HOW TO TEACH DIAGNOSIS IN DISEASES OF WOMEN.*

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(With six illustrations.)

Introductory Remarks.—We all recognize that in every department of medicine the foundation of our work is diagnosis. Without a proper diagnosis we are helpless. And so it becomes necessary in gynecology to make a diagnosis—not a haphazard, slipshod, incomplete or absolutely erroneous diagnosis founded on a guess from the history of the case—but a clear and sure knowledge of the exact conditions in the pelvis, made, as far as possible, without reference to the patient's history and viewed from a purely objective standpoint.

I have always felt that, in the matter of diagnosis and treatment, the keenest knowledge as to what is pathological and what is normal, and the keenest conscience as to what requires interference and what should be let alone, are demanded in our specialty more than in any other department of medicine. A woman knows comparatively nothing about her generative organs and has great difficulty even in locating accurately the seat of pain. She has a vague idea that all her ailments come from some womb trouble. She has no means of verifying what the doctor tells her and therefore must perforce place herself implicitly in his hands and accept his statements. When she places herself in the hands of a gynecologist she submits to him not only the most delicate confidences of her life but also the most delicate part of her anatomy for his consideration and judgment. In other departments of medicine a man's diagnosis is more likely to be submitted to his fellow practitioners for approval or condemnation. With us it is less so because the woman hesitates to subject herself to repeated examinations, at the hands of different men. It is not only necessary to make an exact diag-

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nosis of the condition, but it also falls upon the medical attendant to make a careful judgment of the importance of the lesions found, and the relation they may bear to the general condition of the patient. It is a trite remark to say, do not treat the

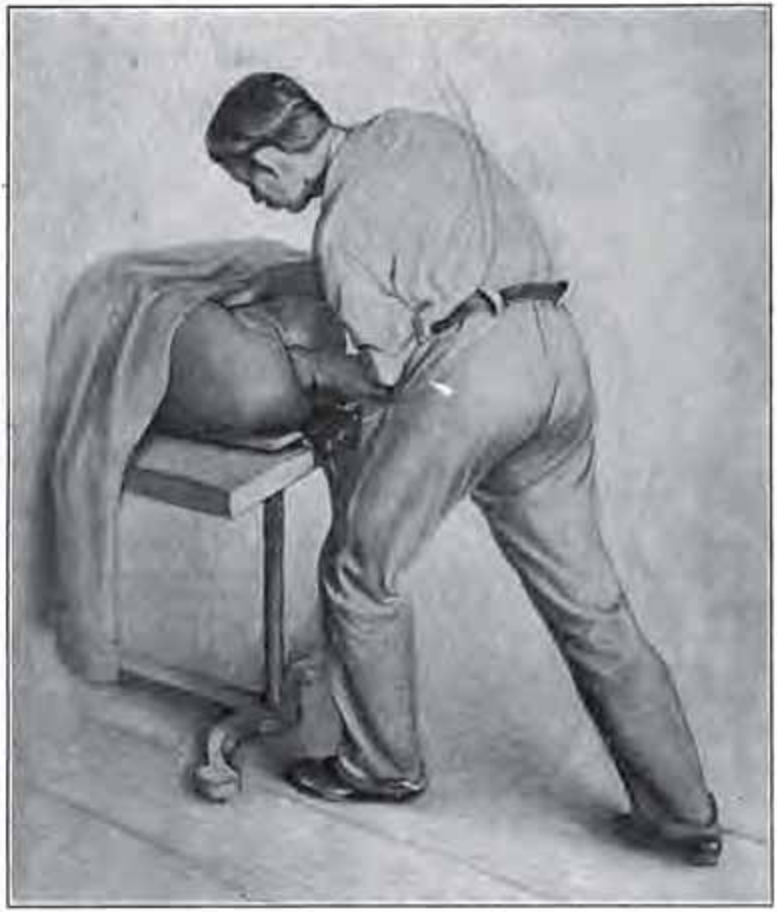

Fig. 1.—Correct position of examiner.

disease, but treat the patient. Nevertheless it is a thing to be borne in mind; that is, it is the patient who is to be restored to health, and not alone an ovary or a uterus to be removed. In this connection it must not be forgotten that the genital organs of women do not constitute the entire woman. There are other

troubles from which she may suffer producing symptoms quite identical with those resulting from lesions in the pelvis. Here, too, one must have careful judgment.

Goodell in that classic introduction to Keating and Coe's "Gynecology," which, unfortunately, is now out of print and so does not come to the notice of the younger generation of medical men, has presented so clearly and so forcibly this phase of the subject that I am sure you will pardon me if I read a brief extract:

"Nerve-strain, or nerve-exhaustion, comes largely from the frets, the griefs, the jealousies, the worries, the bustles, the carks and cares of life. Yet, strangely enough, the most common symptoms of this form of nerve disorder in women are the very ones which lay-tradition and dogmatic empiricism attribute to ailments of the womb. They are, in the usual order of their frequency, great weariness and more or less nervousness and wakefulness, inability to walk any distance, and a bearing-down feeling; then headache, napeache, and backache. Next come scanty, or painful, or delayed, or suppressed menstruation, cold feet and irritable bladder; general spinal and pelvic soreness and pain in one ovary, usually the left, or in both ovaries. The sense of exhaustion is a remarkable one: the woman is always tired; she spends the day tired, she goes to bed tired, and she wakes up tired—often, indeed, more tired than when she fell asleep. She sighs a great deal; she has low spirits and she often fancies that she will lose her mind. Her arms and legs become numb so frequently that she fears palsy or paralysis. Nor does the skin escape the general sympathy. It becomes dry, harsh, and scurfy, and pigmentary deposits appear under the eyes, around the nipples, and in the chin and forehead. The symptom-group of nervous exhaustion—anemia, backache, bearing-down, difficult walking, ovarian pain, and menstrual disorders—although often without the least gynecological significance, is usually the signal for a gynecological diagnosis. Any pelvic organ showing the slightest irregularity is singled out as the culprit and promptly placed on trial. Endless injurious local treatment and grave surgical operations may now cause the woman to suffer many things from many physicians. If no tangible disorder of the sexual organs be discoverable, the invisible endometrium or ovaries must take the blame and receive the local treatment. Whatever the inlook or the outlook, a local treatment, more or

less severe, is liable to be the issue. Yet these very exacting symptoms may be due wholly to nerve-strain, or what is synonymous, to loss of brain-control over the lower nerve-centers, and not to drect or reflex action from some supposed uterine disorder. Neither, for that matter, may they come from some real, tangible, and visible uterine lesion which positively exists. Thus it happens that a harmless anteflexion, a trifling leucorrhea, a slight displacement of the womb, a small tear in the cervix, an insignificant rent of the perineum, or, what is almost always

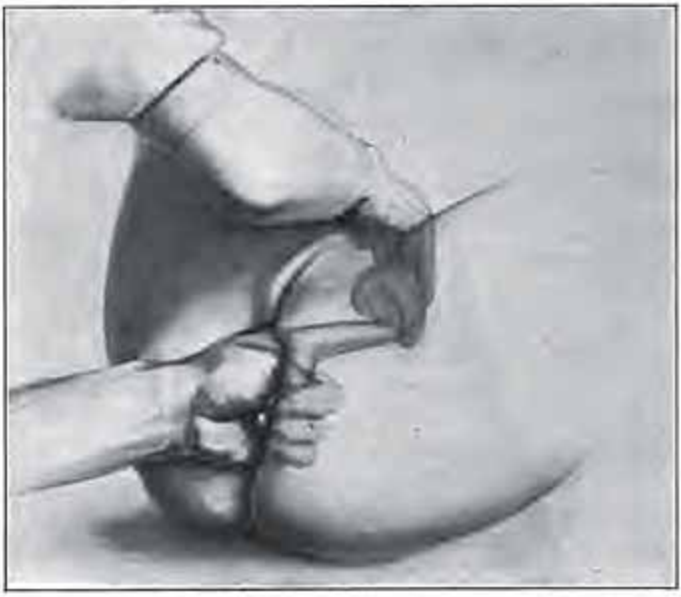

Fig. 2.—Securing the uterus between the two hands; showing the palm of the examining hand.

present, an ovarian ache, each plays the part of the will-o'-the-wisp to allure the physician from the bottom factor. To these paltry lesions—because they are visible, palpable, and ponderable, and because he has by education and by tradition a uterine bias—he attributes all his patient's troubles; whereas a greater and subtler force, the invisible, impalpable, and imponderable nervous system, may be the sole delinquent. The sufferer may be a jilted maiden, a bereaved mother, a grieving widow, or a neglected wife, and all her uterine symptoms—yes, every one of them—may be the outcome of her sorrows and not her local lesions.

She is suffering from a sore brain, and not from a sore womb.

Following out this line of thought, it is well to remember that in spite of the ever present insinuation that medicine is not an exact science, there are certain organs in the body the organic condition of which a reasonably equipped physician is able to investigate and positively know. These are the heart, the lungs, and the kidneys. It is inexcusable for any man to treat a patient for any trouble whatsoever until he knows the exact condition of these three organs. It follows from this that it should be the routine custom of every physician to examine carefully these organs as a preliminary step to the treatment of every patient that falls into his hands.

Compared with the three organs just mentioned the abdominal and pelvic cavities are a *terra incognita*. Nevertheless, before proceeding to the pelvic cavity the abdomen should be exposed and thoroughly palpated. As special points of investigation here, are the liver, the gall-bladder and its ducts, the kidneys, the appendix, and also as a possibility to be ever present before the mind, various forms of ptoses, as of the stomach or large intestine, and all forms of tumor. Here, at once, is conspicuously brought into play the special sense of touch known as the *tactus eruditus*.

The *tactus eruditus* has been so thoroughly misunderstood that perhaps I may be pardoned a word in its explanation. The general impression seems to be that it consists in a peculiarly sensitive condition of the tactile corpuscles in the index finger of the gynecologist due to long and careful cultivation. This is a great error. This accomplishment does not reside in the finger, but in the brain, and is that faculty of the mind which consists in making a mental picture of what the sense of touch conveys to it. It is known also as the scientific imagination. By its cultivation it reaches its highest perfection in the blind. The blind are said to see what they can feel, and, in all respects except that of color, get as clear a picture in the mind as the man who uses his eyes. This scientific imagination is of great value to the surgeon not only in enabling him to see what there is in the abdomen, but also in complicated operations to enable him to preserve the proper relations of parts and tissues.

Coming now to the more immediate field of the generative organs of women, in the examination of the external organs and also the vagina and cervix, the senses of touch and sight are both

employed. The condition of the remaining internal organs can only be ascertained by the *tactus eruditus*. The chief points to be investigated are the positions of the fundus, ovaries, and Fallopian tubes, their dimensions and consistencies.

Scheme of Diagnosis.—In my early experience in giving a touch course I found that the student was all at sea when he came to pass his finger into the vagina. There were no recognized points or base lines from which direction could be indicated. There was really no nomenclature by means of which I could indi-

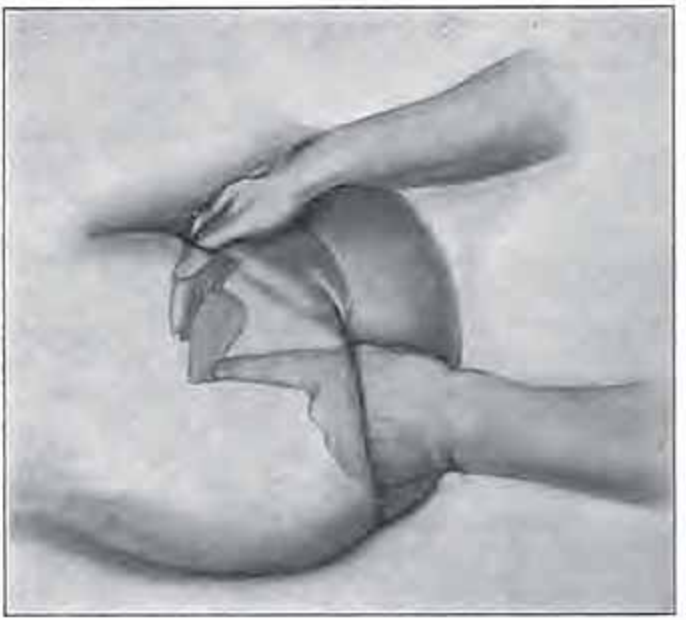

Fig. 3.—Showing the back of the examining hand; cervix and fundus in normal position.

cate to the student what to look for or how to proceed systematically and so gain his knowledge in a progressive way starting with what his finger first came in contact with and so proceeding to the end. The only means of communicating my thought to the student, or for the student to ask questions with any degree of intelligence, was to constantly refer to the charts and place the finger upon it in various directions.

Out of my strenuous efforts during the first year or two as a teacher of diagnosis I gradually evolved a scheme which quickly

demonstrated its merits in enabling the student to use his scientific imagination and follow his finger as it came in contact with the various parts. The greater the detail and the more carefully it was insisted upon the more promptly the student acquired the *tactus eruditus,* and I found that by following this scheme the student could learn as much in two lessons as he formerly acquired in twelve; it gave him something definite to fix his mind upon and an orderly course of acquiring his information.

First, then, let us consider the position of the fundus. This is a matter of direction; and before we can determine direction we must have a fixed line of departure, that is, a base line with which to compare all directions. As a base line I have selected the axis of the vagina. Now, if the finger is passed straight into the vagina it lies in the axis and therefore we are comparing direction with the finger. In order that the finger may be passed uniformly in the same direction, the forearm and the finger must be kept in one continuous straight line and parallel with the top of the table on which the patient lies. With these points clearly in mind, I find that as far as the position of the cervix is concerned all cases can be classified under two headings: First, cervix perpendicular to the axis of the vagina; second, cervix parallel to the axis of the vagina. From the position of the cervix the position of the fundus can be very positively inferred; that is, if the cervix is perpendicular to the axis of the vagina and pointing posteriorly, *i.e.* in normal position, the fundus will be anterior or in normal position. If the cervix is parallel to the axis of the vagina, a pathological condition is always present and the fundus will be in one of three places: anteflexed, retroflexed, or retroverted.

The cervix will not always be found exactly perpendicular or exactly parallel to the axis of the vagina, so that in order to classify it one must place it in accordance with the position to which it more nearly conforms. To determine this point there are three tests to which the direction of the cervix is put, *i.e.* three questions the examiner must ask himself, as follows: 1st. How does the finger approach the anterior lip of the cervix? 2nd. How does it approach the external os? and 3d. How does it approach the posterior fornix? (By posterior fornix is meant the point where the posterior vaginal wall is attached to the cervix.) The answers to these questions will be as follows: 1st. If the cervix is perpendicular to the axis of the vagina the finger

will approach the anterior lip perpendicular to it. 2nd. It will approach the external os in such a way that the os will be felt on the side or ball of the finger; and 3d. It cannot reach the posterior fornix if the finger is kept straight, without lifting the cervix unduly. If the cervix lies parallel or in the axis of the vagina, the answers will be as follows: 1st. The finger will be parallel to the anterior lip; 2nd. the finger will come end on into the external os; and 3d. it will readily reach the posterior fornix, being parallel to the posterior lip of the cervix. The finger can be swept around the cervix, being parallel to it at every point.

It is important in instructing students in diagnosis to insist

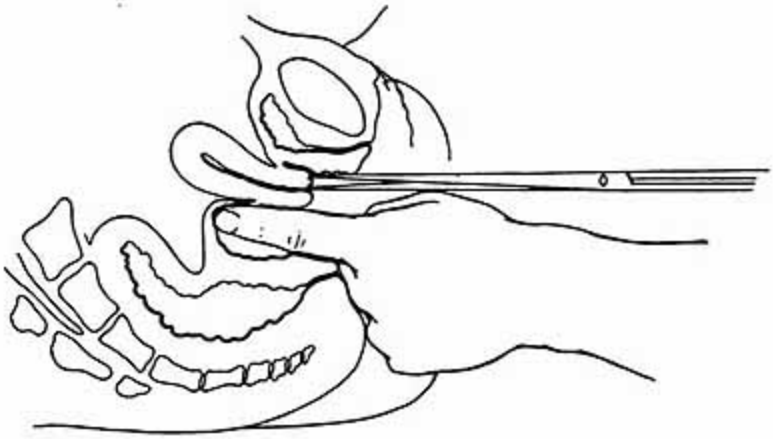

Fig. 4.—Cervix in the axis of the vagina; fundus retroverted.

upon the minutest detail of this scheme because it enables them to build up the mental picture of the contents of the pelvis and so cultivate the *tactus eruditus*.

I prefer to examine with one finger rather than two. The fact that the middle finger projects half an inch beyond the index does not necessarily enable the examiner to reacher further into the pelvis for the reason that the ring finger cannot be bent at a right angle to the middle finger and by the extended knuckle when bent it takes off as much from the proximal end of the middle finger as the latter projects beyond the index. My method is to flex the thumb in the palm of the hand, and flex upon it

tightly all the fingers but the index. That makes the fist as small as possible, and by keeping the side of the finger up the smallest diameter of the fist comes into the smallest diameter of the outlet, and so the finger can be made to reach the greatest distance into the pelvis. By keeping the finger and the forearm in the same line the elbow can be placed upon the hip and the weight of the body thrown upon it to carry the fist into the pelvis until obstructed by the tuberosities of the ischium. If the examiner is using his right hand the natural position for him to take is to place his right foot forward and the left foot back, separating his feet sufficiently to bring his forearm, when kept in line with his finger, parallel to the top of the table. If examining with his left hand, his left foot should go to the front, and vice versa.

Before beginning the bimanual manipulation it is wise to learn all one can from the finger in the vagina, reserving the bimanual method for the exploration of what lies beyond.

Having now decided upon the position of the cervix, the next information to procure is the location of the fundus or body of the uterus. Not only is the fundus more easily recognized than any other organ in the pelvis, but it now becomes the point of departure for the location of other organs. Indeed, it is the guide post to everything else in the pelvis, and in complicated cases it is only by frequent recurrence to it, from time to time in the examination, that the other organs can be differentiated.

In the bimanual method the mistake is frequently made of placing the external hand so high on the abdomen that in pressing it down into the pelvis the thick abdominal wall, the omentum, and intestines are carried before it, thus rendering it impossible to recognize any organ with distinctness. My custom is to place the tips of my fingers just at the hair line, and perpendicular to the abdominal wall. With a moderate amount of pressure the fingers are then pushed toward the umbilicus, pressing before them the fat, the omentum, and the intestines, thus straightening out the fingers upon the abdomen until the ball of the hand comes directly over the symphysis. Steadying the ball of the hand firmly against this bone, with a slightly rotary motion the fingers are insinuated down into the pelvis their full length or as deep as the resistance of the abdominal wall will permit. The external hand is now held firmly in this position and with the finger of the other hand pressing against the cervix the entire

uterus is lifted up in successive impulses until it is made to palpate against the fingers of the external hand. If the cervix has been found in normal position the fundus, as a rule, can be thus felt and located. In cases in which great resistance is offered by the patient she can be made to relax the abdominal wall by taking a long, full breath and holding it as long as possible. When expiration comes complete relaxation is secured and manipulation proceeds comfortably and successfully. In extremely nervous patients I resort to the device of having them hold their

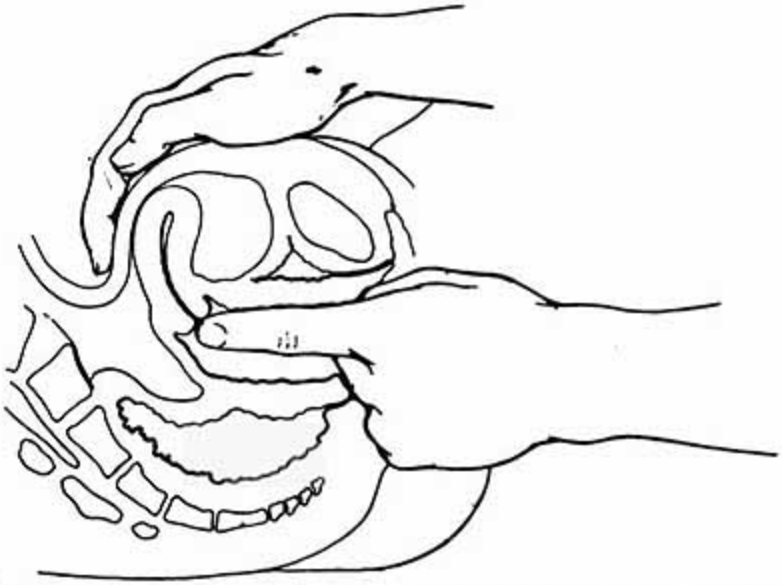

Fig. 5.—Fundus being restored to normal position; the cervix gradually changing to right angle to the axis of vagina.

breath while I see how many numbers I can count aloud, thus encouraging them to hold it as long as possible. For the longer the breath is held the more complete is the relaxation when expiration follows. This process may be repeated one or more times until perfect relaxation is secured. In bimanual manipulation both hands should not be in motion at the same time. One is used to carry the parts nearer to the other hand and hold them there while they are palpated by it.

If this maneuver is not successful, then the finger in the vagina lifts the uterus as high as possible and holds it there

while the external hand depresses the abdominal wall successively at various points over its expected location until the impulse given to the fundus by the hand is felt upon the finger at the cervix. It is the first sensation that is most difficult to obtain. When once that has been accomplished the external hand follows the denser tissue which indicates the presence of the fundus down into the pelvis, outlining the form and size of the uterus. In this way a clear mental picture is obtained. The mobility of the organ is learned by securing it between the two hands and carrying it first up and then down to discover through how great an arc it will swing.

It is important to have the bladder empty, and as a routine custom the patient should void urine the last thing before getting onto the table. If this has been neglected and the fundus of the uterus cannot be located, the examiner should suspect a full bladder and make sure that it is empty before proceeding. It is no unusual experience in my touch course at the Polyclinic for students to diagnose retroversion of the uterus when really its position is due to a full bladder, and the mistake is corrected by passing the catheter or having the patient void. After which the fundus is promptly felt just above the pubis.

Normal position for the fundus is anywhere between the symphysis pubis and the promontory of the sacrum; the essential feature is that it must be movable.

Taking up now the position of the cervix *in the axis of the vagina:* As has been said, this always indicates a pathological condition and the fundus will be found in one of three places, retroversion, retroflexion, or anteflexion. To determine its position the finger is passed along the posterior lip of the cervix, pushing it up into Douglass' pouch as far as possible. If the finger comes into a sharp angle beyond which a tissue rounds out and even comes forward in the shape of the fundus, the probabilities are that the condition is one of retroflexion. The same mental picture, however, may be presented by a fibroid tumor in the posterior wall of the uterus while the fundus lies above, either retroverted or anteflexed. Bimanual manipulation, as previously described, will determine this.

If the finger in being pushed into Douglass' pouch does not discover a sharp angle, but finds that the uterine tissue is continuous with the cervix as far as can be reached, that it widens out and takes the shape of the normal fundus, the probabilities

are that the uterus is retroverted. It may, however, be anteflexed, the elongated cervix, which invariably attends anteflexion, being sufficiently long and widening out at the flexure to give the impression of a fundus. The original impression, therefore, must be confirmed or corrected by eliminating the fundus from an anterior position or finding it there. This is accomplished by the bimanual manipulation, as previously described.

If in passing the finger back into Douglass' pouch the uterine tissue is lost to touch, in following the cervix, so that Douglass'

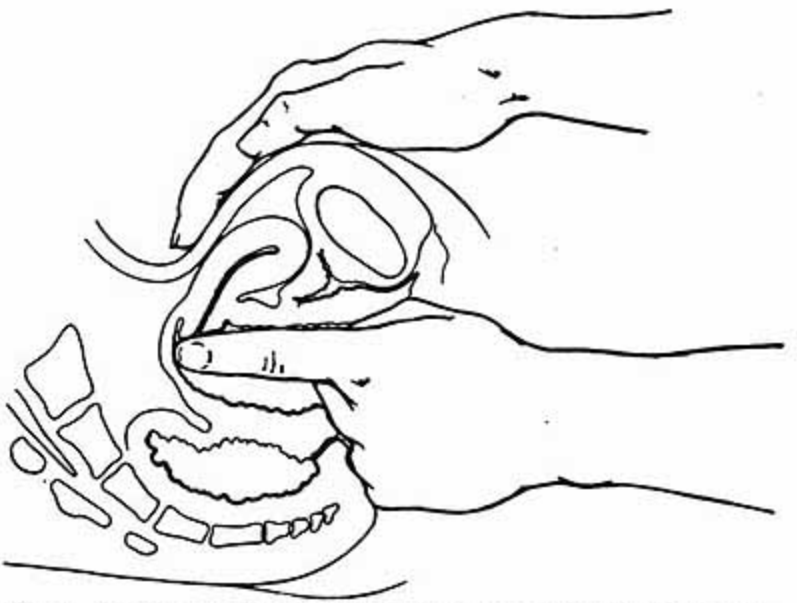

Fig. 6.—Fundus completely restored; cervix at a right angle; finger cannot reach posterior fornix.

pouch is empty, the probabilities are that the fundus lies to the front, in anteflexion. This must be confirmed by the bimanual manipulation. The rounded mass resembling a fibroid which we have spoken of may be a prolapsed and cystic ovary; this is differentiated by its less pronounced density and by its usually being continuous with inflammatory tissue, reaching out to one side or the other.

After locating the fundus, the important points to be determined are its size, its density, and its mobility. These are determined by securing the organ between the two hands, carry-

ing both hands up or down together to determine its mobility, palpating it as completely as possible to estimate its size, and its density. By endeavoring to make as accurate a mental picture as possible in each instance a standard of comparison in all these respects is readily acquired. This is confirmed or corrected in many instances by subsequent operation, laparotomy, or vaginal celiotomy, and soon becomes very accurate.

Fibroid tumors of the uterus, if small, are felt as nodular or irregular masses projecting from the wall of the uterus. They may be pedunculated when they must be differentiated from a cystic ovary.

After the position, size, density, mobility, and fibroid condition of the uterus have been determined the organs next requiring investigation are the ovaries and tubes. The examiner must keep clearly in mind the normal relations of these organs to the uterus, remembering that they are attached to the uterus and are carried with it more or less completely in whatever position the fundus may be placed. If the fundus is in normal position and the appendages are normal, they will be found to either side of the fundus and nearly on a level with it. If the appendages are diseased, however, even if the fundus remain in normal position, they will be prolapsed more or less completely toward or into Douglass' pouch. At times they may be readily mistaken for the fundus itself, so that it is necessary to locate the fundus, to keep its position in mind, and from time to time to revert to it as a guide if any uncertainty arises.

To feel the ovary pass the finger directly beyond the cervix at the side, the finger nail being toward the cervix, force the fist well into the pelvis, carrying the finger as far beyond the cervix as possible. Then, keeping the fist firmly placed, elevate the end of the finger as high as possible. This will lift the base of the broad ligament and thereby tend to swing the cervix under the finger toward the examining side of the pelvis and likewise carry the fundus in the opposite direction, thereby dragging the ovary down toward or onto the ball of the finger; then by repeatedly bending the last joint of the finger a sort of ballottement is accomplished by which the ovary recedes from the finger and drops back again upon it. When once this sensation has been produced the external hand can push the parts down on to the examining finger holding it there and palpating it to the fullest extent. If the tube and the ovary are adherent and a tumor formed thereby,

this can be readily made out. If the ovary itself is large and cystic this can also be determined. A hydro- or pyosalpinx is recognized by its somewhat sausage shape and usually a less denseness of substance. A tubo-ovarian abscess presents in a larger mass and usually irregular in outline and more or less adherent. An ectopic pregnancy is differentiated from inflammatory condition by the history of the case and by absence of tenderness on pressure. An engorged or prolapsed sigmoid flexure is differentiated by outlining the rectum at some point in its course and rotating the finger over it from side to side, following it up, and determining its continuity with the suspected mass. Its contents can also be compressed and indented with the finger.

Undoubtedly the left side of the pelvis can be explored more thoroughly with the finger of the left hand, and the right side of the pelvis with the finger of the right hand, than by the same finger for both sides. In difficult cases it is my custom to do this. Ordinarily, however, I use the finger of the left hand for both sides, and find that I can determine the conditions with sufficient accuracy.

No effort has been made in this article to mention all the conditions that may possibly present in a case for examination, the effort having been to take the most common conditions and use them to illustrate the method. Its application will become a routine custom by practice and experience, and the details of the method that have been insisted upon will insure definiteness and accuracy.

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