and directly over the canal of Nuck, which is midway between the spine of the pubis and the anteriorsuperior spinous process of the ilium. No dissections are necessary; this initial step exposing the glistening aponeurosis of the transversalis muscle. (In the subcutaneous fat, near the middle of the wound, will be found the epigastric vein, which may be ligated or picked up with artery forceps, cut across and used as a guide, lying as it does, directly over the canal of Nuck.) Through a single nick in the separated fibres of the aponeurosis, the blunt hook may n w be assed into the canal, and the round ligament, which will be seen as a whitish, slightly flattened, cord-like structure, pulled out in less time than it takes to tell it. In a case in which the operator may not be confident of his ground, the identity of the ligament may be established by lengthening the incision so as to expose it along the canal in its entirety; or, if further confirmation is needed, an assistant should be directed to draw the uterus backward by the sound or finger (passed through the vagina), when the tension on the ligament can be seen or felt in the wound, and will sufficiently distinguish it from the surrounding tissues. When the ligament of one side is secured, proceed in like manner on the other, and, drawing on both ligaments, expose, in the canal of Nuck, a reflection of the peritoneum surrounding the ligaments like a gloved finger. This should be stripped back until the ligament can be drawn well out and the uterus anteverted. This gives a loop of ligament on either side about 4 inches in length, to be disposed of by stitching the proximal ends together, and anchoring them firmly to the aponeurosis and walls of the canal by buried animal sutures, care being exercised to avoid strangulation of the ligament, or disturbance of its nutrition. The wound is closed with one series of silkworm-gut sutures, made to include the walls of the canal, the aponeurosis of of the external oblique and the superficial covering. Permanent dressings are applied, and are only removed in case of special indications. Patients are kept in bed two weeks or more, until firm union

of the incised structures has taken place, and precautions against over-exertion or straining of the parts are insisted on for as many months.

The advantages of this method of shorthening the ligaments are as follows, and are mainly due to the situation of the incision:

1. The short time necessary to recognize and secure the ligaments does away with the risks of prolonged anæsthesia and the liability to wound or destroy their fibres in protracted search, which sometimes occurs in the original Alexander incision since at this point, where there are few or no diverging fibres, there should be absolutely no teasing of the tissues.

2. The force used in pulling out the ligament is brought to bear on it at its strongest point, and is in a direct line with its intra-abdominal course. This is in strong contrast to the old mode of pulling on its frayed terminal fibres at nearly a right angle with its inner and stronger portion, and over the sharp, resisting surface of the ring.

3. Aided by the sense of sight, and seizing the ligament above the inguinal canal, one feels sure that he is drawing on the abdominal portion of the ligament and not merely stretching its inguinal section.

4. Having avoided all teasing and bruising of tissues, with proper attention to aseptic measures, there should always be healing by first intention; draining is unnecessary, and the after-treatment is relatively simplified.

5. If the ligament is strong and fully developed, as in its upper portion, it can be more securely anchored and made fast to the surrounding tissues.

6. Hernia is guarded against by the deep sutures constricting the canal about the internal ring, insuring firm union where most needed.

7. The nerves, intercolumnar fibres, and tissues about the external ring are not interfered with in any way, and this effectually prevents those distressing sensations of tension and pain which frequently continued for sometime afterward, when the wound was situated lower down, as in the old operation.

General Considerations

In abdominal sections, too great attention cannot be paid to the matter of effective closure of the abdominal wound, to insure subsequent stability of the walls, for upon this depends much of

their retentive and supporting power. As I have emphasized earlier, proper carriage, postural treatment and physical exercises are essential to the permanent maintainance of there structure, and without this stability, the individual can never be said to be well.

Setting aside, then, those capital operations performed for conditions whose gravity admits of no discussion, the question of gynæcic surgery resolves itself into that of expediency and adequacy in cases of ordinary pathology. He who does not realize this will perhaps never know why he has so many failures with such good and time-honoured methods. It is because he has been content with doing something—a repair of the perineum, resection of an ovary, amputation of the cervix, stitching up of a fistulous opening —without calling on all his reserve of experienced judgment to weigh the individual indications. And this experienced judgment, which should aid him in making his diagnosis, deciding his treatment and determining his prognosis, is what constitutes the gynæcological aspect of his science. Just as the artisan, habituated to the work, sees in the worn or broken article given him to mend, the story of its accident or misuse, the fault in its construction or composition, and thereby is able to judge how far, and by what means, he can hope to restore its integrity and usefulness, so the operator, confronted with some pathologic condition, searches back in the life of the patient for the productive factors in childhood, childbirth, in puberty, and adds this history to his knowledge of the present habit and temperament of the patient, before undertaking measures for relief.

It is crude surgery to say on examination of the patient: "Here we have a torn perineum; we will proceed to repair by the most approved method of perineorrhaphy," or, "We have here a lacerated cervix,—indication—tracheloplasty." It would be gynæcic science to say: "This perineum has been torn for years, the accrued pathology has thrown out of gear a whole set of delicately balanced organs, producing local pathologic conditions more serious than the original lesion, and a resulting disturbance of function in the system generally. The woman is abnormal, invalid, unhealthy, and it is the secondary affections which have driven her to seek relief. We have here not only a bit of local surgery to do, but a general reconstruction of the individual. Our plastic work will not be finished with the hour's work of the knife; we must literally remould the individual.

If this seems fanciful, quixotic, think for a moment what is concerned in the profession of medical science. Toward each

patient the physician assumes the rôle of dictator, infallible in all that concerns bodily health, and in this age of complicated living when we have artificialized (as far as possible), all natural processes, is it not worth the best man's untiring study to attempt to reconcile nature with modern modes of life?

In dividing our profession into specialties, we have need of keeping intact the saving characteristic of the old family doctor, close personal association with his patients. This individual confidence and intimate trust is necessary to the specialist and consultant, and his work will be correspondingly valuable as he cultivates it. Disease in the human body has the power of compelling and absorbing the interest of the subject to an exclusive degree; nothing else, for the moment, is of the least importance, and the patient is ready to meet professional advances more than half way. It is a sufficiently weighty responsibility, and nowhere else more weighty or more significant than in the department of gynæcic surgery.

Those men who tried, some years back, to create a new specialty called "orificial surgery", founded their misguided zeal on one very tenable argument: that the orifices of the body are of extreme significance in the animal economy. It is vital to remember this in work on the pelvic outlet. In choosing an existing method, or attempting some original procedure, the function and uses of the tissues under consideration, must be kept in mind. On account of the continuous demand on these organs, the tireless bodily activity which culminates here, the complexity of the eliminative processes, the rich vascular and nerve supply, nowhere else is there such a complication of difficulties to enlist the skill of the operator.

There is another point of view from which the relative importance of pelvic surgery is vast. Work undertaken to correct defects or malformations in other parts of the body is mainly for cosmetic purposes, and while requiring skill and judgement, frequently touches the question of general health; whereas, in restorative operations on the pelvic organs, the correction of defects almost always means the re-establishment of function, and the restoring of muscular integrity. Much of the failure of pelvic work is due to the fact that this special difference is not taken into account, and operations are undertaken with the view simply of restoring surface conditions, as it were; witness the mere superficial skin union we find after some perineorrhaphies. In such cases, only the outer integuments are restored, and all the under facsia and muscular structures are left as they were, to continue their hopeless inadequacy and long train of evils already established in the patient. And it

is this sequence of evils which will call for aid, the initial lesion assuming secondary importance in the case.

Multiple Operations

This brings another suggestion, and one to which I attach great importance: multiple operating at a single sitting. Instead of operating on the cervix, perineum, vagina, or other organ alone, according to the most apparent lesion, and then waiting for results, perhaps having to subject the patient to a tedious suite of surgical procedures, during which time she is under nervous tension, and the habit of invalidism grows on her to a desperate degree, it is my practice to do, at one and the same time, all the different operations which the pathological conditions justify: colpoperineorrhaphy, tracheloplasty, excision of tubes and ovaries, curettement, shortening of the round ligaments, rectal or urethral work. This, putting all parts at one and the same time into, as nearly as may be, normal anatomic relations, gives Nature the best possible opportunity to do what is required of her; practically the whole process of cure being in her hands, for surgery can only remove obstacles to her work.

From the patient's point of view the proposition is admirable. It requires but little longer convalescence to get up from a half a dozen simultaneous operations than from one, and then they are done, and there is nothing to do but get well. The operator, too, has everything to gain. He can assure his patient that she is now as nearly normal, structurally, as mechanical science can make her and that she has only to follow instructions and a rational course of life to return to her normal health.

Of course, it may be a long road to restored vigour, but it is materially shortened by this manner of operating. Parts that have been subjected to long disturbance of circulation, infiltration and connective tissue formation, have undergone changes which it takes time to overcome; functions that have been disordered for a long time are difficult to restore, and there may be atrophy from disuse and malnutrition which it will require the best efforts of Nature to remove.

Conclusions

The indications for major surgery of the pelvic organs are obvious. Given the present state of our therapeutic knowledge, the removal of organs from the human body is a confession of our limitations. We remove them because, up to the present, we

know of no other way to prevent or correct the pathologic conditions which face us, but we are in duty bound to relegate such radical procedures to the domain of emergency work which justifies itself only in extremity. As for plastic gynæcic surgery there are practically no limitations, when it is determined that the local defects interfere with nutrition and circulation in the genital organs, thus giving rise to disturbance of function and tending to organic disease.

In the choice of methods, one is not limited to original devising. The operator has an extended programme already mapped out for him, but he will do the best work, nevertheless, who can select intelligently and adapt skilfully the operation to the patient and not the patient to the operation.