THE VAGINAL DIAPHRAGM

Its Fitting and Use in Contraceptive Technique

BY

LE MON CLARK, M.S., M.D.
Chicago, Ill.

Author of "Sex Education" and "Emotional Adjustment in Marriage"

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PREFACE

The purpose of this monograph is to consider only one method of contraception. Actually, of course, it is a combination of two methods, the use of a mechanical barrier, preventing direct insemination of the cervix, combined with a substance which, due to its consistency and viscosity, offers further mechanical protection. At the same time this substance gives chemical protection through serving as a vehicle for a spermicidal agent. This combination method is generally accepted as the most effective.

The writer hopes that this work may serve as a starting point for the elaboration of improvements in the technique of imparting information to patients in such a way as to help eliminate failure due to carelessness or misunderstanding—failure of the human element rather than failure of the method.

I am grateful to those friends who have taken the time to read the manuscript and who have offered many valuable suggestions.

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L. C.

Chicago.

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ITS FITTING AND USE IN CONTRACEPTIVE TECHNIQUE

CHAPTER I

INTRODUCTION

Idealists still assert that we do not have a perfect contraceptive and are insistent in their statements that we must look for something better than any of the means now at our disposal. From the point of view of the idealists, they are right—we do not have an *ideal* method, and progress in developing better methods is urgently needed. But we do have a very good method, the vaginal diaphragm combined with a spermicidal jelly or cream, which yields eminently satisfactory results in the experience of the majority of patients, provided that the physician thoroughly and carefully discharges the duties which, in the very nature of the case, are his responsibility.

A physician's duties are, first, to see that the patient is properly instructed in the method so that she understands it; second, to fit the patient with a diaphragm of the right size and of a type suited to her particular needs and anatomical requirements; and third, to drill her in the insertion and removal of the diaphragm until she has acquired an aptitude for using it correctly.

To fulfill this obligation the physician must have some real knowledge of the method and use judgment

in recommending its use. He must have some mechanical ingenuity and a great deal of patience. But above all, he must have a real sympathy towards the emotional rather than the purely physical or physiological problems of his patients.

We need no longer consume time with arguments about the need for adequate birth control or the moral or religious aspects of the question. The 1937 convention of the American Medical Association officially recognized the necessity of investigating and evaluating contraceptives and opened the pages of its Journal for the publication of results of such studies. From the religious standpoint, the most orthodox of all churches has sponsored the use of one method, which unquestionably opens the whole problem to a discussion of more adequate methods.

The present monograph seeks to discuss thoroughly only one method of contraception, the use of the diaphragm pessary or vaginal diaphragm combined with a spermicidal jelly or cream. This method is that now most widely used by recognized authorities throughout the world. It cannot be used in every case, but it can be used in the majority of cases which come under the eye of the average physician in private practice. Intelligent and skillful fitting on the part of the physician with adequate instruction of the patient will make the number of those who cannot use the method very, very small.

The discussion here is limited to the use of the ordinary hemispherical diaphragm. Specialists seeing a great many cases, or clinic physicians dealing with low income groups where bad obstetrics and many pregnancies have left serious complications behind, may have occasion to use the Matrisalus type of diaphragm. The writer has never used one and a clinic

with records for over a thousand cases has never used one. The average physician would rarely need one.

Briefly, the Matrisalus type is a diaphragm dome put upon a spring rim shaped like the Smith-Hodge pessary. Some advocate their use in certain types of relaxation, notably marked cystocele, but the results are not always satisfactory.[1]

If it is desired to test the feasibility of using the Matrisalus type an ordinary Smith-Hodge pessary may be inserted, reversed end for end, so that the crossbar comes up behind the symphysis in the post-pubic vault. It may even be converted into a contraceptive diaphragm by tying over it loosely a rubber condom, cutting off the surplus material. Such a diaphragm would last some time and the condom could be easily replaced.[2]

A newer development in a special type is the Rim-fold diaphragm. Using the Findley modification of the Albert Smith pessary with flexible sectors at opposite poles of the circle so that the hard rubber rim may be folded for insertion, it undoubtedly has definite advantages for special cases. This monograph, however, is concerned with the technique of fitting the ordinary types.[3]

As is always true with the rapid development of any new idea in medicine or science, experts and pseudo-experts appear as legion to champion their own "methods" of instruction and procedure. The present writer may be open to this criticism. Some of these methods are the result of peculiarities in the mental or physical make-up of the particular expert advocating them. Thus, one well-known authority in

[1]Dewees, Lovett, and Beebe, Gilbert W.: Contraception in Private Practice, J. A. M. A. **110**: 1169-1172, 1938.

[2]cf., Dickinson, Robert Laton: Control of Conception, Baltimore, 1938, The Williams and Wilkins Co., p. 206.

[3]Findley, William M.: The Rimfold Diaphragm. J. Contraception, 3: 128-129, June-July, 1938.

the field of birth control some years ago advocated that the vaginal diaphragm be inserted with the thumb. He happened to have a very long thumb, and for him it was easy to do it that way. But for those of us who, as obstetricians and gynecologists, wish fervently for another quarter inch on the tips of our fingers because they are, if anything, shorter than normal, such a method would be impractical.

Dome up or dome down? Should a douche be taken and when? If a douche is to be taken, what instructions should be given? Which is preferable, the spiral spring or flat spring diaphragm? Are diaphragm inserters helpful? How should jelly be used? Is the vaginal cream better? All these and many other questions need far more adequate treatment than that which they have heretofore received. The present work aims at a comprehensive discussion of these questions and many others.

It is not concerned with questions of why birth control may be desired or with its social, cultural or economic significance. Its one aim is to try to make one method successful when it is advised wisely and used faithfully. If it is not the ideal method, it does, at least, help make the best of what we have available.

Reliable statistics from well-known birth control clinics indicate that the method is successful in more than 95 per cent of all cases in which it is advised. The actual success in private practice should be above 98 per cent. In other words, ninety-eight out of each hundred women using the method should be able to control conception. In testing success of the method in large groups the most realistic results are obtained from the number of failures expressed in relation to the woman exposure years.

One physician reports more than a thousand cases in a part-pay clinic without a recorded or reported failure. Is there any other field of medical endeavor in which a practicing physician may achieve similar results? To claim, therefore, that we have nothing really adequate for birth control seems at variance with our relative ability to solve other medical problems.

General practitioners, as well as specialists in the field of obstetrics and gynecology, must be prepared to meet this problem. A primary requisite is that the physician, himself, be able to discuss any and all problems in the field of sex easily and naturally, using the scientific terminology with facility. To do this physicians need to free themselves from the inhibitions which so many acquire in childhood and which may survive into adult life despite a medical education.

It is not enough for the physician to be *willing* to discuss the question. He must be willing to *open* the question *for discussion.* After all, it is easy enough for the physician to say, "Do you want a larger family immediately?" when examining a patient for her first postpartum visit, or to ask whether fear of pregnancy is a problem or to inquire as to whether or not sex relations are entirely satisfactory. If a physician is not prepared to do so, who is? And if a physician, himself, has not the courage or the ability to deal with the problem, where else may people needing help hope to find it?

Ability to deal with problems in this field will some day be recognized as one of the important duties of every physician. When it is so recognized and adequately dealt with by the alert family doctor or general practitioner, fewer patients will ultimately find it necessary to visit psychiatrists.

CHAPTER II

THE METHOD

A method of contraception to be satisfactory must:

1. First and foremost, be effective.
2. It must be simple to use.
3. It must be inexpensive.
4. It must be esthetically acceptable to both partners.
5. It must not impose activities or requirements upon one which are so uncomfortable, so annoying, or so distasteful as to make the method a burden.
6. It must not require unusual toilet facilities or apparatus.
7. It is especially desirable if it places control in the hands of the wife. As she bears the greater penalty if pregnancy occurs, she is more apt to be certain that the method is used if the responsibility is hers.
8. It must not inhibit normal sensory experience. No method which may be used by the husband can avoid such difficulty.

The method which approximates the requirements in the above list is that of the vaginal diaphragm, which is fitted to the patient by a physician, combined with a mild, bland, spermicidal jelly or cream. During the process of fitting, the physician should thoroughly instruct the patient in the use of this combination.

No physician should give contraceptive advice unless he attempts earnestly and sympathetically to solve

the problem in such a way as to make the solution of the problem really acceptable to the patient.

An eminent obstetrician used to tell his medical students that the only thing approaching a positive contraceptive procedure was to advise the husband to use a condom, the wife to use a vaginal jelly and then arise immediately after intercourse and take a douche. His instructions to the patient as to the best method of taking a douche were to lie down upon her back in the bathtub and then let the water run in and out of the vagina.

Is it possible to imagine any fastidious woman undergoing eagerly an emotional experience which resulted in the necessity for her going through such an unpleasant process for a method of contraception? If the husband found that his wife developed a frigidity complex and lost all interest in satisfactory sexual expression, it ought not to be difficult to account for at least part of the cause. To advise a method which could only be obnoxious to the patient represents an utter failure by the physician. He has made no attempt to find a satisfactory solution of her problem from the standpoint of sympathetic understanding.

The Vaginal Diaphragm

The vaginal diaphragm was invented in Germany and popularized in Holland some fifty years or more ago. It was widely used in Europe before finding real acceptance in the United States, a matter of only fifteen or sixteen years ago.

Vaginal diaphragms are made in two primary types. One has a spirally coiled spring made of piano wire or other high-grade spring steel wire covered with a thin rubber dome. This type is more widely used in the United States. The other type contains a flat

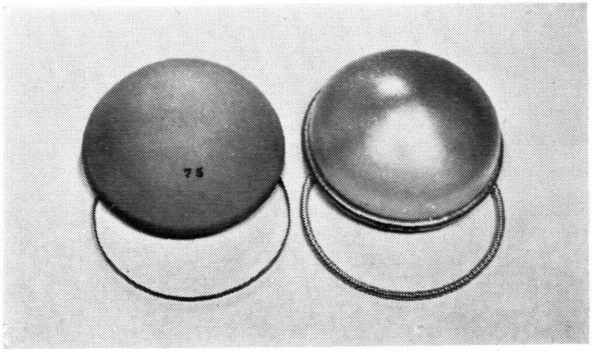

Fig. 1.—On the left a flat spring (Mensinga type) diaphragm and the spring used in the rim. On the right a spiral spring diaphragm and the spiral coil spring.

Fig. 2.—This illustrates the primary functional difference between the two types, i.e., that the spiral spring is flexible in two planes, while the flat spring is flexible in only one. The flat spring diaphragm may be compressed to form an ellipse, but it will not bend in the other plane. For the significance of this difference see discussion on cystocele, etc.

watch spring in the rim, made from spring steel similar to that in the mainspring of a watch. Aside from these distinct differences, the two types appear very similar.

They are made in three different ways. One method is to use sheet rubber to cover the spring and to form the web or dome and then, by vulcanizing them over a form, give them the proper shape. Another method is to make them by dipping a form into a liquid latex compound, the spring being covered by a latex dip. A third method uses so-called male and female molds, enormous pressure forcing a small lump of rubber into a thin dome covering the spring. Diaphragms are made in the United States today by all three of these methods.

Until very recently the only method for manufacturing the flat spring (Mensinga) type was that in which sheet rubber is used. This is the most costly method. As a result, there has been a price differential between the two types, the flat watch spring type costing more than the spiral spring.

Minor differences result from different methods of manufacture. The rubber may vary in thickness. The rims may be larger or smaller in size. The spring in the rim may be relatively stiff or tense, or rather soft and flexible. The dome may be high or low.

For all ordinary use the average diaphragm, of moderate depth, made of soft thin rubber, with a reasonably small rim of medium spring tension, will give entirely satisfactory results.

Vaginal Jellies and Creams

Vaginal jellies are made in several different ways. Some contain a considerable amount of glycerin in the form of a boroglycerite of starch. Due to the

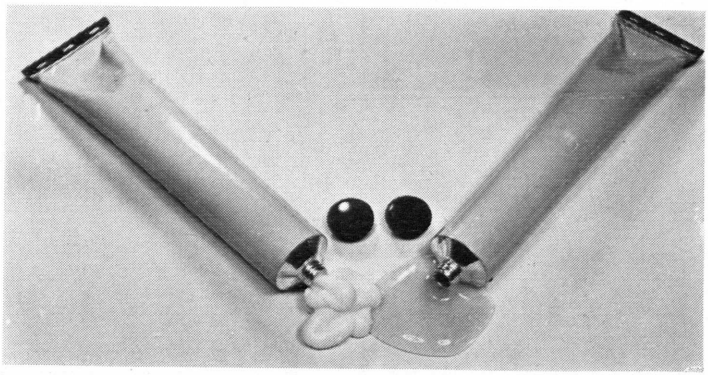

Fig. 3.—On the left a cream, on the right a jelly. A jelly, to be effective, must not be too stiff as it may not spread easily, giving mechanical as well as chemical protection. The same, of course, is true of a cream.

hygroscopic action of the glycerin such a mixture may produce an annoying, watery discharge which may be most distasteful to the patient for several hours after insertion.

More recently the use of vegetable gums as the primary thickening ingredient for jellies has made it possible to reduce the glycerin content to a relatively small percentage. Gum tragacanth, gum karaya, and gum from the locust bean and several others are all commonly used as a thickening agent. Some jellies, going a step further, employ a mild astringent to counteract any hygroscopic effect of the glycerin. This helps to prevent any undue discharge of mucus.

Much more recently there has been developed the vaginal cream. There seems to be a very definite and pronounced movement towards the use of such creams and they are rapidly finding wide favor. Women are accustomed to creams of all kinds, cold cream, vanishing cream, etc., and for this reason a vaginal cream may be more readily acceptable than a jelly. A cream is less lubricating than jelly, has no hygroscopic effect and, therefore, in many cases gives more satisfactory results.

There is, however, an additional reason for the difference of opinion as to which may be preferred. The amount of pre-coital mucus discharged varies greatly depending upon the physiological characteristics of the particular woman. In some it is so small in amount as to leave the vaginal introitus abnormally dry. In others it is profuse enough to distress and embarrass the woman.

In those cases where the amount of pre-coital mucus is unusually small, the use of a jelly which is more lubricating may be desirable, since it will contribute something in the way of additional lubrication. Where,

however, there is an unusual amount, the use of a vaginal cream may be more pleasing.

It is probably wise to supply the patient with both a tube of jelly and a tube of cream at the time of fitting, telling her to use them both and then re-order the one which is most satisfactory to her, since one is as effective as the other.

In compounding jellies or creams the tendency has been to use "shot-gun" prescriptions which contained a little bit of everything regardless of possible side results. Some of the ordinary commercial jellies and creams now on the market, therefore, produce definite vaginal irritation. Only a product which is made by a reputable manufacturer, the formula of which is available, and which will not cause irritation, should be recommended.

When the jelly is to be used with the diaphragm, it does not have to possess such a potency that it will destroy spermatozoa instantly upon contact. With the diaphragm serving as a baffle plate and preventing direct insemination of the cervix, it will take the most active spermatozoon at least several minutes to make its way around the diaphragm and into the cervical os. This gives even a relatively bland jelly opportunity to immobilize and kill the sperm. There is no necessity, therefore, for having a jelly or cream so highly medicated that it proves irritating.

Diaphragm Inserters

During the past ten years, various types of diaphragm inserters have been developed. Some argue against the inserter on the basis that it introduces another complicating factor. Experience has shown, however, that some patients can insert the diaphragm more easily, more accurately, with greater confidence,

and with far less trouble when the inserter is used. If the patient prefers to insert the diaphragm by hand, there is no reason why she should not do so, but, given a choice of the two methods of insertion of the diaphragm, with the inserter or without it, the majority of patients will choose to use the inserter if they are adequately instructed in its use. The personal equation and the bias of the physician will color the patient's reaction.

An inserter should be properly designed, simple in construction, with no projecting parts that might scratch or injure the mucosa of the introitus during its insertion or withdrawal. It should be inexpensive.

Anatomical Considerations

The kind of a diaphragm which should be used, i.e., spiral coil spring or flat watch spring, will depend upon some anatomical relationships and upon the condition of the structures immediately adjacent to the vaginal walls.

The vagina ordinarily has three axes as illustrated in the accompanying drawing. When a woman is lying upon her back, the entering axis through the vaginal introitus is almost horizontal. The long axis of the vagina slopes downward and backward at approximately forty-five degrees from the horizontal. The third axis is again almost horizontal, running from the depth of the vagina up behind the cervix in the posterior fornix.

In a nulliparous woman with a normally developed vagina where there has been no change incident to childbirth, the spiral spring diaphragm can ordinarily be used. Where a multiparous woman has a firm pelvic floor, good muscular tone and relatively little rectocele or cystocele, the spiral spring diaphragm will also give a perfectly satisfactory fit.

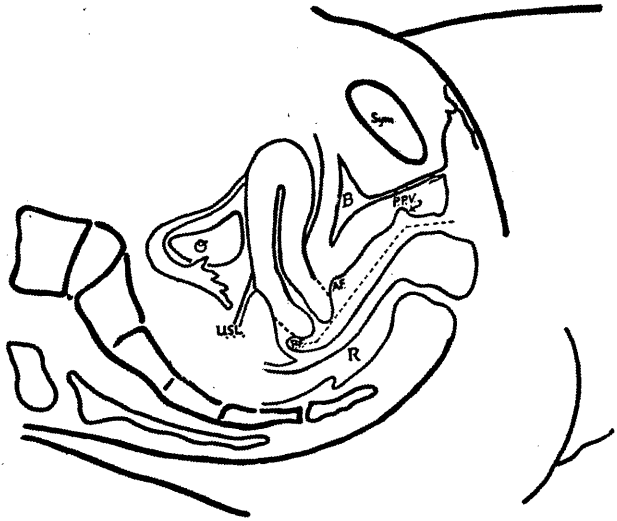

Fig. 4.—For discussion see text. *Sym.*, symphysis pubis; *B*, bladder; *P.P.V.*, postpubic vault; *O*, ovary; *A.F.*, anterior fornix; *P.F.*, posterior fornix; *R*, rectum; *U.S.L.*, uterosacral ligament.

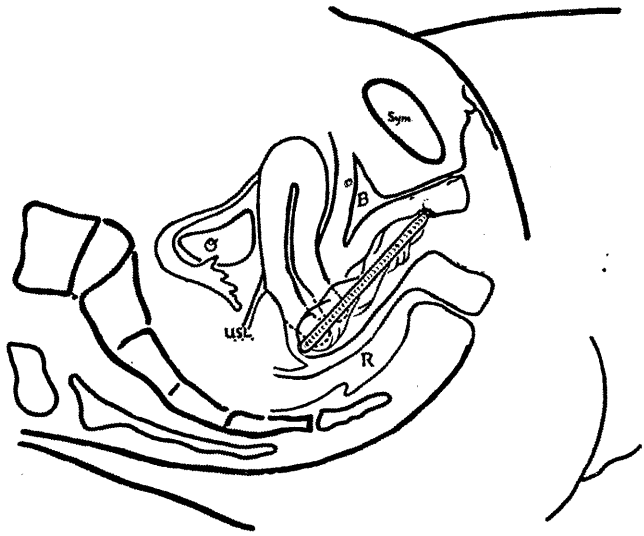

Fig. 5.—Shows in diagrammatic form the normal placing of the diaphragm. Note how it lies at an angle to the vaginal introitus. Also note that there is no attempt to cap the cervix. The diaphragm is illustrated as being inserted *dome up*. For reasons see discussion later in text. Where there is a deep postpubic vault, this diagonal placement may be much greater. See Figs. 13 and 14.

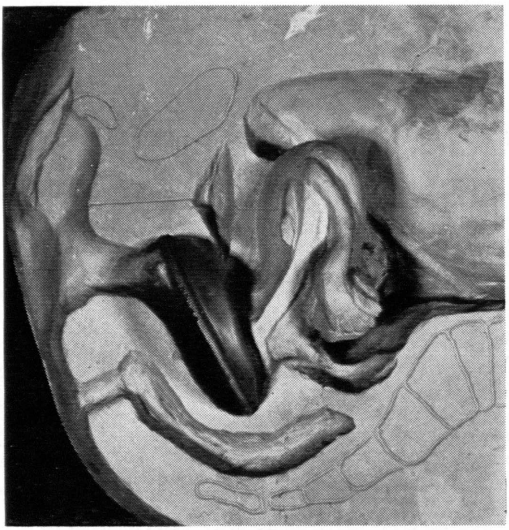

Fig. 6.—This shows a diaphragm in normal position in a model rather than in diagram form.

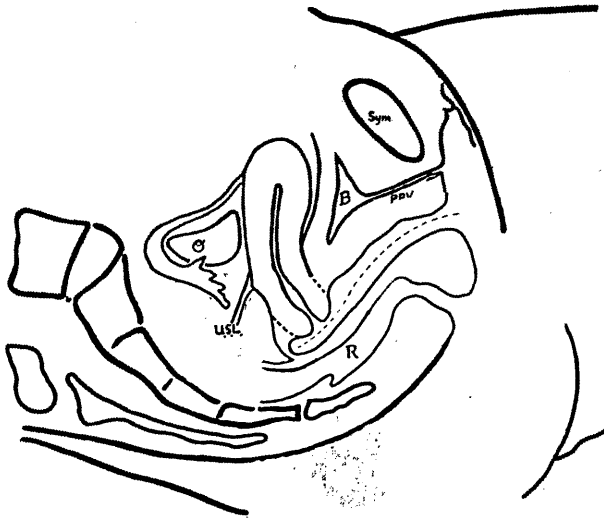

Fig. 7.—Illustrates a condition found in nulliparous women where, due to a slurring of the vaginal axes, the introitus and lower portion of the vagina are nearly parallel, and the postpubic vault is almost obliterated. Such a case is more adequately fitted with a flat spring type of diaphragm which will seat itself more firmly.

The diaphragm ordinarily lies somewhat oblique to the long axis of the vagina where the muscles of the pelvic floor hold it in position. It extends from the posterior fornix to the postpubic vault. Insertion of the penis into the vagina depresses the perineal body, affecting the anterior portion of the vagina very little. The rim of the diaphragm, therefore, causes no discomfort. In some nulliparas there is a slurring of the vaginal axes, due to a shortened anterior vaginal wall. The postpubic vault is not clearly defined and the main axis of the vagina and that of the vaginal introitus run more nearly parallel. Where this slurring occurs, the axes curve one into the other with rounded corners like an elongated letter S instead of an obtuse angled, reversed letter Z. Here the spiral coil spring diaphragm will not give satisfactory results. A flat spring diaphragm, however, will ordinarily straighten out the slurred long axis and seat itself firmly.

In some parous women there is considerable cystocele with marked relaxation. In such a case, although the upper two-thirds of the diaphragm may be held in place in the long axis of the vagina, the lower third of a spiral spring diaphragm may be bent down by the protrusion of the anterior wall due to intra-abdominal pressure upon the relaxed or torn vesicovaginal fascia. If, however, the deeper two-thirds of a flat spring diaphragm which is flexible only in the plane of the rim (see Fig. 2) is held in place by the long axis of the vagina and supported by the larger pelvic muscles, the lower or anterior one-third cannot bend down and, therefore, holds the cystocele up in place.

Some women have a long, firm cervix which actually bears upon the posterior wall of the vagina even when it is moderately distended. In such a case where the

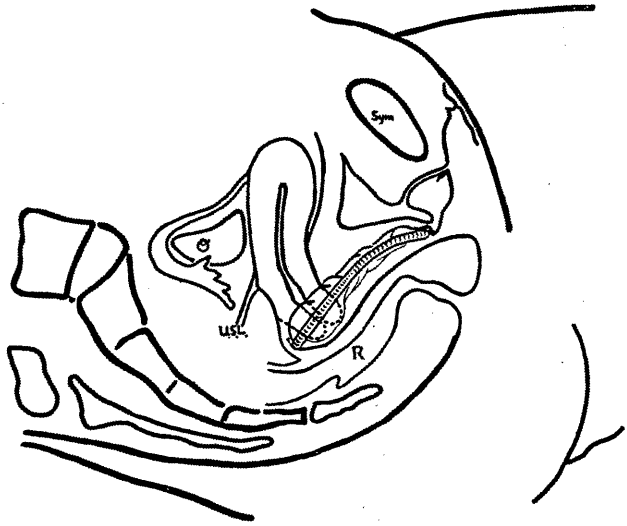

Fig. 8.—This shows the lower or anterior portion of a spiral spring diaphragm bent downwards by a cystocele. In this position it partially occludes the vaginal introitus.

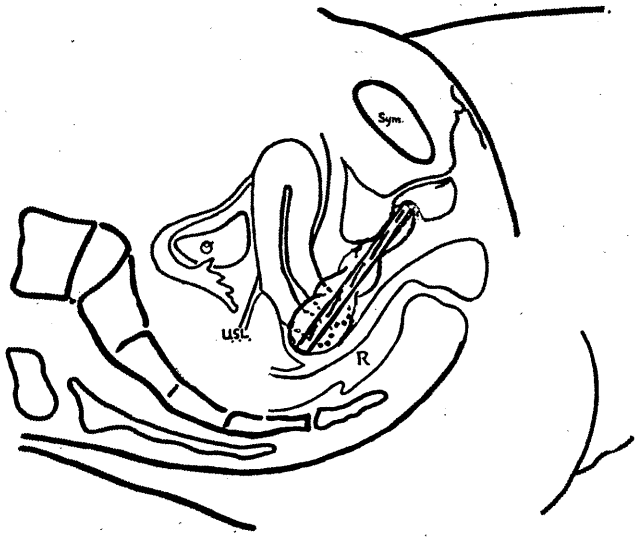

Fig. 9.—Shows a flat spring, rigid type diaphragm supporting the cystocele. Since the long axis of the vagina holds the upper (cephalad) portion of the diaphragm in normal position and at the proper angle, the rigid rim supports the cystocele.

Fig. 10.—A long, firm cervix frequently bears upon the posterior wall of the vagina even when it is dilated. A spiral spring diaphragm, especially if too flexible, may curl up, or buckle, in front of this and, of course, give no protection.

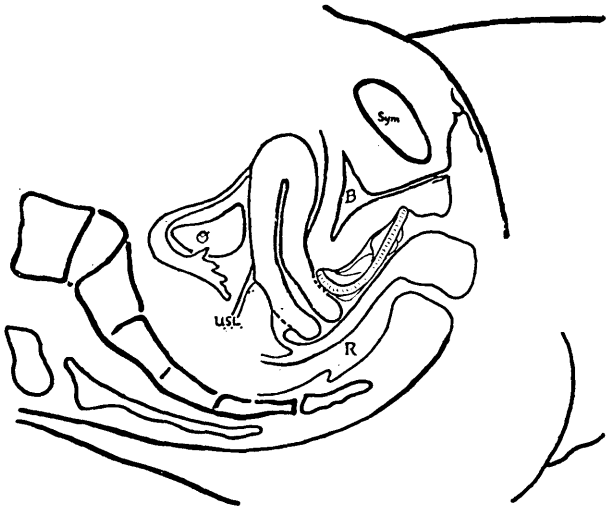

Fig. 11.—A flexible, spiral spring diaphragm curled or buckled up in front of the long, firm type of cervix. A flat spring, rigid type may force its way past such a cervix. Or the use of a diaphragm inserter (discussed later) will obviate this danger.

diaphragm is to be inserted by hand, the spiral spring type may buckle or curl up into the anterior fornix, failing to cover the cervix.

The rigid flat spring type, on the other hand, will be more apt to force its way past or beneath the cervix into the posterior fornix. It will be more likely to make the patient realize that something is wrong because of the difficulty of insertion.

Factors Determining Size of Diaphragm

The depth of the vagina from the inferior posterior aspect of the pubis to the deepest portion of the posterior fornix determines the size of the diaphragm to a very great extent. This distance may be considered the net depth of the vagina as differentiated from the total depth. The total depth is influenced by the depth of the funnel of entry, and the width of the pubis with its attached structures. There may be considerable variation between total depth and net depth of the vagina in various patients.

Retroversion of the uterus may lengthen the distance from the pubis to the anterior fornix, making careful fitting and extra instruction necessary, since the diaphragm might go into the anterior instead of the posterior fornix, leaving the cervix uncovered.

In some instances of retroversion when corrective efforts are desirable, a Smith-Hodge pessary may be used. Depending entirely upon the individual case, it may or may not be possible to use the diaphragm at the same time. No fiat can be given. It is entirely a matter of the individual situation.

Where marked relaxation of the pelvic floor exists, complicated with poorly healed lacerations due to childbirth, with uterine prolapse accompanied by

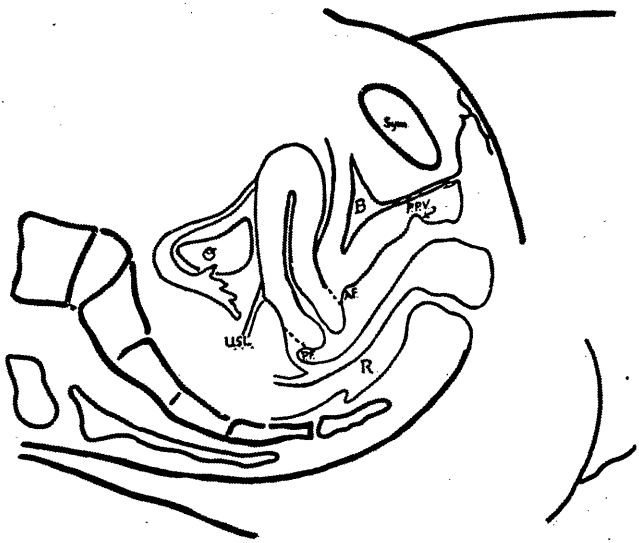

Fig. 12.—For discussion see text. *Sym.*, symphysis pubis; *B*, bladder; *P.P.V.*, postpubic vault; *O*, ovary; *A.F.*, anterior fornix; *R*, rectum; *U.S.L.*, uterosacral ligament.

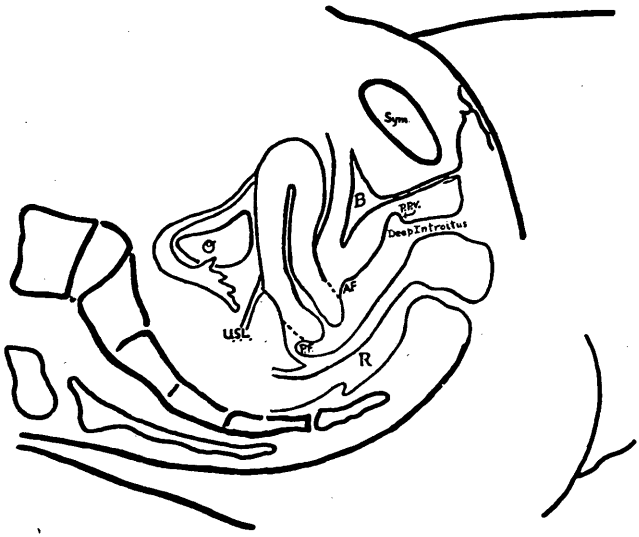

Fig. 13.—Essentially normal with well-defined axes and fornices, but with a deep vaginal introitus. This makes the net depth of the vagina from the postpubic vault (*P.P.V.*) to the posterior fornix (*P.F.*) less than in Fig. 12. Such an anatomical situation would require a smaller size diaphragm, granted that the tone of the supporting structures in the two cases was the same.

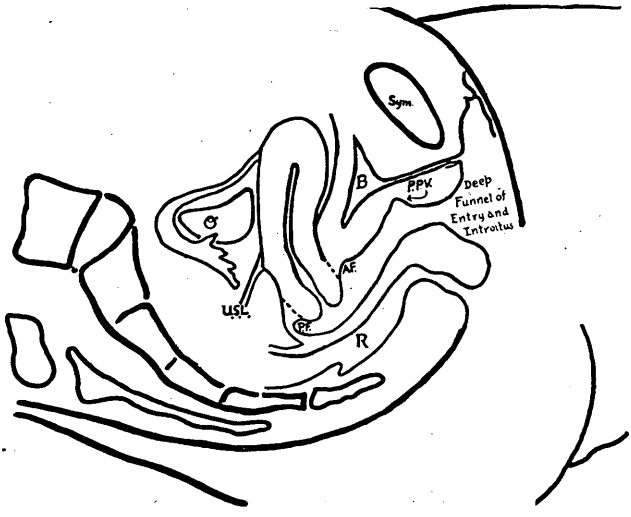

Fig. 14.—Essentially normal but with a deep funnel of entry. Same comments apply as to Fig. 13. In cases of this type the diaphragm lies in a position more oblique to the long axis of the vagina.

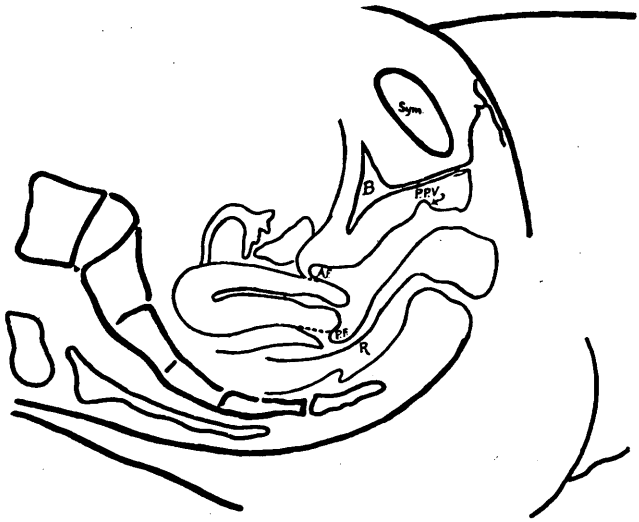

Fig. 15.—Diagrammatic presentation of the effect of a retroversion. The anterior fornix is made deeper. As a result the distance from the postpubic vault to the one fornix or the other becomes nearly equal. Even a properly fitted diaphragm, therefore, may be completely inserted into the vagina, but pass into the anterior rather than the posterior fornix and give no protection. In the normal case the difference in depth from the postpubic vault to the two fornices is such that a properly fitted diaphragm will always be properly placed if it goes into the vagina, since it could not be forced in without discomfort if it was lodged in the anterior fornix.

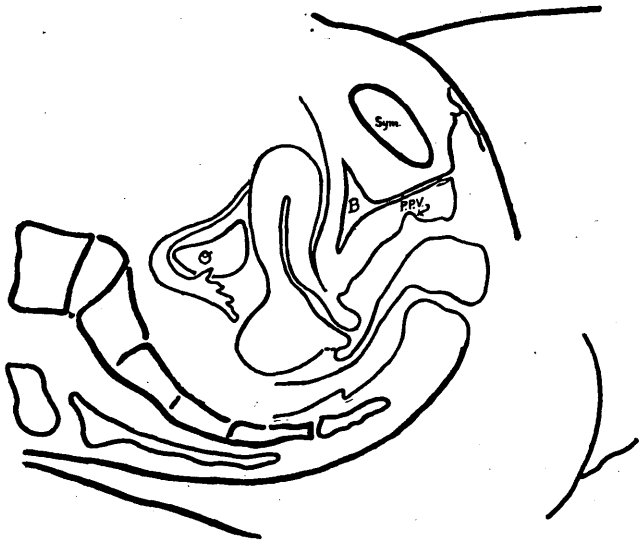

Fig. 16.—A subserous fibroid or endometrioma on the lower posterior aspect of the uterus may move it forward and downward, decreasing the net depth of the vagina.

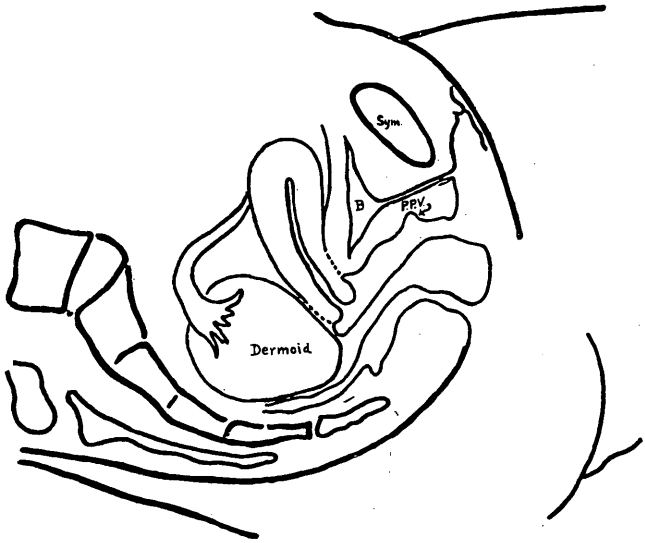

Fig. 17.—A dermoid cyst of the ovary behind the uterus in the midline may greatly decrease the depth of the vagina. In one such case a parous woman of large build took only a size No. 60 diaphragm.

marked rectocele and cystocele, it may be impossible to use the typical diaphragm, fitted as such.

In some such instances it will be possible to use a much smaller sized diaphragm with a deep dome, fitting it in the upper vaginal vault. Or the Dumas pessary may be used. This is an all rubber pessary ordinarily with a rather low dome, having no spring in the rim. A small size deep-domed diaphragm or the low-domed Dumas may be found to go up into place behind the bulging cystocele and give satisfactory results. The marked relaxation will make it easier for the patient to determine its position by digital examination herself, and help to insure satisfactory results.

If the patient considers her family complete and there are no contraindications to such procedure, a pelvic repair and uterine suspension might make it possible to use the diaphragm. The great advantage of contraception contrasted with sterilization rests upon the fact that another pregnancy *would* be possible if, before the natural menopause, a tragedy robbed her of one or more children.

A tumor, as a subserous fibroid or a mass of endometriomal tissue on the posterior aspect of the uterus or a dermoid of the ovary lying in the pouch of Douglas, may markedly foreshorten the vagina.

Accurate Determination of Size Important

One prominent obstetrician and gynecologist complained that he really did not have much faith in the method of the diaphragm and jelly as he had had two failures within the last year. The size of a diaphragm is the diameter expressed in millimeters. Investigation disclosed that he rarely, if ever, used any other than sizes No. 70 and No. 75.

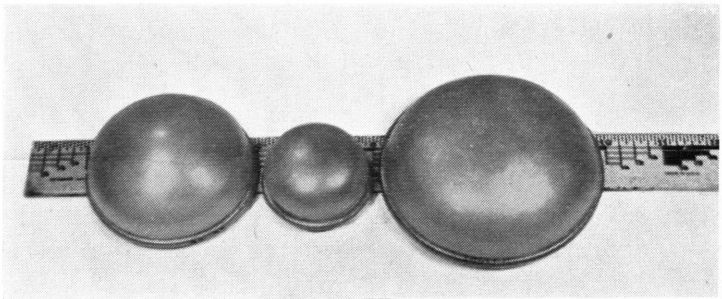

Fig. 18.—The smallest, the largest, and the optimum or average size diaphragms. The smallest is 50 mm. in diameter, approximately two inches, and is commonly used as a cervical cap (vide infra). The largest is 100 mm., approximately four inches and the optimum size is 75 mm. or approximately three inches in diameter.

In an analysis of the distribution by sizes of fifty thousand diaphragms, it was shown that sizes No. 70 and No. 75 accounted for 47.1 per cent of all those used.[1] This represents slightly less than half, so that anyone using these two sizes alone may fit approximately half of his patients correctly but somewhat more than half of his patients cannot be fitted correctly. The next two larger sizes, i.e., No. 80 and No. 85, account for 28.7 per cent, and the next two smaller sizes, No. 65 and No. 60, account for 18.1 per cent. Where anything smaller than a size No. 60 is used, it is almost certainly being used as a cervical cap, or a vault pessary, rather than as an occlusive vaginal diaphragm. The very large sizes, No. 90, No. 95, and No. 100, account for only 4 per cent of all diaphragms used.

For many years it was customary in this country to manufacture the spiral spring diaphragms only in sizes which were multiples of five, No. 70, No. 75, No. 80, No. 85, etc. The Mensinga, or flat spring diaphragm, has always been manufactured in half-sizes, No. 70, No. 72½, No. 75, No. 77½, No. 80, No. 82½, etc. In an analysis of the use of these two types of diaphragms in two regions of the country, some interesting facts bearing upon the use of the half sizes may be noted.

One region regularly used spiral coil spring diaphragms, using flat spring diaphragms only occasionally and in the proportion of about one to ten. As the flat spring diaphragms were used only for special indications, the number of half-sizes exceeded the

[1]Clark, Le Mon: The Sizes of Vaginal Diaphragms Prescribed in American Clinics. J. Contraception, 3: 33-36, February, 1938.

number of regular sizes. The proportionate use is illustrated by the table below.

75	77½	80	82½	85	87½	90
121	169	124	160	96	141	41

Another region used the flat spring diaphragms almost exclusively, rarely using a spiral coil spring diaphragm. In this case the regular sizes used in flat spring diaphragms exceeded the number of intermediate or half-sizes as is shown by the table below.

75	77½	80	82½	85	87½	90
215	99	188	43	80	15	13

Consideration of these two situations would seem to indicate that there are cases where an expert who has had wide experience, as it may be assumed most physicians serving a recognized birth control clinic have had (the majority of these diaphragms went to clinics), finds it necessary in a fair proportion of all cases to use diaphragms where the interval is only two and one-half millimeters, one-tenth of an inch, in order to be certain that they obtain a satisfactory fit.

In order that a physician may be equipped to fit patients accurately, he should have a certain minimum number of diaphragm sizes. These should include spiral spring diaphragms sizes No. 60, No. 62½, No. 65, No. 70, No. 75, No. 80 and No. 85, and flat spring diaphragms sizes No. 67½, No. 72½, No. 77½ and No. 82½. Sizes No. 60 and No. 62½ will be so rarely used that they may be omitted if desired.

With the half-size flat spring diaphragms one is equipped to meet the need for half-sizes where indicated. And with such an assortment of flat spring diaphragms one is prepared to meet those conditions discussed on pages 31 to 36 which may require that type, half-sizes being usable in most cases, even where

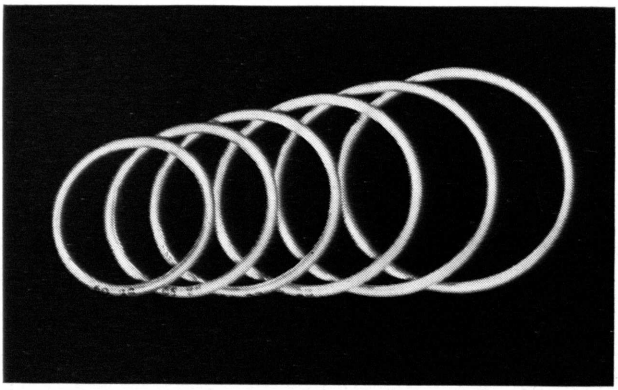

Fig. 19.—A set of fitting rings as commonly used, including sizes No. 60 to No. 85. Additional sizes from No. 50 to No. 100 can be had from most manufacturers if desired.

the next larger or smaller full size might have been used.

One may have fitting rings, rubber covered springs without the rubber dome, and use these for fitting purposes. If such fitting rings are not used, one should always give the patient the diaphragm which fits her, sterilizing others used during the fitting. In this way the physician may rotate his own stock of supplies and keep them from deteriorating unduly with age.

Physiological Considerations

It is commonly stated that the patient should be fitted with the largest size diaphragm that may be comfortably borne in the vagina. This dictum frequently leads to difficulties for the patient. Fitting the diaphragm so tightly that one attempts to smooth out all the folds or rugae of the vagina may cause immediate discomfort. If such tight fitting does not cause immediate discomfort, it may cause trouble later, either through a painful reaction due to physiological considerations to be discussed shortly, or through the development of a low-grade urethritis, due to pressure upon the urethra, where it crosses below the pubic symphysis.

The question of whether or not the diaphragm fits properly cannot be left to the subjective appraisal of the patient. It must be determined by the physician on the basis of definite anatomical and physiological considerations.

One must remember that the diaphragm is, at best, only a baffle plate. Its primary purpose is to prevent direct insemination of the cervix, thereby making it necessary for the spermatozoa to proceed under their own motile power in an attempt to find the cervical os. Sperm move at the rate of about one-quarter inch in

two minutes. If, then, the distance they must travel to get around the diaphragm is only one inch and they moved in a purposeful manner directly towards their objective, it would take at least eight minutes to reach the cervical os. Actually, when having to make their way around a diaphragm, it must take much longer.

It is important that one appreciate the fact that the diaphragm serves only to prevent direct insemination of the cervix, to, as it were, compel the sperm to make a detour. Spermatozoa can certainly get around the diaphragm. One cannot fit a diaphragm so tightly that it will iron out all the folds and rugae of the vagina so smoothly as to prevent their passage.

Delay in the progress of the sperm, giving the spermicidal jelly or cream time to act, is all that is required. Hence unnecessarily tight fitting of the diaphragm should be avoided.

With these mechanical considerations well in mind, one must then consider some of the physiological processes involved. During sexual excitement, the primary sexual area becomes engorged with blood which renders it soft, warm, more elastic and hence more readily distended. When such a condition is present, a relatively large diaphragm may be borne with entire comfort. After the attainment of orgasm, however, with the rapid redistribution of blood to the rest of the body, it is not unusual for the vagina to contract temporarily to such an extent that it is slightly smaller than usual. The same phenomenon is seen in the male; shortly after intercourse, the penis is usually somewhat smaller than in its usual normal state.

If a diaphragm is fitted of such a size that it will only just go into the vagina when in a possibly tumescent condition, it may be too large. As a result the

muscles and supporting structures adjacent to the vagina, finding a foreign body therein, go into a tonic contraction. The patient who has experienced this complains of very great pain coming on two or three hours after intercourse.

In fitting a diaphragm, then, the physician must be sufficiently alert to estimate the degree of tumescence which may result from a vaginal examination. In some cases there is little or none. In others there may be a considerable reaction. If there is such a reaction, care must be exercised that the diaphragm fitted is not too large because of the softness and tumescence of the vaginal walls.

This reaction with tumescence of the primary sexual area has no necessary relationship to the emotional reaction of the patient towards the physician. It results from the mechanical stimulation incident to the process of fitting a diaphragm. The degree of such reaction varies greatly.

At the other end of the scale the physician must be alert to the possibility that the patient is so fearful and consequently under such a degree of tension that the size fitted may be too small. If this is the case physically, then mentally, also, the patient may fail to grasp the explanation given and so be a poor "risk," the liability of failure being greater.

In the normal case, one should fit a diaphragm of such a size that it will permit just the tip end of the index finger to be inserted between the rim of the diaphragm and the symphysis, the fingernail resting against the rim of the diaphragm and the ball of the finger resting upon the inferior posterior aspect of the pubic symphysis. If the diaphragm is fitted in this manner and the patient feels it is too large, she should be asked to use it a few times and then return for a

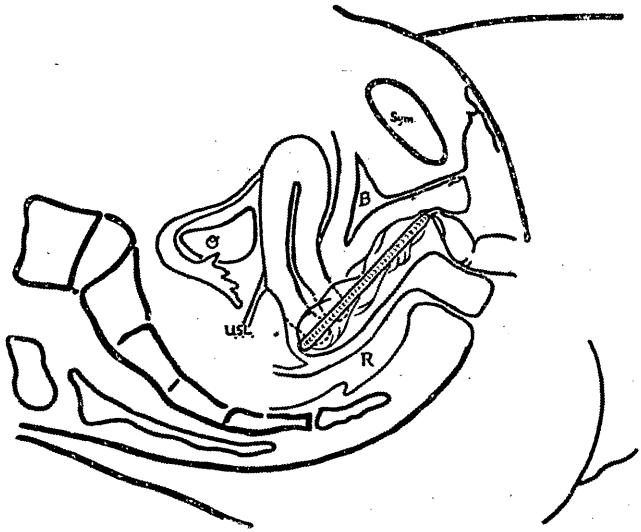

Fig. 20.—Illustrating the proper method of estimating size. With the upper pole of the diaphragm well up in the posterior fornix, there should be space enough for just the tip of the finger when the nail rests against the rim of the diaphragm and the ball of the finger against the firm structures adjacent to the inferior posterior aspect of the symphysis pubis.

check-up. This will frequently give her time to become accustomed to it and solve the problem.

Intercourse During Menstruation

Many women feel that it is impossible to have intercourse during menstruation, although some women have their strongest sexual desire at that time. Menstruation is no contraindication to intercourse, the difficulty arising primarily in the mind of the woman, since she is apt to feel that it would be an unpleasant experience for her husband.

A woman should understand that the amount of blood lost at any given menstrual period is very greatly exaggerated. The average amount is one ounce. If more than two ounces is lost it is commonly considered pathological.

Since the average amount lost is only one ounce, it means that even on the day of heaviest flow, as for instance the second day, probably no more than one-third of an ounce will be lost in the twenty-four hours —an amount equal to less than three level teaspoonsful —and this amount would be distributed through twenty-four hours so that the amount lost per hour would be very small.

For intercourse during menstruation, the diaphragm is a great help; properly fitted and inserted it will keep this small amount of blood in the upper portion of the vagina. This effect is entirely harmless and when the diaphragm is removed eight or ten hours later, the accumulated blood will be removed with the diaphragm.

There is, then, no contraindication to the use of the diaphragm during menstruation and no contraindication to intercourse during menstruation. Where it is greatly desired by the wife, her needs should certainly be considered.

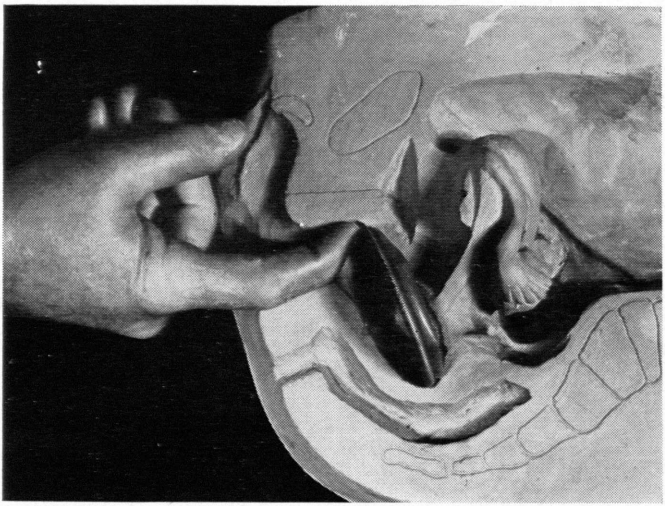

Fig. 21.—Illustrates same situation as Fig. 20, using a model of the pelvis.

Indications for a Thin Dome

In some instances, probably very few in number, normal sensory reaction on the part of the wife depends upon actual stimulation of the cervix. The movements of intercourse seem to activate the uterus and the surrounding structures and this consciousness of movement is essential to complete gratification on her part. A diaphragm of ordinary commercial grade may have rubber of such a thickness that it deflects the penis slightly downward and backward, thereby interfering with this activation of the uterus and its appendages. In six such cases which the writer has seen, the use of a very thin domed diaphragm entirely removed the difficulty. Some of the companies producing diaphragms would undoubtedly be willing to make such a specially thin domed diaphragm at a moderate price where such a modification would satisfy the needs of any particular couple. The difficulty is a very slight one and does not arise in one per cent of all cases, hence is no contraindication to use of the diaphragm. The incidence of difficulty as a result of the inhibition of normal sensory experience is far, far lower than that arising in the use of other contraceptive measures; i.e., the condom, suppositories or jellies when used alone. The presence of a foreign lubricant in the vagina caused by the last two is definitely annoying to a considerable proportion of both men and women.

Adequate Instructions Essential

Since it is the physician's problem to aid the patient in achieving the most satisfactory method of contraception, he must take pains to give the patient the most careful instructions. Specific instructions must be given as to how long the diaphragm should be left

in place. If directions to leave the diaphragm in over night are given, there is the danger that the patient may have had intercourse at night upon retiring and again in the morning before arising. If then—since the diaphragm has been left in over night—it is removed shortly after arising, the danger of possible pregnancy may be increased. It is best, therefore, to give the simple instructions, "Leave the diaphragm in for eight hours after the last time you have intercourse."

It is well to point out that there need be no urgent haste to remove the diaphragm. If the patient is a bride and is working, she may wait until the next evening after her return home. No possible harm will ensue. If she has children, her mornings are usually well filled seeing that her husband is started off to work and the older children off to school. The average woman, under such circumstances, makes a hasty toilet upon first arising, takes care of her family and then later in the morning, when time permits, gives her appearance more careful attention. It is at this time that she may remove the diaphragm, and there need be no feeling of necessity that it be done earlier.

If the diaphragm has been left in place for eight hours after the last time that the couple have had intercourse, a douche is not essential as a part of the technique of contraception. Spermatozoa will all be dead either because of the spermicidal effect of the jelly used or due to phagocytosis. Many women, probably the majority, would prefer to take a douche as a matter of personal inclination, but many do not feel it necessary. For some it will be indispensable since even a bland jelly if almost constantly in contact with a sensitive vaginal epithelium may set up a chemical

irritation. A douche, properly taken, when the diaphragm is removed, will commonly remedy such a condition if it does develop.

Taking a Douche

The patient should be instructed that when a douche is taken, only water, comfortably warm, should be used. No strong antiseptic is necessary or desirable. Instructions should be given that the douche bag (since a fountain syringe is to be preferred rather than the bulb type syringe) should not be higher than the patient's head. After insertion of the douche tip into the vagina, the entrance to the vagina should be used as a fulcrum point and the douche tip moved around inside of the vagina so as to iron out the folds and rugae. This gives the most thorough cleansing. Half the water should be used before the diaphragm is removed. After the removal of the diaphragm the balance should be used to clean the upper vaginal area.

After removal of the diaphragm, it should be washed with soap and warm water, powdered with cornstarch or unmixed talcum powder, and put away in its box until it is to be used again. Commercial, prepared talcum powders frequently contain boric acid, and any acid, even one as weak as boric, will shorten the life of rubber products.

Patients should know that some men all of their lives, and all men probably at some time or times in their lives, experience spermatorrhea. This is the leakage of viable spermatozoa down the urethra during sexual excitement.

Because of this possibility, a couple who really wish to avoid pregnancy should have it emphasized that sexual play to the extent of the introduction of the penis into the vagina should never be indulged in un-

less the diaphragm is in place. Despite the fact that the husband may exercise perfect self-control, thousands of spermatozoa might conceivably be deposited in the vagina with resultant pregnancy.

Contraindications for the Use of the Vaginal Diaphragm

There are certain situations or circumstances which contraindicate the fitting of a vaginal diaphragm.

1. Where it violates social, racial or national conventions.
   a. With some people it is considered imperative that the bride enter marriage with an intact hymen. Under such circumstances premarital fitting is definitely contraindicated. This is discussed more fully later.
2. Where any condition interferes with the reliability of the method or unduly complicates its use.
   a. Marked cystocele, making it impossible to be certain that the diaphragm is in place and that it will stay in place.
   b. Marked pelvic relaxation with the same result.
   c. Marked obesity which may so fill the pelvis with fat that it leaves little room for the diaphragm. Or where bodily proportions, such as short arms and obesity, make proper placement of the diaphragm problematical.
   d. Chronic constipation of a severe type with great periodic rectal distension.
3. Where local disease or infection might be aggravated by its use.
   a. Where pelvic pain or tenderness is encountered upon examination, it is best to make a thorough, adequate gynecological check-up.

Be sure there is no condition which might be aggravated by the use of the diaphragm or even by intercourse, itself.

b. Urethritis or marked urethral tenderness since these might be aggravated by the use of a diaphragm, especially if it is fitted slightly too large.

c. Cystitis, since the patient might blame an exacerbation of symptoms upon the use of the method. Such exacerbation might result from more frequent intercourse and incident trauma since the couple no longer feared pregnancy. It has happened.

d. Cervicitis, with marked discharge, especially if purulent. Treat and reduce the local symptoms before using the diaphragm.

CHAPTER III

PROCEDURE IN FITTING

Before actual fitting of the diaphragm is undertaken, the patient should be made familiar with the method by a thorough explanation and discussion. Frequently it is necessary to remove any disinclination or fear on her part which makes it difficult for her to examine herself or to touch her own vulva or vagina. In showing the diaphragm, it is always wise to explain that it is compressed for insertion so that it enters the vagina as a long loop. To be confronted with a diaphragm seventy-five millimeters in diameter frequently convinces the patient that it would be impossible to insert such a thing into her vagina, since she visualizes it as being inserted in the round shape.

The use of a sponge rubber model, similar to that used in some of the foregoing illustrations, for demonstration purposes makes it more readily possible for the patient to understand the whole procedure and undoubtedly is advisable. Many of the recognized birth control clinics give their patients a half-hour talk before they see the physician. In private practice it is necessary for the physician, himself, or a capable office nurse to spend at least some time in a preliminary discussion with the patient.

Patient Should Be Properly Draped

When the patient is put upon the examining table, she should always be properly draped so that only the vulva is exposed. One would think it unnecessary to make such a suggestion. Experience, however, in

watching attending men in the clinics of some of our medical schools and consequent training which students sometimes receive would indicate that emphasis upon this point is desirable.

First examine the vulva and the condition of the clitoris. Frequently a patient will have to be advised to wash the clitoris more thoroughly and to retract the labia minora forming the hood of the clitoris. Thorough and adequate cleaning of the clitoris will prevent irritation from an undue amount of smegmá and also obviate any unpleasant odor.

A tightly adherent hood to the clitoris may have to be freed with a blunt probe. To do this it is necessary to inject novocain well down into the two lateral pillars of the clitoris, a technique outlined by Dr. R. L. Dickinson several years ago and well illustrated in his book, *Human Sex Anatomy.** Freeing the clitoris will make possible a more completely satisfactory sensory experience.

After examination of the vulva, examine the vaginal introitus. In a virgin with a hymen still intact, the method of procedure depends upon the type of hymen. If the hymen is a soft, thin fold of mucous membrane, gentle insertion of a well-lubricated gloved finger will cause relatively little pain, and slow, gentle dilatation will make it possible to dilate the hymen and the hymenal ring with no serious discomfort.

The Inelastic Hymen

Occasionally one sees a hymen which is extremely thick, tough and inelastic. To permit a girl with such a hymen to enter marriage and to insist that she suffer the pain incident to her first experience with sexual intercourse in the presence of such a condition in order

*Dickinson, R. L.: Human Sex Anatomy, The Williams & Wilkins Company, Baltimore, 1933, Fig. 77a.

to satisfy a blind superstition is ridiculous. The injection of a little novocain in the hymenal ring at the base of the desired site will make it possible to incise it with two or three radial incisions, thereby sparing the girl an experience which may be well-nigh tragic.

Such artificial, premarital destruction of the hymen should not occasion undue concern. Just what needs to be done should be explained to the patient and the reasons given. Some national customs lay such great stress upon the necessity of an intact hymen at the time of first intercourse that it might be essential to get permission of the bridegroom if operative interference were definitely indicated.

Where it is indicated, surgical interference will remove from the husband's shoulders the onus of inflicting pain upon his bride during their first night together. Unhappy experiences at this time are a not inconsiderable factor in the development of problems of marital adjustment later in the marriage.

Where rupture of the hymen is contraindicated, the use of an antiseptic vaginal jelly by the bride (which might provide temporarily desirable lubrication) and a condom by the groom should give entirely satisfactory results. She should be told to return two or three weeks after the consummation of the marriage for the necessary fitting and instructions in the use of the diaphragm.

The Bimanual Examination

Since a bimanual examination is essential before attempting the fitting of a diaphragm, physical dilatation of the hymen must take place, and a virgin should have this explained to her.

The bladder should be empty or nearly so. During bimanual examination one may determine the tone of the pelvic floor, the amount of relaxation, and the

depth of the vagina. This information makes it possible to estimate the quality of the patient, anatomically, as a birth control risk.

One may also gain some impression as to whether or not the patient may be pregnant at the time of the examination. If there is any such possibility, it is wise to make a note to that effect.

The way in which the diaphragm fits when it is actually tried and the manner in which the patient adapts herself to the insertion of the diaphragm make it possible to estimate her quality as a birth control risk, emotionally.

Later in the process of instructing the patient, when she undertakes to place it herself, her mechanical aptitude in inserting and removing the diaphragm give one a clew as to her ability to use the diaphragm effectively.

If, at the time of the vaginal examination, one finds large masses of fecal matter in the rectum, it may be necessary to postpone the actual fitting, advising the patient to take an enema before her next visit, to be sure that the bowel is empty. It is also important for the physician to tell the patient that her chronic constipation must be overcome, since hard fecal masses in the rectum may definitely impair the efficiency of the diaphragm in use.

Two Philosophies in Fitting

There are two fundamental methods or philosophies in fitting the diaphragm. One school of thought fits the diaphragm from the posterior fornix to the anterior fornix, using it more in the manner of an oversized cervical cap. Such a method of fitting requires the smaller sizes, No. 55, No. 60 and No. 65. Sizes No. 70 and No. 75 would, in this method of fitting, be large sizes.

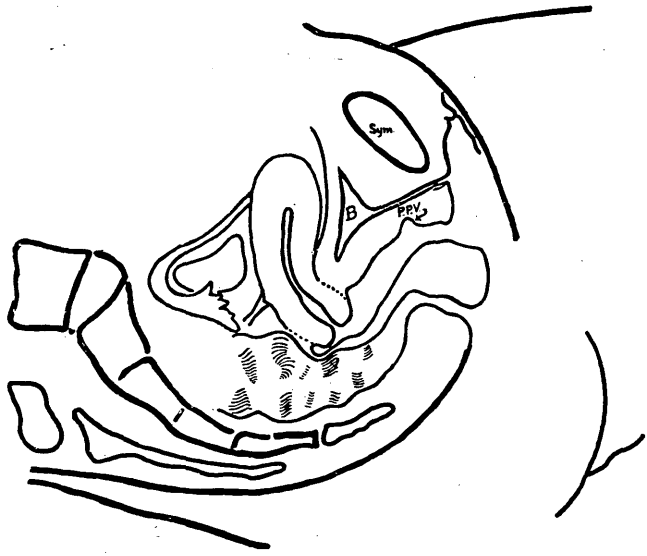

Fig. 22.—Showing the rectum filled. This makes the posterior fornix much shallower. It may make it impossible to fit the patient accurately at the time of examination. And if a recurrent, habitual state, it may impair the efficiency of the diaphragm in use.

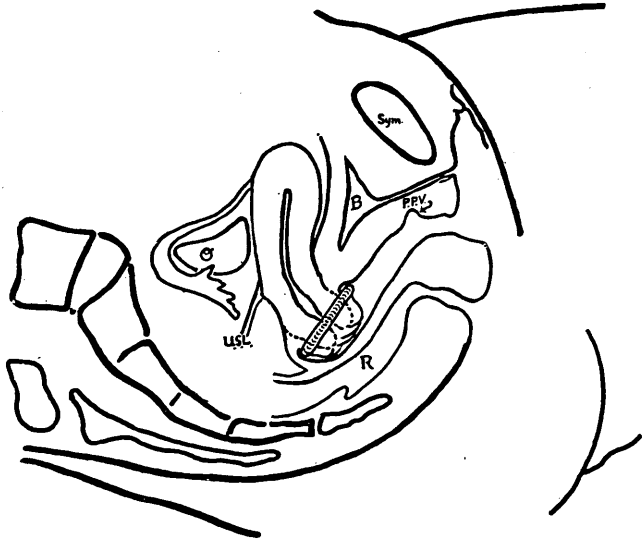

Fig. 23.—Diagram of small size diaphragm used as a cervical cap. The deep dome and the small rim make this probably a better type to use than the old-style French cap.

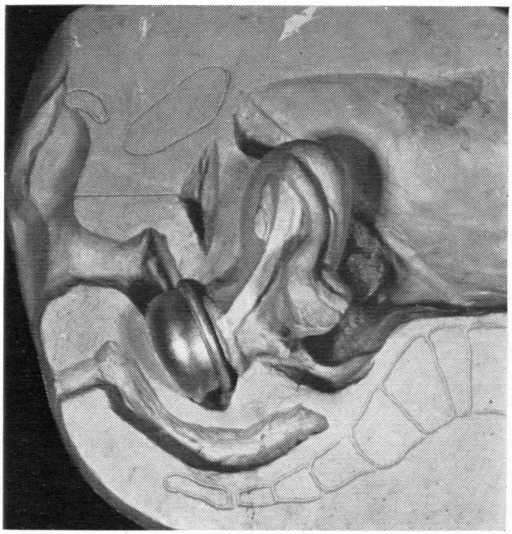

Fig. 24.—A photograph of a size No. 50 used as a cervical cap on a model. It fits into both fornices, rather than from the posterior fornix to the postpubic vault. Difficulty in placing it, even for a physician, is of course great—for the patient almost insurmountable. The possibility that it may be knocked off and lodged in the posterior cul-de-sac, completely exposing the cervix, is a real danger.

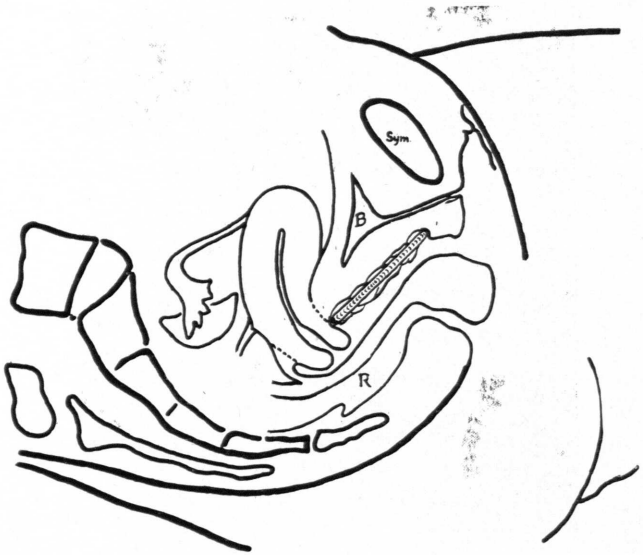

Fig. 25.—A small-size diaphragm extending from the anterior fornix to the postpubic vault, leaving the cervix exposed. This is a grave possibility when too small a size is used.

Fig. 26.—A photograph illustrating the same situation as that in Fig. 25. These two illustrations emphasize the need for adequate fitting. While this shows the diaphragm dome up, the same situation may arise with it dome down.

The danger in using this method of fitting is that the patient may place the entering portion of the rim of the diaphragm in the anterior fornix and it may come to rest there in such a position that it extends from the anterior fornix to the postpubic vault, leaving the cervix entirely uncovered.

For this reason the other method of fitting larger size diaphragms is probably better. According to this method, the diaphragm extends from the posterior fornix to the postpubic vault. Larger sizes are used, size No. 75 being used in at least one-quarter of all cases. In the normal anatomy with the uterus antiflexed and antiverted, this distance from the posterior fornix to the postpubic vault is so much greater than the distance from the anterior fornix to the postpubic vault that if the patient is properly fitted, the mere fact that the diaphragm goes into the vagina means that it must be in the proper position. (See Figs. 5 and 6, pages 28 and 29.)

After the patient has been fitted and the proper size determined, it is sometimes desirable to convince the patient that the diaphragm may be worn not only without discomfort but without any consciousness of its presence. The physician may insert the diaphragm and then pretend that he withdraws it upon some specious pretext such as that it is necessary to let things come back to normal after the vaginal examination. With this as the excuse, he asks the patient to get up and walk around. The physician may then apologetically ask if everything feels all right and may express the hope that she experiences no discomfort as a result of the vaginal examination.

The patient ordinarily assures the physician that she feels perfectly all right and that there is no discomfort. The physician can then show her that the

hand he is holding behind his back is empty and that the diaphragm is still in place. Where the patient is rather antagonistic, as for instance when she has been brought in by her husband against her will, it is sometimes wise to use such methods to convince her that the diaphragm will not only cause no discomfort but will not even register in consciousness once it is inserted.

To introduce the patient to the handling of the diaphragm, it is sometimes a good plan to ask her first to remove it after the physician has inserted it. Sometimes the patient has difficulty in removing the diaphragm, and the suggestion that she bear down will frequently help. After removal, the diaphragm can be rinsed in water, dried, and handed back to her.

If it is to be inserted by hand, a definite technique should be taught. Do not leave it to her to do it any way she may see fit.

Methods of Insertion

One good method is to tell the patient to pick up the diaphragm in her left hand (if she is right-handed), holding the diaphragm dome up. She then takes a tube of jelly in her right hand and squeezes out on the dome of the diaphragm approximately a teaspoonful of jelly. This weighs down the dome so that it will fall through the rim of the diaphragm.

She then grasps the rim of the diaphragm with the fingers of the right hand, picking it up from the left hand. As she does so, she grasps the dome, which has fallen through the rim, with the fingers of the left hand. She pulls the dome down gently with the fingers of the left hand as she compresses the rim between the fingers of the right hand. The jelly is now held in a pocket below the rim of the diaphragm. She now

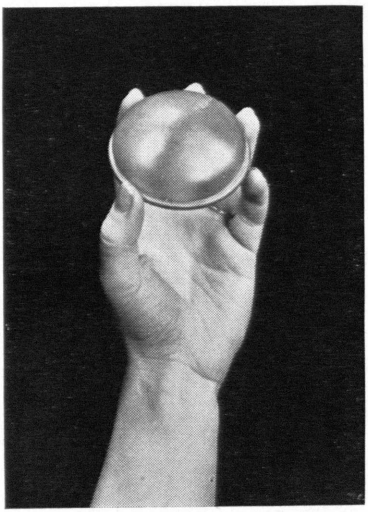

Fig. 27.—The patient picks up the diaphragm in her left hand, holding it dome up. For arguments in favor of dome up insertion see pages 93-99.

Fig. 28.—She then squeezes out upon the top of the dome of the diaphragm some jelly (or cream), approximately a teaspoonful being ample. This weighs down the dome, causing it to fall through the rim.

Fig. 29.—She then picks up the diaphragm from the left hand with the right hand as shown, using the left hand to hold the dome down as the rim is compressed by the fingers of the right hand. This holds the jelly in a pocket so that the diaphragm may be inserted without getting jelly all over the vulva and adjacent area.

Fig. 30.—The patient is properly draped. The index and middle fingers of the left hand separate the labia and guide the entering pole of the ellipse formed by the rim of the diaphragm into the vagina. In the illustration the patient is holding the diaphragm too nearly horizontal. There is greater danger that it will not get past, beneath the cervix. See Figs. 33 and 34.

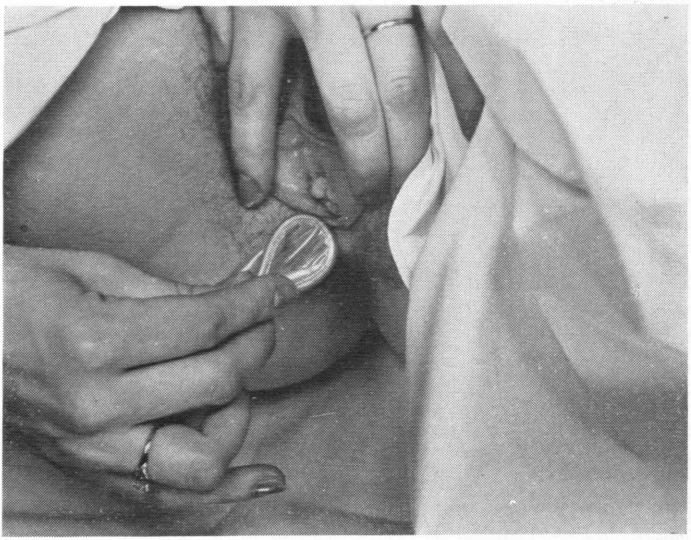

Fig. 31.—This patient found it easier to reach the vagina with the right hand by passing the right arm beneath the right thigh rather than over it. The danger in such a case of inserting the diaphragm *upwards* into the anterior fornix is clearly shown in the illustration.

Fig. 32.—Here the diaphragm is partially in the vagina. The jelly, held in the inverted dome, is not spread around, causing discomfort by being "messy." The comment about the *direction* of the entering pole is still pertinent.

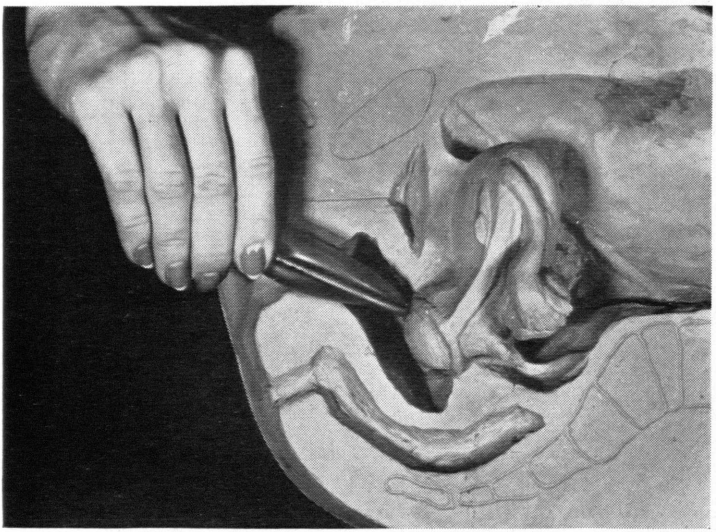

Fig. 33.—The diaphragm, inserted horizontally, strikes the anterior superior vaginal wall. From this it may be deflected into the anterior rather than the posterior fornix.

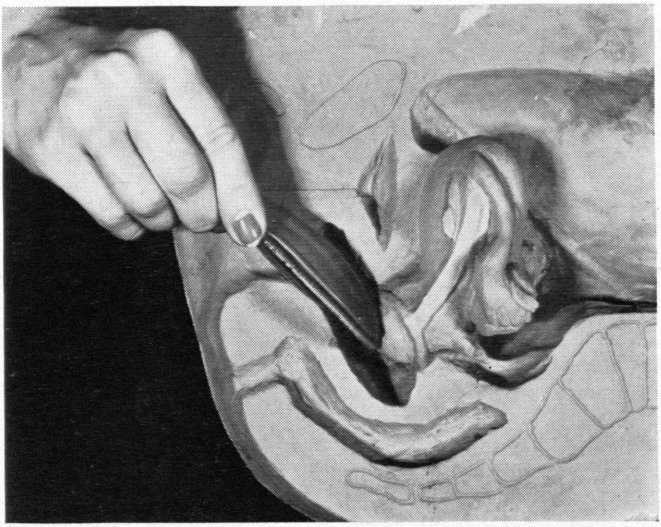

Fig. 34.—If inserted in a plane parallel to the long axis of the vagina, rather than horizontal, the entering pole of the diaphragm will bear along the posterior wall of the vagina and more easily slip beneath the cervix.

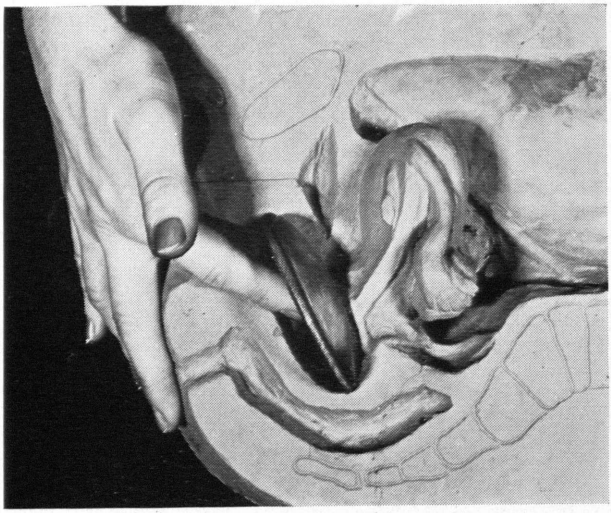

Fig. 35.—In some cases the patient may be taught to feel the cervix through the rubber. In other cases it is very difficult to teach the patient to do so. If too much emphasis is placed upon the necessity of so doing and the patient finds it too difficult to feel her cervix, it may raise grave doubts in her mind and interfere with the attainment of the best results in other areas; i.e., psychical and emotional.

reaches down with the left hand and separates the vulva, inserting the diaphragm *between* the fingers of her left hand, and gently pushes it farther and farther in with her right hand.

Where practicable it is desirable to teach the patient to feel her cervix through the rubber of the diaphragm, but this will not always be possible. The tall girl with a long, deep vagina with a firm pelvic floor may have the cervix suspended so high in the vaginal vault as to make it almost impossible for her to reach it.

Use of the Diaphragm Inserter

Where an inserter is to be used, the patient should be instructed to place the diaphragm dome up upon the table. She should then pick up the diaphragm between the thumb and fingers of the right hand, picking up the inserter in her left hand in such a manner that the left index finger is free. As she compresses the rim of the diaphragm between the thumb and the fingers of her right hand, she inserts the loop thus formed in the notch at the end of the inserter and then lets the diaphragm fall along the shaft of the inserter so that she can just tip the end of the diaphragm over the little metal loop projecting above the shaft of the inserter, pulling it over the loop with the index finger of the left hand.

Then, grasping the inserter in her left hand and the tube of jelly in her right, she can squeeze enough jelly into the diaphragm to fill each of the grooves formed on either side of the shaft of the inserter. By moving the tube along as it is gently squeezed, the jelly will flow out much as toothpaste does when it is placed on a toothbrush. Where some lubrication is desired, the tip of the finger may be dipped in the jelly in one of the grooves of the diaphragm and a small amount

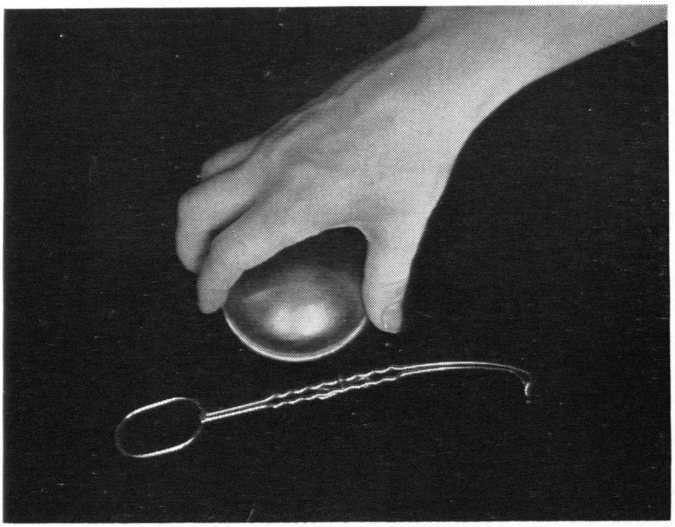

Fig. 36.—Start of procedure for insertion with a diaphragm inserter. The patient places the diaphragm upon the table, dome up. She then picks it up between the fingers and thumb of the right hand.

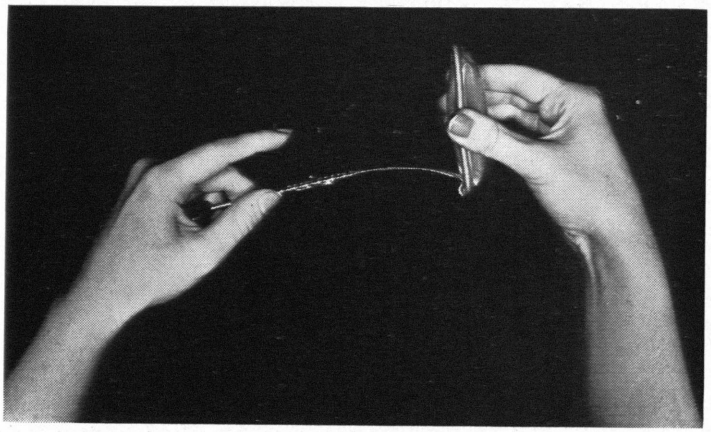

Fig. 37.—She then picks up the inserter with the left hand, holding it so that her index finger is free to help with the next step. The rim of the diaphragm is compressed between the thumb and fingers of the right hand to form an ellipse, and one pole of this ellipse is placed in the groove at the end of the inserter.

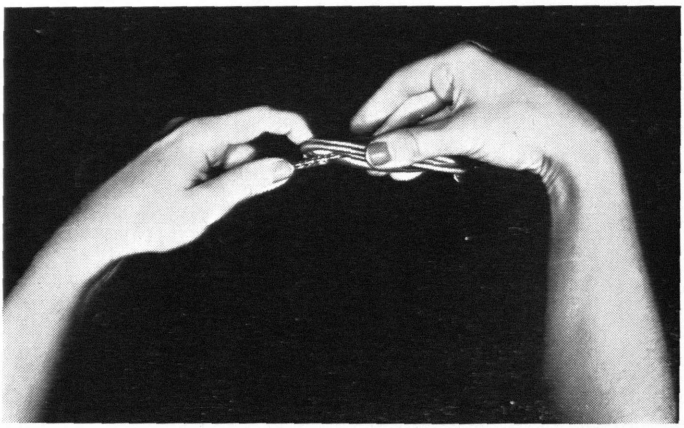

Fig. 38.—The rim of the diaphragm must be elongated by compression of the spring laterally to form an ellipse. Pulling it will do little good. One end of the ellipse thus formed is placed with one pole resting in the grooved end of the inserter. It is then laid along the shaft of the inserter and the other pole of the ellipse is pushed over the adjustable nubbin with the help of the left index finger. Some patients find it more natural to reverse hands in this procedure of placing the diaphragm on the inserter.

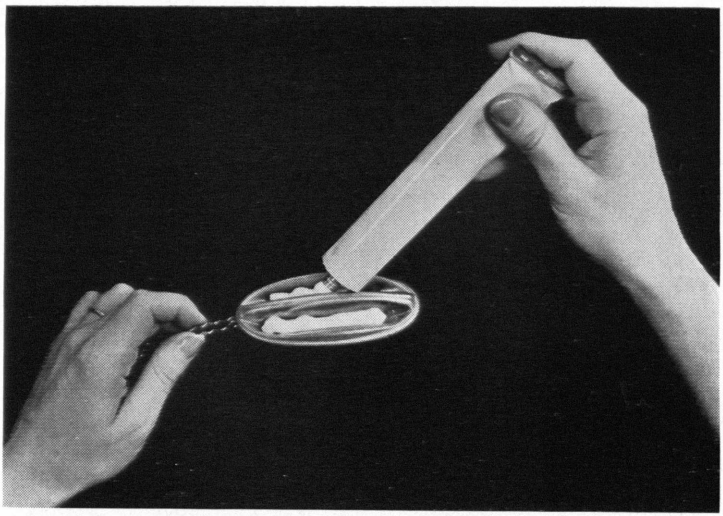

Fig. 39.—Holding the inserter with the diaphragm on it in the left hand, cream (or jelly if preferred) is placed in the two grooves formed on either side of the shaft of the inserter exactly as one places toothpaste on a toothbrush. The larger the vagina, the larger the diaphragm, the longer the grooves, hence, Q.E.D., the greater the area to be covered, the greater the amount of cream (or jelly) used. This method assures a more adequate and effective use of the spermicidal agent.

In a nulliparous woman where the vaginal introitus is rather tight or where lubrication before insertion is desirable for any reason, the patient should be told to dip the tip of her finger in the cream or jelly and spread a very little around the entering pole of the diaphragm. So little need be smeared on the finger that rubbing it against the palm of the hand will completely dissipate it. Remember! The aim is to make birth control simple, easy, esthetically acceptable. Thorough, careful instruction by the physician makes it easy for the patient.

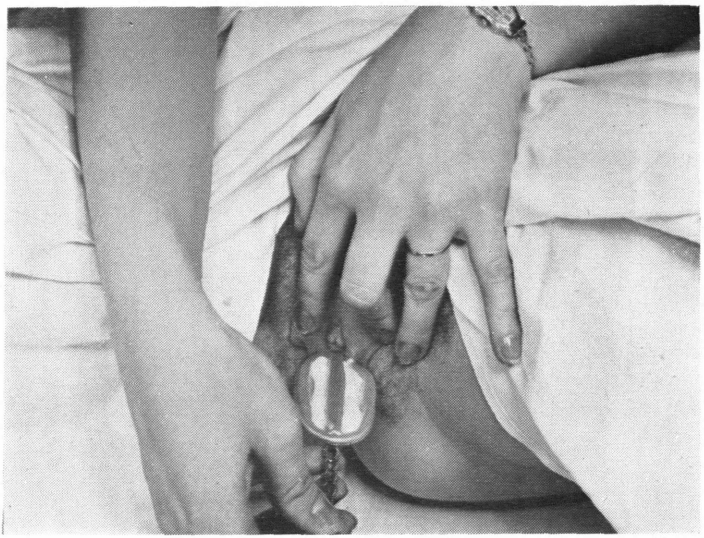

Fig. 40.—The inserter is then held in the right hand with the fingers beneath the shaft and the thumb on top. With the index and middle fingers of the left hand separating the labia, the inserter, carrying the diaphragm, is started into the vagina. Due to the horizontal direction of the vaginal introitus, it is probably easier to introduce the diaphragm and inserter if the handle is dropped down as shown.

Fig. 41.—The diaphragm and inserter are gently forced into the vagina. Note that the rubber of the diaphragm closes over the cream in the grooves formed on either side of the shaft of the inserter. In this way it is a simple procedure to insert the diaphragm and cream (or jelly) with no unpleasantness, no messiness whatsoever.

spread around the entering edge and sides of the diaphragm. So little need be caught upon the finger that rubbing it against the palm of the hand will cause the excess completely to disappear in a few seconds. Now, holding the inserter in her right hand with the fingers beneath the shaft and the thumb above it, the diaphragm, of course, being on top of the inserter, diaphragm and inserter are guided into the vagina by the fingers of the left hand.

The inserter should not be held in a horizontal position, but should be held as nearly vertical as possible. This makes certain that the diaphragm will bear along the posterior wall of the vagina and that the diaphragm will be properly placed in the posterior fornix.

When the diaphragm and inserter have been pushed as far into the vagina as possible, the rim of the diaphragm is lifted off the shaft of the inserter by the fingers, or the inserter may simply be twisted a quarter of a turn, which will release the diaphragm and make it possible to withdraw the inserter from the vagina.

The two methods for applying the jelly as outlined above are undoubtedly preferable to any others. The idea that anything further will be accomplished by placing jelly around the rim of the diaphragm is unsound. Jelly placed according to the directions above comes into contact with the cervix and all during intercourse it is thoroughly rubbed into the cervix and spread around the upper vaginal vault.

To apply a quantity of jelly around the rim of the diaphragm in excess of the very small amount which may be desirable as a lubricant makes the whole procedure a most unpleasant one. It is little wonder that women instructed in such a technique will tend to abandon the method because it is so unpleasant. In

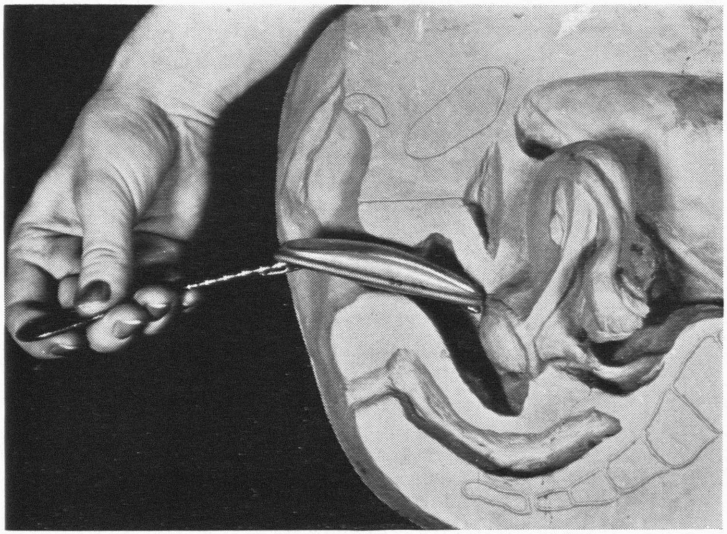

Fig. 42.—This shows the danger of holding the shaft of the inserter in a horizontal position after the entering pole has passed the vaginal introitus. It may force its way on into the anterior fornix.

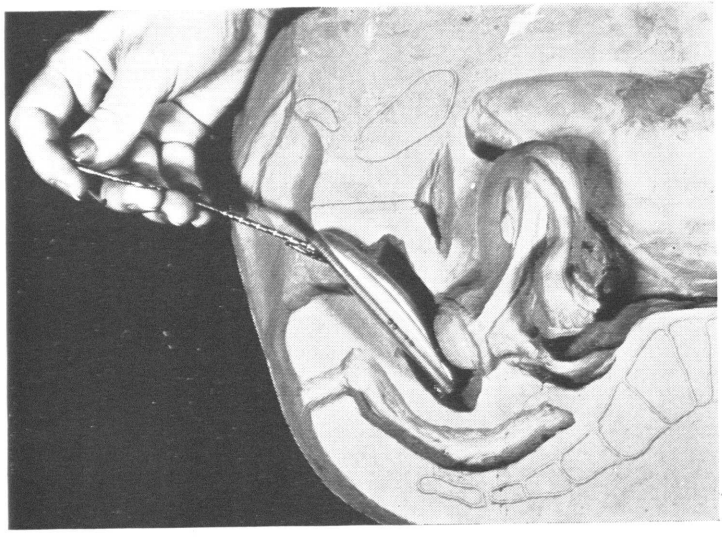

Fig. 43.—Where, however, the shaft of the inserter is raised upwards from the horizontal, the inserter carrying the diaphragm bears upon the posterior wall of the vagina and will go past the cervix into the posterior fornix.

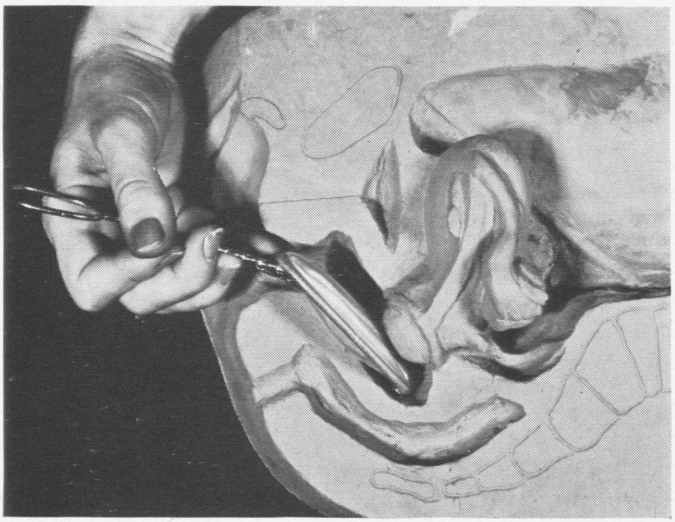

Fig. 44.—One method of removing the diaphragm from the inserter is to use the little finger of the right hand to lift it off the nubbin on the shaft of the inserter.

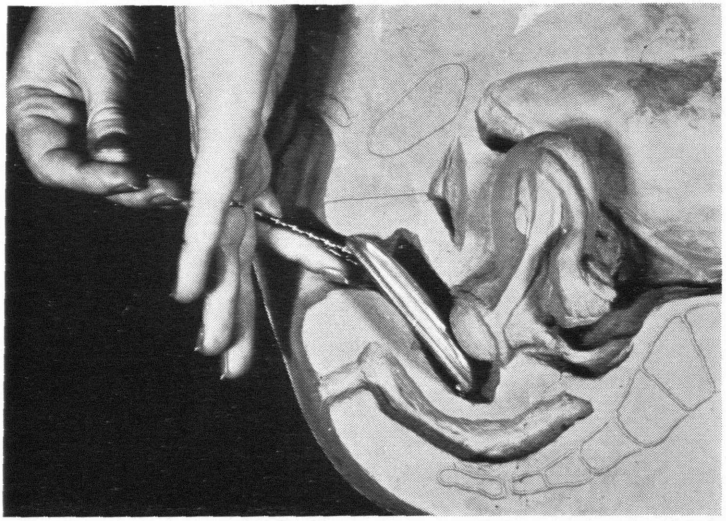

Fig. 45.—Another method of removing the diaphragm from the inserter using the index finger of the other hand. Frequently simply rotating the shaft of the inserter to one side will free the diaphragm.

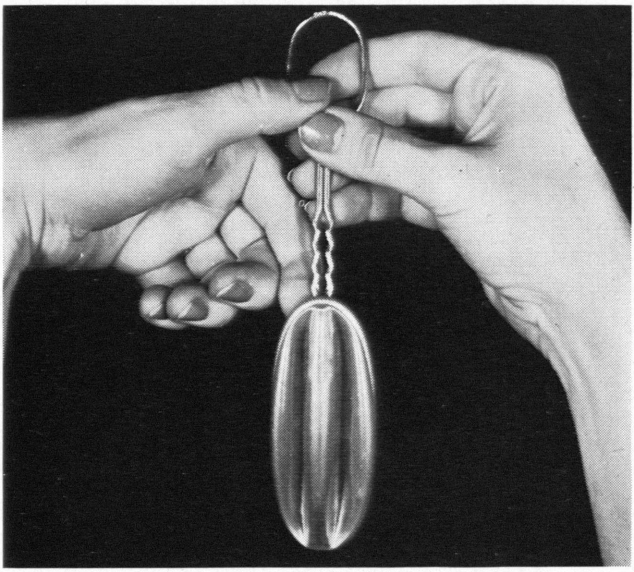

Fig. 46.—Still another view showing how the index finger is passed along the shaft of the inserter to lift off the diaphragm when it is in place in the vagina.

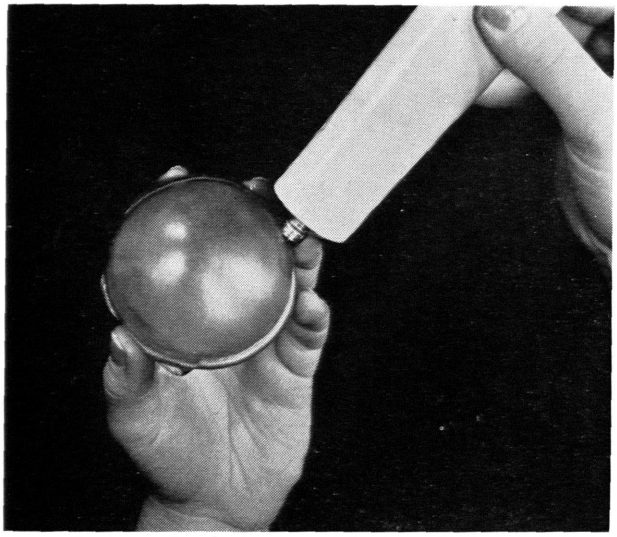

Fig. 47.—Just to see the kind of "messy" procedure encountered when jelly is placed around the rim of the diaphragm is enough to discourage anyone from using a method of birth control which requires such a process. Note the drop about to fall into the palm of the hand and the finger tips covered with jelly. When one realizes what must happen to the vulva in such a procedure, one can readily appreciate that a woman would feel as though she must take a bath after insertion of the diaphragm. There could be little desire for the unique type of intimacy incident to sexual intercourse under such a handicap.

addition to being unpleasant, putting jelly around the rim, presumably for the purpose of sealing it off, defeats its own end, since during insertion through the vaginal introitus the jelly is scraped from around the rim.

Why Dome Up

Both methods as described above result in placing the diaphragm dome up, that is, with the convex side in contact with the cervix. There are several reasons for doing it this way. First, it is easier to remove. The finger can catch the rim of the diaphragm more easily.

When it is inserted dome down, the rubber of the dome tends to roll on the rim, making it much more difficult to catch the rim with the tip of the finger.

Second, when dome up, with the jelly above it, or on top of the dome, the tendency of the dome to press upwards against the cervix makes certain that the cervix will always be in intimate contact with the spermicidal jelly.

Third, the dome tends to spring upwards into the upper vaginal vault away from the vaginal canal. Hence the penis does not come in contact with it, and any possibility that the husband might be conscious of it is greatly lessened. With the dome down position, the dome tends to press downwards and may make itself felt by the husband.

Fourth, in a few cases women using the dome down method have complained that they are awakened two or three hours after coitus with a vague, annoying consciousness of their vagina. The explanation seems to be that the redundant rubber of the diaphragm, pressing downward, forms two or three folds which hold the anterior, posterior walls of the vagina just

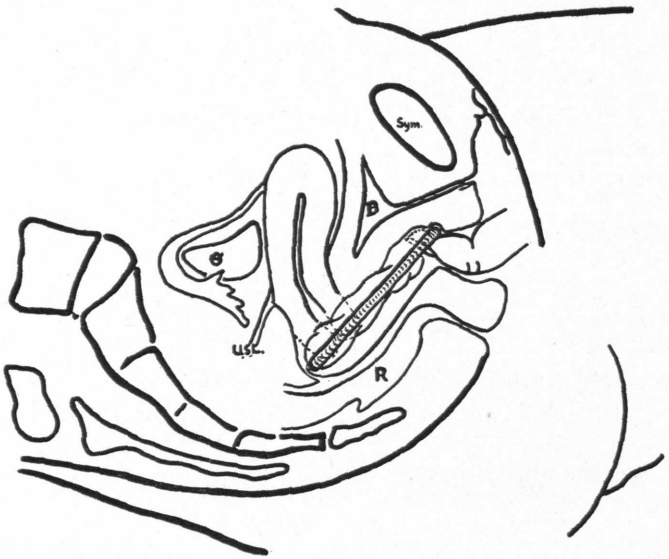

Fig. 48.—Illustrating how the diaphragm should be caught by the ball of the finger, not by the fingernail. If the latter method is tried and the finger slips it might scratch the mucosa of the introitus.

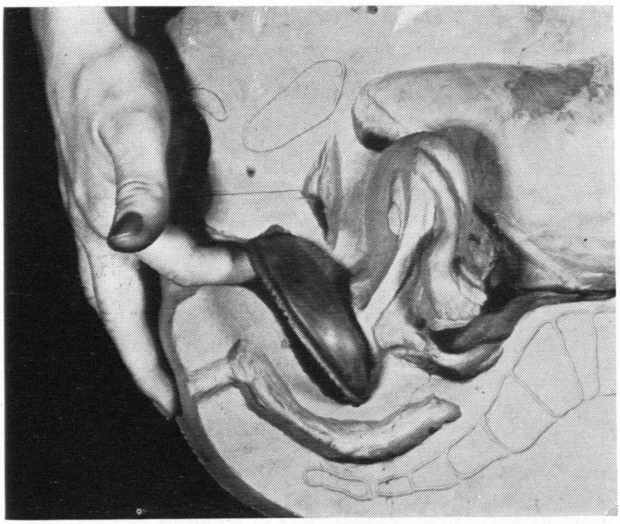

Fig. 49.—Illustrating the fact that with the diaphragm dome up it is much easier to remove. The ball of the finger can actually catch the rim with relative ease. If any real difficulty is experienced, bearing down by the patient will facilitate removal.

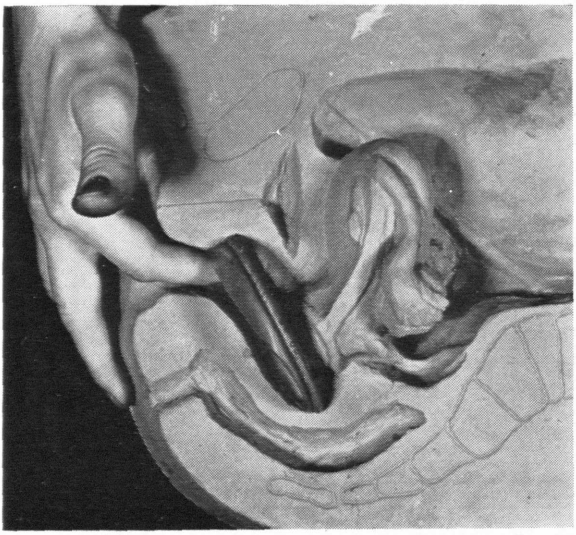

Fig. 50.—When inserted dome down the rubber of the dome rolls upon the rim, making it difficult for the ball of the finger to catch the rim for removal. When moistened with vaginal secretions, the difficulty is definitely increased.

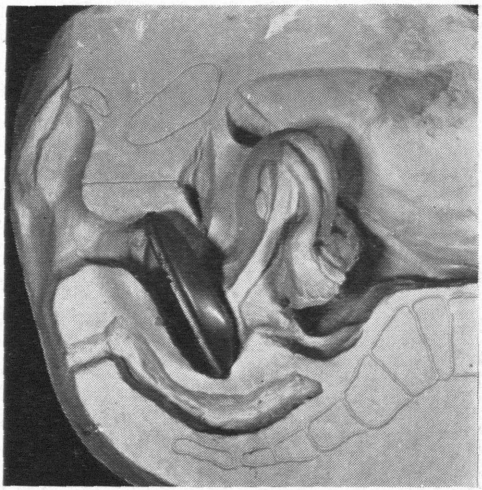

Fig. 51.—The dome up position, besides making removal of the diaphragm easier, has several other advantages. It holds the jelly or cream up in close contact with the cervix. The dome, tending to spring upwards along the superior, anterior wall of the vagina, is less apt to be felt by or annoy the husband. And, as mentioned in the text, it eliminates the possibility of after-annoyance.

Fig. 52.—*Illustrating the difficulties and disadvantages of the dome down position. Besides being more difficult to remove, the dome springs away from the cervix, giving less mechanical protection. It tends to bulge downwards, where there is a much greater chance that it may be felt by the husband. And finally, by bearing strongly against the posterior wall, it causes after-consciousness in the woman.*

far enough apart to register in consciousness. When inserted dome up, the redundant rubber is absorbed, as it were, by conforming to the cervix, where the vagina is accustomed to being distended by the cervix itself, and only a single layer lies between the vaginal walls in the lower portion of the canal, and therefore, it is not felt.

Putting the diaphragm in dome down harks back to the idea of capping the cervix. If by "capping" the cervix, we mean the tight fitting of a ring around an inner object, it must be understood that there is no such purpose in using the diaphragm. Some favor the dome down position because it seems to give a deeper pocket in which to place the jelly for insertion. This can be entirely offset by proper technique as already described, and the objections to the dome down position far outweigh any possible advantage.

Checking Patient's Knowledge of Procedure

Many of the recognized clinics ask the patient to return for a check-up as to the fitting of the diaphragm and her own procedure in using it at the end of ten days' or two weeks' time. In private practice this does not seem to be essential if the patient is intelligent enough to grasp the procedure and if the physician spends sufficient time with her to make certain that she understands it. She should be encouraged to return, however, at the slightest question on her part.

The size of the required diaphragm is altered very little, if any, by the establishment of sexual intercourse. It is only in unusual cases that a girl fitted before marriage will require a change in size after the establishment of regular, relatively frequent intercourse. After a baby is born, however, it is most important that the proper size be determined, although in many cases the same size will be used.

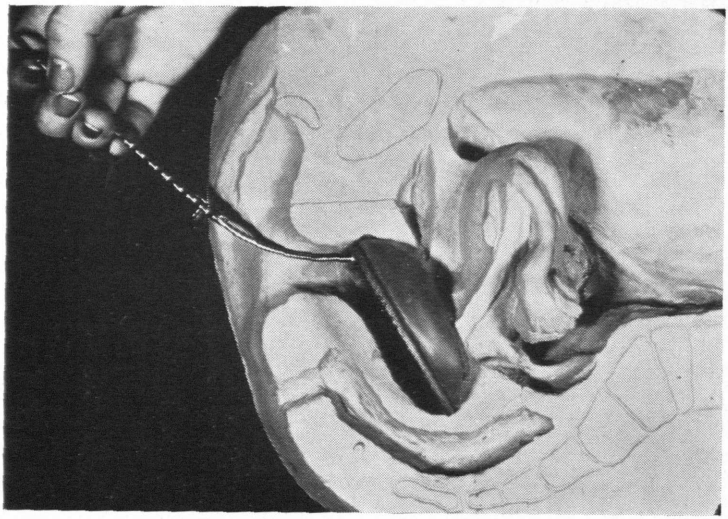

Fig. 53.—If any difficulty is experienced in removing the diaphragm by hand, the use of the inserter will solve the difficulty. Some women, reluctant to touch the sexual parts because of faulty early training, prefer this method.

Further Instructions

Careful instructions should be given the patient as to the removal and care of the diaphragm. Ordinarily it is quite simple for the patient to hook her finger beneath the end of the diaphragm and to withdraw it from the vagina by gently pulling downwards and outwards. (See Fig. 48.) While it may seem quite complicated to her at first, it rapidly becomes simple. The inserter may be used if desired, the hook at the end of the inserter being used to catch the rim of the diaphragm. As has already been mentioned, bearing down will help to bring the rim down within easy reach, especially if in the squatting position.

Other positions for insertion of the diaphragm should be mentioned to the patient during the process of fitting. It is not always necessary or even desirable that she lie upon her back to insert it. In the physician's office, this is by far the best method, since it is the only one in which the patient can be kept properly draped, but for her own instruction and use, it should be mentioned that the diaphragm may be inserted while in a squatting position or while one foot is placed upon a stool or chair. The former is not very desirable since it may force the pelvic contents downward and decrease the space in the pelvis. The latter is a very useful method.

Other Methods Available for the Bride

If a bride prefers to wait until after the consummation of marriage before being fitted with a diaphragm, the best method to advise is the use of a vaginal jelly for herself and a condom for her husband. Up to a very few years ago the skin condoms were much to be preferred to the ordinary rubber condom. The

great improvement in recent years in the manufacture of rubber condoms leaves very little choice.

If a condom is to be used, additional lubrication may be necessary. For this purpose a bland, lubricating jelly may be used, or some of the contraceptive jelly itself may prove entirely satisfactory. The patient may then return for a diaphragm fitting two to four weeks after her marriage.

CHAPTER IV

ADVICE TO PATIENTS

The most important advice to be given to the patient is that she return to the physician at the slightest difficulty or if any question arises in her mind. This needs to be emphasized because so many people assume that sexually they are different from the general run of the human race and that if trouble results it must be their fault.

It is not necessary to search far for an explanation of this attitude. As young people we grew up with the teaching that nice boys and girls did not think about sex. We did; therefore, we weren't a nice boy or girl, but in order to keep anyone from finding this out, we did not talk about it or let anyone know that we thought about it.

With this as a background, we develop a conspiracy of silence, an attitude of mind which convinces us that each, as an individual, is different from anyone else. So one feels that the method may work for everyone else, but in her own case the patient is convinced it will not work because "she is different."

It is well to suggest that the patient keep the diaphragm and the tube of jelly or cream and the inserter in a readily available spot. A one-pound candy box will hold all three very conveniently. It may be put in a dresser drawer or in a bedside table so that it will always be near at hand.

The patient should be told that the diaphragm may be inserted either just before coitus or several hours before. If the diaphragm is inserted in the evening

and intercourse is not attempted until the next morning, it is perfectly all right. Intercourse both night and morning without removing the diaphragm is permissible.

If, however, the patient has been up and around any considerable time, it is always wise to suggest that she check the position of the diaphragm with her finger tip before coitus is attempted.

Again, in the final instructions to the patient, emphasize the danger of spermatorrhea and caution the patient that where pregnancy really must be avoided sexual play must not progress to the extent of the actual insertion of the penis into the vagina *unless the diaphragm is in place.*

Some women complain of the leakage of semen and vaginal secretions from the vagina after intercourse. This may be especially true of those whose husbands have previously used a condom for some time. In anticipation of this possibility, it is well to suggest that the patient have available a soft piece of cloth such as an old handkerchief which may be drawn between the thighs to absorb this moisture. Cleansing tissues or paper handkerchiefs serve very well. An ordinary sanitary pad is much too bulky and will not stay in place as well as a soft piece of muslin.

Where a few cents' additional expense is not a problem, the insertion of a Tampax or Wix very easily absorbs this additional secretion and prevents any such annoyance. The insertion of such an absorbent material into the vagina in all probability greatly increases the efficiency of the method, since, by absorbing fluids rapidly from the vagina, it would tend to reduce the motility of the spermatozoa.

It should be emphasized to the patient that practice in inserting it makes the use of the diaphragm become a very simple procedure. In at least one clinic the patients are advised to insert the diaphragm every night for a month by way of rapidly training themselves in its use.

The diaphragm, as has already been said, should be left in place for eight hours *after the last time the patient has intercourse.* It is inadvisable to leave it in place for more than twenty-four or thirty-six hours.

After removal the diaphragm should be washed with soap and water, powdered with talc and placed in the box from whence it will be readily available for use again.

Finally, to fulfill his duty and responsibility to the patient, the physician should point out that birth control is a most powerful force to be used most wisely and well. Brides should be cautioned against postponing pregnancy for too long a period of time. Women perhaps grow up. Men never do, or at least not before the age of fifty. A man may be defined as a boy with a few gray hairs—or no hair.

In consequence of this mental and emotional make-up of the male, he is a very easily spoiled animal. If he has all of one woman's attention for too long a period of time, he becomes too accustomed to it. Sharing that attention with another person later, even though it is his own child, sometimes creates problems.

It is advisable, therefore, that a young couple plan on having a child some time during the third year of marriage.

To rear an only child is more than a mistake; it is a tragedy. The significance and the importance of this should be pointed out to the patient, and she

should be urged to plan her family so as to have not less than two and preferably three or four children, spacing them at intervals of two and one-half to three years, which has been found to be the optimum interval for the best health of both mother and child.

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