THE BRANDT REMEDIAL METHODS FOR PELVIC AFFECTIONS.

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The communication of Dr. J. H. Boldt in the June number of the *American Journal of Obstetrics* explaining and advocating certain unique manual processes for the cure of affections of the contents of the female pelvis appears to invite examination, perhaps criticism. I will therefore proceed to bestow such notice on the remedial system referred to as its pretensions seem to call for.

The purpose of Dr. Boldt's article is to show the remedial power as well as the availability of *local massage* and allied manual methods for removing malpositions, congestions, functional irregularities and defects, and even more severe and advanced pathological conditions of the uterus and its appendages.

It is due that reasons be given why any reference to the subject introduced by Dr. Boldt's article is required. The peculiar practice described at length and with sufficient minuteness by Dr. Boldt was ostensibly inaugurated by T. Brandt, a non-medical Swede, the author of a thin volume, of which Dr. Boldt's communication is a *résumé*. The curative plan shown may appear plausible and even practical to the inexperienced and to those inclined to medical novelties. Positive and vehement assertions in medical matters, especially when backed by a formidable array of

successful cases, readily usurp the place of scientific statement and real merit. A tendency to accept and follow authority, or what seems such, is an instinct often insufficiently held in check by the reflective powers.

A conspicuous evidence of this tendency is now before me. A book just published from the pen of Dr. Herman Nebel at Wiesbaden, Germany, not only strongly advocates the Brandt system, but cites a long list of presumably respectable physicians in that country who have wholly or in part adopted in actual practice the same remarkable curative methods for the special class of cases before mentioned. This shows the importance of an intelligent presentation of the difficulties which the Brandt and similar methods have no adaptation to overcome and which *must* remain to torment both victims and advocates.

A further need for comment arises from the liability of the casual reader, who finds it impossible to keep himself "posted" on all phases of medical subjects, to confound the principles and methods set forth by Brandt with certain others which are in fact diametrically and unreservedly opposed thereto. It will become necessary in the course of the present article to give an intimation at least of the nature of these opposing principles.

History repeats itself even in affairs of the female pelvis. The Brandt system, if such it may be called, is devoid even of the questionable merit of novelty. Remedial processes substantially identical with those described by Dr. Boldt and Mr. Brandt, with such elaboration of detail, were, to my personal knowledge, much in vogue forty years ago in this country. It may not be without interest, perhaps may combine entertainment with warning, to advert to a bit of this history.

The inception of a practice of local "massage" for remedying various ills of the generative intestine dates back to the appearance in this country of the elder J. H. Bennett's book on the uterus, which was 1850. This work was extensively regarded as affording the last words to be said on what has since become developed into the many-sided and almost unlimited subject of gynæcology. Bennett's local methods of uterine therapeutics were generally adopted and often administered with more vigor than discretion. These methods were, of course, subject to "improvements"; among these improvements were local "massage" and a multitude of allied processes which were regarded as modes of securing the same effects. Afterward local massage became a practical substitute for, rather than an auxiliary to, direct medication of accessible portions of the generative intestine. Under the prevailing hypothesis of the nature of diseases of these parts of the body nice questions of ætiology were not troublesome.

Then, as now, there was abundant scope for the uterine specialist, for then, as now, there were women who preferred remedies to preventives, who preferred the chances of "cure" to the immunity offered through a wise discretion as to self-care. No one supposes that the average chronic "female disease" is inevitable; but, unfortunately, the avoidance of this class of affections has been and is but little discussed. Uterine specialists exist in response to the perennial demand, and the demand must continue till displaced by exemption, arising from the intelligence necessary for every woman on this subject.

At the period referred to, chronic uterine affections assumed a degree of prevalence typified by epidemics. Establishments devoted principally or wholly to this frail part of the female organism were judiciously located in this State and in parts of New England. Uterine defects and uterine cobbling were decidedly the *fad*. I knew of doctors without diplomas but with overwhelming patronage. The lack of authorization appeared to be no bar to success; and is not success sufficient evidence of both ability and merit? I was told of an omnibus line ending a short distance from this city which was literally crowded with women going to and returning from an eminent specialist. His methods consisted mainly in pushing up and properly poising the recalcitrant parts and executing at the same time interior local massage "from three to forty-five minutes," to be frequently repeated. One more reference, out of several I might give, will complete the surfeit of the reader and show the ease with which a certain kind of popularity has in times past been acquired. This specialist had a large establishment in a central part of this State. He had no medical or much other education. The two hundred women almost constantly present for years received personal attention from himself, assisted by one or two female helpers. His processes are well described in Dr. Boldt's article. He withdrew from practice, without diminution of patronage or popularity, only when his pecuniary ambition had become fully gratified. These facts were derived in part from personal interviews with the "doctor," in part from ex-patients. Other establishments, including the uterine specialty with a broader pathological scope, added the therapeutic attractions of electricity, various kinds of baths, etc.

We may call attention to the intrinsic nature of the difficulties presenting in these cases of disease and malposition of the pelvic organs, the better to understand the adaptation and want of adaptation of "massage" and other remedies for their removal.

Can poising the uterus, however dexterously, upon the tip of an operator's finger, can maintaining it in such position "from three to forty-five" or any number of minutes, not forgetting due interior combined with exterior massage, afford any considerable and practical information as to *why* this organ so insists on taking a downward or lateral excursion; *why* it doubles upon itself? How does toying with these perverse parts check or reverse their erratic tendencies? How, even, can prolonged sustentation of the uterus in an elevated and natural position, supposed to be secured by instruments, unravel the mystery of the *causes* of dislocation and deformity of the pelvic contents? Local "massage" sustains nothing; the pessary is only thrust between organs and parts; the supporter is buckled outside the same region; but how does either add to the physiological sustaining power? They only *seem* to the uninquiring to do so, but without scientific warrant. The downward tendency is not abated, only obstructed by local barriers. These have no physiological adaptation to lessen the weight of the pelvic contents, which is evidently the same with and without so-called supports. Even though the fibers forming the

organs within the pelvis should, by massage or any other means, become increased in tenacity and contractile power, no *sustaining* power is assured thereby, because of want of mechanical relationship. To expect the uterus, ovaries, and tubes to hold themselves up through an exertion of their own intrinsic mechanical power is like inviting a man to lift himself over a fence by the straps of his boots.

Divulsion of morbidly adhering parts is said by Brandt to be achieved by his system of "massage." Does this strenuous result give the least assurance of removal or even abatement of morbid continuous contact? Or that the same consequence from the same cause is not imminent? So, too, mechanical straightening of an incurved uterus, removal of cervical stenosis, and the crowding into place of a fugitive ovary are but temporary expedients, and, however frequently repeated, can in no degree diminish the erratic tendencies and habits of these respective parts. The unsubjugated organs will continue to manifest mechanical improprieties, will stray in forbidden directions, and get themselves figuratively ground between upper and nether millstones. The simple fact that there is no room above, or in any other location than that assumed, is strangely overlooked.

Similar difficulties are encountered in attempts to correct morbid conditions affecting the substance of the pelvic contents. We may pertinently inquire, Whence the excess, both solid and fluid, of materials which, more than any other single fact, characterizes the morbid state of these parts in its inception, development, and differentiation? Is quality as well as position independent of exterior influences, that its aberration should permit of remedies essentially local in their effects? Do gentle "squeezing," "malaxation," dexterous manipulating, and frequent coaxing of the generative intestine in some inexplicable and mysterious way engage the collateral circulation, and so open thereto a broader and more active connection? Are the chemical qualities of the local ingredients (always suspicious in disease) greatly improved by local massage? If so, what prevents immediate return of degeneration on suspending the fructifying agent?

Above all, are the means in question effective for, or do they even conduce to, a substantial and permanent re-enforcement of the vito-mechanical processes engaged in the normal return from the pelvic organs of their venous blood, and with it all ingredients whose prolonged presence is unwholesome?

But a fair estimate of the difficulties in the way of the Brandt system, and of other systems having similar purposes and limitations, does not end by proposing negations. We should note the injuries, positive and probable, which they are capable of inflicting; for, though healthy organs may not directly suffer from the processes described by Brandt, it must be admitted that the frequent repetition of such handling might prove rather rough for those in an unhealthy condition. The thinned walls of the distended capillaries, which have lost their contractility and bear but a slow and turgid stream, are not able to resist forcible mechanical impressions. Only such motor causes as operate *at* and *beyond* the venous outlets of the local vessels can be mechanically advantageous. Local massage can not extend its influence in any effective degree to the point where, if anywhere, it is required. Inferior degrees of the process are supererogatory or injurious, for renewal of local fluids and local nutrition necessarily depends on the facility of the venous exit. The tendency to deterioration of the pent-up local fluids can not be averted by merely local measures, however deftly applied.

Other difficulties inhere in the local plan under consideration. Whether such treatment be regarded as affording local stimulation, incitation, sedation, or other nominal effects, the production of these theoretical benefits is by no means the limit of its influence. Other effects, counter to those desired, inflicting far-reaching evil consequences, are necessary coincidents, not only defeating the main purpose, but even adding new pathological consequences; for the therapeutic plan described is a direct means of introducing and establishing new but unwholesome relations between the local parts and the organism at large, the reverse of those which obtain in health. The pelvis becomes a focus or center of the consciousness toward which the feelings and thoughts converge, in due response to physiological impressions. The pelvic organs are also resolved into a point toward which the circulation becomes actively directed, in further response to the same law. The local sensations and the local blood suffer morbid increase, and no counteracting influence accompanies these effects. This morbid action is maintained by the frequent repetitions of the local remedy which is usually demanded, and is therefore liable to become permanent. Even the most healthy pelvic organs can not long resist the disease-producing influences to which these parts are not infrequently subjected in disease.

The advocates of local massage usually insist on the coincident use of specialized, prescribed exercises, adapted to further the effects and to correct the deficiencies of massage alone. But, however elaborate and complicated these subsidiary processes may be, they fail to afford any suggestion as to the fundamental and continually operating sources of this class of affections, and little relevancy is apparent between the processes prescribed and the morbid conditions to be combated. Besides, the invalids suffering pelvic troubles are usually disabled, and therefore often incapable of voluntary action, and, as is well known, are liable to injury from volitional activities. All consideration for this class is, by the scheme referred to, omitted.

These difficulties are insignificant in comparison with the *misdirection* of the medical purpose and medical endeavor incident to the Brandt system; for pelvic affections of the ordinary chronic description are not self-produced and self-sustained or independent, but, from beginning to end, depend on adequate causes. These are the primary factors; the manipulation is secondary thereto and dependent thereon. The remedy under discussion is directed to the *secondary* factor; to *consequences* in place of *causes;* to subordinate features and evidences, while the potential and continuously operating sources on which these depend are quite omitted from consideration and remain unremedied. Pelvic affections, whatever their form of manifestation and however aggressive their symptoms, have their potentiality

in their sources. These sources should therefore become the chief object of medical solicitude, for remedies directed either to morbid location of the pelvic organs, to the tangible and ocular evidences of disease, to the local pain, or to all of these combined, may be powerless to reach the sources of these symptoms. There is, in general, a marked disparity between the immediate effects and the ultimate consequences of remedies employed on this principle. It is unreasonable to expect radical effects of the restorative order from remedies whose scope is thus restricted.

The full force of these statements appears only when the mechanico-physiology of the pelvis and its important organs become well understood. The location and the condition of these organs are dominated by environment to such a degree at least as to determine the state of their health, whether good or ill. The contents of the pelvis may be displaced in whole or in part by causes having their seat in the environment of these organs, and performing the function of sustentation, and not otherwise. Other ill manifestations have a similar source. These exist by reason of their nurture from environment, and necessarily disappear when their sources are removed.

The importance of environment is tacitly conceded whenever pessaries are thrust under and between the pelvic contents; and in a very odd way when the trunk space is diminished by a tight exterior band—both under the mistaken idea that the pelvic contents, in opposition to mechanical laws and common sense, may in these ways be urged upward. The first condition for securing an improved location for pelvic contents, or any of the parts thereof, is to provide space therefor. The same remark applies with equal force to deformities of these organs—such as retroflexion, and even stenosis.

The nature of the mechanism and the forces which at any time control the pelvic contents, solid and fluid—in other words, the pelvic environment—may be briefly shown. The lateral walls of the pelvis are bony, fixed, and not subject to change of any kind. In the inferior direction are the vagina, practically open and unresisting, and the perinæum, of only slight mechanical stability. These together are quite incapable of resisting any continuous impinging force; they, in fact, yield on moderate pressure. The only remaining boundary is the superior—that opposed to the inferior boundary of the abdomen. This boundary is nominal and does not exist as a practical fact, for the pelvic cavity is mechanically continuous with that of the abdomen; the two designations relate to parts of the one cavity of the trunk. The two classes of viscera, the abdominal or digestive and the pelvic, are in practical contact. And, as before intimated, the superimposed portions, by their facile glidings, turnings, wedgings, and insinuating moldings to the presenting irregularities of the pelvic contents, exercise a force on the latter which, when morbid, is shown in symptoms pertaining to the inferior and dominated parts. The dominating force is healthful or otherwise, according to circumstances. The nature of this force is made clear by a single suggestion.

If the abdominal mass be suddenly raised, say to the extent of an inch, does any one suppose that a vacuum would be caused in that perpendicular space as broad as the pelvic diameter? By no means. Any one understanding the action of a pump knows that an upward force is exerted on the *inferior parts* to a degree far in excess of that required to raise them into the occupancy of such space. The force in this way rendered active is, indeed, practically irresistible. The pelvic contents may therefore be easily and certainly controlled as to location by mechanical causes and conditions whose location is *above*, not below them.

This statement of physiological fact is undoubted as relates to health; that is, for all except the suffering class. The loss of health of the pelvic organs is therefore evidence of defects of the mechanico-physiological function whereby sustentation is naturally maintained. The restoration of such function is the *only actual* remedy possible, since other morbid phenomena are mainly derivative, secondary, and incapable of existence, except on condition of the defects described.

For those who have had no practical experience in rendering available for remedial purposes the source of power now referred to, further elucidation of the principles brought into action may be needful. It will be noted that spontaneous, constant fluctuations of the capacity of the cavity of the trunk characterize all animals, from man down, including all species. These fluctuations of space, produced by changes of exterior boundaries of the included space, are rhythmic, and synchronous with inspiration and expiration of a corresponding amount of air. These fluctuations do not cause interior vacant spaces, but measure the fifteen to thirty cubic inches of air to which they correspond. Not one fifth of the trunk capacity for fluctuation is usually called into use; there is hence an *enormous reserve* of mechanical capacity and of the forces which control it. In birds the mechanico-anatomical conditions are such that the exterior fluctuation is almost wholly at the posterior part of the trunk, the portion corresponding to the perinæum in other animals. In quadrupeds the lower abdomen, including the pelvis, which is an offset from the abdominal cavity, engages in the constant rhythmic fluctuations. This is very obvious when the creature is at rest or in moderate exercise. The whole trunk engages in increasing the amount of fluctuations of the space it includes when under the stress of vigorous exercise. In neither case are these fluctuations limited to the chest.

The location of the fluctuating area, and consequently of adjacent interior parts, is easily seen to be different in the persons of women suffering from pelvic diseases, pelvic malpositions, in all ruptured persons, and in those liable to fall under these categories. In these cases the rhythmic movements of exterior fluctuation of the walls of the trunk are both restricted and perverted. The most casual observation shows that in all examples of either of these cases there is little if any movement of the inferior portion of the walls of the trunk. The non-fluctuating area includes the lower abdomen, and consequently the pelvic space, which is a mechanical offset therefrom.

The respiratory rhythm and fluctuation of trunk-space is, in pelvic diseases, morbidly restricted to the upper por-

tion of the trunk. It fails to extend through the mass of its contents, and to include the pelvic viscera. But few of the muscles normally adapted to that use engage in the act. The lower abdominal and the pelvic contents are left motionless, while the restricted movements are morbidly transferred to the opposite extremity of the common cavity—that is, to the apex of the chest.

The above-described perversion and restriction of the natural and necessary action of the organic mechanism entail the disadvantages which result in morbid position and morbid phenomena.

The fluctuations of space within the cavity of the trunk bear a close resemblance to the action of a pump, and may be described as a continuous *lift*. All organs within the cavity of the pelvis are subjected to this lifting force. It affords sustentation to these organs and maintains wholesome mechanical interrelations between them. *As long as this act supplies due and constant upward tension, malposition and deformity can not exist.* The remedy for morbid location of the pelvic contents is hence to supply the upward tension which is naturally due them.

But it is not enough that sustaining energy be supplied to the contents of the pelvis. There is practically no vacant space into which the pelvic contents can possibly ascend till such space is provided. The uterus and ovaries can not be impelled by physical force into preoccupied locations. They will pass into such positions only in proportion as the parts above them recede. No other force is required.

It follows that the sustaining force, to effect the desired purpose, must extend equally to the abdominal contents; in fact, the efficient sustentation reaches the pelvic contents *through* the abdominal. The whole mass of the common cavity engages in the fluctuating motion superinduced by the muscular walls of the trunk.

The natural, incessant, mechanical fluctuations of the walls of the trunk at their inferior boundary, as above described and as witnessed in the lower animals and the healthy of the human species, have a further physiological purpose not less important than that above shown. By this mechanical action a constant and perfect *drainage* of the pelvic contents is secured. It is in vain to expect the return of health in these parts while the return circulation is imperfect and obstructed.

The venous blood, and indeed all excess of local interstitial as well as vascular fluids, are, by the means described, returned to the general system. The influence of the same vito-mechanical acts extends to whatever morbid ingredients these fluids may bear. The return circulation from both the head and the pelvis is secured by essentially the same mechanism. Neither part has control of its own venous contents; these in both cases are dominated by mechanism at a distance, urging the whole venous mass of blood toward the common center. The mechanical influence extends, when its degree is normal and healthy, to the remotest capillaries, and maintains them clear of obstructions.

The mechanico-physiological facts above set forth, so far from being obscure and open to question, are, on the contrary, patent to all observers. They are too common and well known and universally accepted to invite opposition or even attention. Their acceptance, however, affords a complete rationale of the mechanical control of the pelvic mass and parts and of the pelvic fluids. The action of this mechanism is functional; it extends to and is unequivocally connected with the cavity of the pelvis. The function described maintains the position of the organs of the pelvis as a mass and as separate parts. It also maintains the nutritive activities of the same organs by withdrawing their venous circulation, which is the indispensable condition for admission of the arterial. The conclusion is irresistible that defects of this raising and sustaining function result in defects of position—that is, malposition of parts; and that defects of local nutrition, through lack of insufficient change of local fluids, inevitably result in nutritive perversion, or its synonym, disease.

It is not difficult to understand the commanding therapeutic value of the physiological facts and principles above explained. But persons with only the slight acquaintance with them here afforded, and no experience adapted to confirm them, may be forgiven if they harbor some doubt until such facts and principles have been verified, if possible, through personal experience and by adequate tests. The mechanico-physiological function brought to view is practically identical with that of respiration, and consequently beyond question. What the inquirer wants to know is whether the power and the scope of the organic mechanism extend in fact to the interior of the pelvis; and whether, if this be the case, such power is both adapted and adequate to control the position and the condition of the pelvic organs; and whether such control is capable of transforming the pathological into a physiological state. It is further desirable to know whether these principles are susceptible of being carried out, proved, and confirmed by actual practicable processes, which effectually raise to and sustain in natural position the previously depressed deformed parts fixed by morbid, perhaps old, adhesions. It is, again, of the utmost consequence to learn whether the pent-up, restrained, deteriorating fluid contents of these local parts may be sent freely along their natural channels and become submitted, with that of all parts, to the powerful chemistry of the whole organism. *To all such inquiries I give an emphatic affirmative reply.*

Many experienced physicians join me in this affirmation. They have reduced to successful every-day practice the principles herein set forth, and with most unalloyed satisfaction. They have found their former methods in great degree superseded, substituted by those more radical and permanent. As for myself, after being well trained in the ways of the brightest and best of the lights of gynæcology, now departed forever, these ways and methods were gradually displaced by those arising from a broader consideration of physiological facts. The mechanico-physiological methods, as they developed, proved to be both speedy and positive as well as permanent in their effects. My personal tests of the merit of the principles here presented extend over thirty years, and include the severest and least curable forms of cases not remedied, and often irremediable, by any less direct and thorough curative methods.

To assist the inquirer to a more vivid and comprehensive

estimate of the mechanico-physiological methods for pelvic affections, I may be indulged in making a further exposition of them. Not only is the pelvic cavity at the base, and in one sense a part of the abdominal cavity, but its walls may easily be conceived as being extended on all sides so as to be continuous with and include those of the base of the abdomen. Being therefore sections of the same parts, they are necessarily subject to the same laws and functions.

It will be seen that the extension to which attention is now invited includes the region of *hernia*. An analogy between hernia and pelvic affections becomes evident on due reflection. The intestine or omentum in the protruded sac parallels the morbid descent of the pelvic contents. The two are, in fact, quite the same, the pelvic organs obscuring the misplacement of the overlying intestines. Both are consequences of unsustained weight of digestive organs. In the one case an artificial receptacle is formed by violent distension of a portion of the wall; in the other case the receptacle is ready-formed and natural. Both are parts of the same peritonæum.

Hernia occurs at points of least resistance. So does prolapse of pelvic organs. Hernial protrusion is caused by *persistent* pressure of a knuckle of intestine, due to immobility of the abdominal mass; prolapse of the contents of the pelvic cavity has the same antecedent condition. Strangulation of hernia results from defective communication between the contents of the sac and those of the abdomen; chronic disease of the pelvic organs betokens a similar lack. The very narrow neck of hernia renders the obstruction more complete and the symptoms more acute than is incident to the pelvic superior opening.

The nature of the mechanical problem presented in both strangulation of hernia and the suffering pelvic contents may now be separated from other considerations, and the remedial needs may thereby be better understood. The problem is not what it is ordinarily assumed to be. It is *not* a problem of mechanical pushing in and holding up of merely the insignificant amount of obtrusive flesh, but of restoring pre-existing physiological and mechanico-physiological connections—of re-establishing normal relations of parts, all of which are within the peritonæum.

Defect of those spontaneous organic motions which inhere in all healthy animals during life is the potential factor or cause in both classes of cases. The *restoration* of the normal degree and form of the same actions is the indispensable condition of cure; and for this there can, in the nature of things, be no complete remedial substitute.

This spontaneous organic motion is subject to augmentation as well as restriction. The former is remedial, as the latter is the opposite. Through artificial devices and methods the fluctuation of capacity of the trunk may be enormously increased. The power which urges upward the contents of the trunk, including those of the pelvis, then becomes very much in excess of what is required to draw up the retroflexed uterus, to divulse adhering parts, and to return the escaped, strangulated intestine to the abdominal cavity, in spite of the size it may have acquired and the resistance of the canal through which it must repass. Should the reader desire the practical data, enabling him to verify the above statements, he will be provided with such in the form of a monograph (gratuitously) by making application at 71 East Fifty-ninth Street, New York.

The fact that pelvic affections of women are usually very slowly acquired and chronic does not affect the nature of the essential defect, or the nature of the means adapted to effect their removal. This fact only emphasizes the necessity of *cultivation* of the defective power to raise it to the desired standard. Remedial attention bestowed on subordinate factors or consequences of the initial defect are necessarily incapable of reaching the dominating factor. The propriety of this class of remedies, mainly palliative, is subject to the judgment of the physician.

To aid the inquirers to greater familiarity with the principles of the mechanical order involved in hernia and ill conditions of the pelvic organs, I will point out further mechanical analogies. The walls of the cavity of the trunk may be represented by the bulb of a common syringe. An indentation by the fingers of such a bulb excludes its fluid contents to an extent equal to the indentation. The removal of the pressure allows the force residing in the instrument to draw up the contents of the pipe or neck. If the bulb has a very thin, unresisting area, a defect near its neck, that area would bulge out on compression of other parts, especially if the pipe be obstructed; the same area would, by its oscillations, indicate all variations of degree of compression. No one would doubt but that all these changes of form would exactly indicate and be due to corresponding changes in the motor source, which in this case is the changing pressure of the fingers and the contents of the cavity. The outward impulsion of the thinned part of the bulb practically removes undue pressure from the whole remaining interior. So, too, when removal of pressure of the fingers allows the elastic force to assert itself, such force becomes manifest only at the protruded part, which is drawn in to the same extent and by the same force as caused the outward protrusion.

Let, now, this weakened and yielding portion of the bulb be conceived as so changed in shape as to constitute a true sac and neck. It will be readily admitted that it is still a part of the common cavity, and that the force, which for convenience rather than accuracy may be called suction, extends to the fluids contained within this branching sac, through its neck, in precisely the same degree as though there were *no* neck. Moreover, this point offering no resistance, the whole motor energy and motor effect of the elastic bulb is manifested here; and should the pipe be closed, the extended portion of wall would instantly be sucked in—returned. We may next conceive the transverse area of the neck and its communication with the sac as being indefinitely small—less than the diameter of the finest needle. This supposition would make no difference with the nature, or the amount, or the direction of the forces engaged, or with the effect of suction on the fluid contents. There is still a communication between the sac and the abdominal cavity by means of and through the *wet* tissues, even in the absence of pervious vessels. The least difference of pressure in the two cavities causes transfer of fluid *inward*, as previously it did *outward*. Strangulation does

not obliterate, but only obstructs communication, and indicates the immediate need of reversing its direction. The moment the experimenter applies this fact to practice he obtains direct evidence, through sight and touch, by the cessation of vomiting and of pain, that transfer of fluids is progressing. The observer will remark the very insignificant amount of solids in the sac after drainage of its fluids and the ease with which these slip back through the neck, however tortuous its cause or sharp the constricting pillars.

Hernial cases, which are more visible, tangible, and imminent than those appertaining to the pelvis, demonstrate more clearly the actuality, and even the great excess, of uplifting force, easily and quickly available, and that the usual obstacles are insufficient to resist its remedial efficacy. But *pelvic* cases, in which malposition is symbolized by hernial protrusion, and ill-condition by strangulation, are in general very chronic. This fact, to a certain extent, modifies the purpose of the remedy. An adequate uplifting and suction force is still demanded; but there is also required such increase of the natural mechanico-physiological powers which produce these effects as can be secured only by due cultivation of the instruments of this force. Nothing less is worthy the name of "cure" in these classes of cases.

The mechanico-physiological and the mechanico-pathological relations of the contents of the female pelvis will now admit of distinct and intelligible statement.

No distinct mechanical supports of the contents of the pelvis exist in anatomy, and none are required. Malpositions and ill-conditions do not occur in consequence of such deficiency, nor can local ill-conditions of the pelvic contents be rectified by an artificial supply.

The "strengthening" of the pelvic organs, were this possible, by local massage, or remedies having a similar purpose, can not, in the nature of things, reach the *sources* of the local manifestations, which exist in environments, and alone are, therefore, incapable of securing permanent results.

Sustentation of the contents of the female pelvis is, on the contrary, *functional* and *automatic*. It does not reside in or appertain to the sustained organs, but exists in their environment. The same physiological facts have equal application to conditions as well as positions. Both are dominated by forces exterior to the organs imperiled.

The amount of mechanical force latent in the mechanism of the organism is greatly in excess of that needed for restoring natural and desirable position of pelvic organs. To convert the *available* into *sustained* and *constant* force adapted to the same uses requires due cultivation of the instruments of such force by art.

The remedial aim in these cases should be to restore the natural degree of fluctuation of space in the cavity of the trunk; to secure this fluctuation of space at the *inferior portion of this cavity*. This necessarily causes its diminution at the opposite or upper end of the same cavity; a transfer of the involuntary organic act from the top to the bottom of the common trunk cavity. Medication unrelated to this purpose is proper to the extent that local palliative medication is legitimate.