abandoned it on account of spread of the disease from retained secretion.

Chemotherapy

Sanocrysin and allied gold salts have lost some popularity lately (a) because they are ineffective in closing cavities, (b) on account of severe and unpredictable reactions in some cases, such as rashes, albuminuria, diarrhœa and severe sweating lasting several weeks. It is, however, of value in clearing up multiple small areas of fairly recent disease and as an adjuvant to collapse therapy in cavity cases. Although streptomycin is less toxic, its limited supply makes the use of gold salts still advisable in suitable cases.

Streptomycin has given favourable results in about 30 per cent. of cases of early tuberculous meningitis and miliary tuberculosis. It is most useful in clearing up tracheo-bronchial ulceration, where as many as 70 per cent. of good results have been reported. It has also been used as a packing fluid in cases of open cavity drainage, where it can get direct access to the tubercle bacilli.

Para-amino salicylic acid has recently been introduced for its direct action on the tubercle bacillus *in vivo*. It can be injected into a tuberculous empyema space, where it acts directly on the tubercle bacilli and has been effective in conjunction with aspiration in sterilising such spaces and allowing the re-expansion of the underlying lung. It is also used orally in some cases, but the results of both these routes have not yet been sufficiently investigated to allow further comment at the present time.

ORIGINAL PAPERS

FAMILY SPACING

By REYNOLD BOYD, M.B., F.R.C.S.(Edin.)

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The proper purpose of contraception is not the prevention of children, but the spacing and limiting of families to suit the health and prosperity of the mothers. Contraception is so universally practised, even where it is prohibited, that it cannot be ignored by those who disagree with it; nor can it be condemned because it is sometimes abused. While prohibition cannot stop the employing of contraceptives, good advice can regulate the practice and guide the public to a sober use of safe methods.

The procreation of children does not appear to be the principal end of marriage as understood in Christendom. A marriage—that "voluntary union for life of one man and one woman to the exclusion of all others"—is, however, usually contracted in the hopes of having a family. It is a tragedy that such hopes are not infrequently blighted by the prolonged use of contraceptives. All couples should be advised to "have your first baby first and then space out the rest of your family afterwards." No married couple is too young or too poor to act on this advice. It is the privilege of youth to cope with and overcome difficulties. The first abuse, then, of contraceptives is their use before fertility is proven and until age, accident or illness adds a first or further infertility factor to the marriage. The second abuse, the employing of dangerous methods, has been largely ended by the repeated fulminations of gynæcologists, who rightly decry wish-bone pessaries, gold-pins, and Graafenburg rings.

Contraception may be practised by abstinence, by avoiding the fertile week, by employing mechanical or chemical means, or by the permanent method of sterilisation.

Sexual Abstinence in the unmarried is not harmful but it is an unnatural prohibition to young married couples. Repeated sexual stimulation without the normal completion of coitus causes genital congestion, from partial or slow deturgescence, and attendant physical and mental irritability.

The Safe Period method is very widely used. It cannot, however, be assumed that a woman ovulates at the same time each month and it is

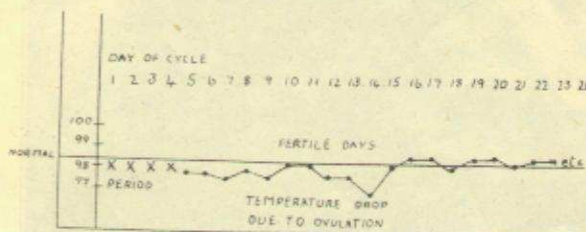

Fig. 1
Rectal Temperature Chart.

possible that some may ovulate more than once in a cycle. But in general most women are infertile during the week before and for a few days following each period, ovulation occurring at a variable time between the 8th and 18th days of the cycle. Some few women can, of course, tell the actual day by the onset of ovulation pain,

suitable for thoracoplasty, and would be subject to more risk than thoracoplasty would entail.

Open Drainage of Cavities

The ordinary type of continuous catheter drainage of cavities (Monaldi) gave disappointing results, but better results have been obtained by doing a small upper stage rib removal, and when the scar is healed inserting the Monaldi drain. This allows the second stage of a thoracoplasty to be performed, if needed, after the cavity has been reduced in size without having to open up the area of the Monaldi catheter track and so infecting the thoracoplasty wound area.

Lately very satisfactory results have been obtained by open incision and drainage of cavities in which for one reason or another thoracoplasty is undesirable, e.g., in cases where a thoracoplasty has already been done on the other side or where the other lung is severely damaged. The procedure adopted is as follows :—

The cavity is located as to depth by tomography and lateral X-rays. Portions of two ribs about two and a half inches to three inches long are then removed over the cavity area. together with the periosteum, and the pleura is exposed but not entered. A gauze swab with iodine is then packed against the outer layer of pleura

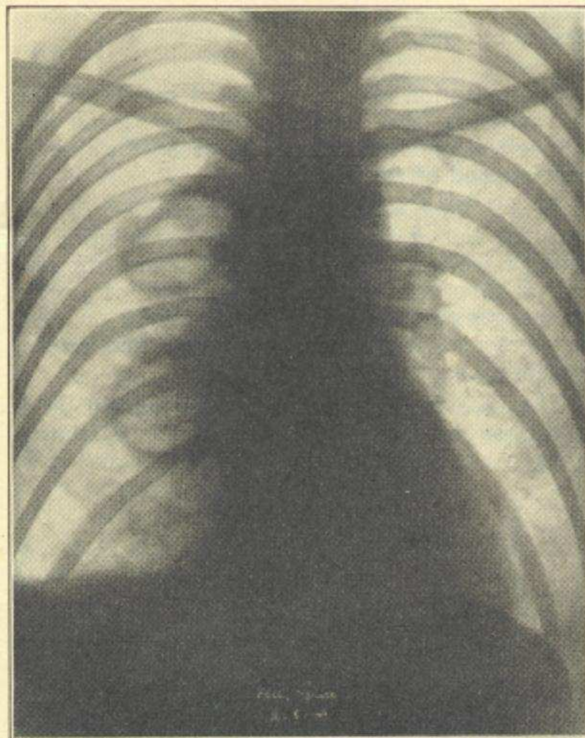

FIG. 2
Artificial pneumothorax induced and adhesions cut 11/8/45. Sputum unchanged. A.P. abandoned. Film taken 16/8/45.

and the wound closed. A week later it may be assumed that the iodine has caused fusion of the two layers of pleura, and the wound is reopened and the cavity is incised and the exposed wall of the cavity is cut away. It is then cleaned and packed with gauze. Packings are renewed daily, and the wound gradually heals up from below, with obliteration of the cavity. In favourable cases this results in disappearance of the tubercle bacilli from the sputum and from the discharge

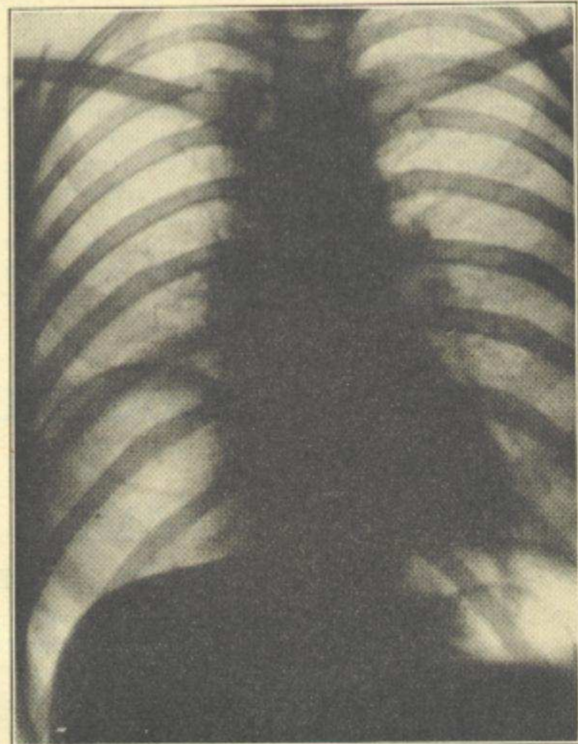

FIG. 3
Right phrenic crush performed and pneumoperitoneum induced 10/10/45. Film taken 5/11/45. Sputum became negative by 20/1/46. On discharge 16/6/46 was free from symptoms. No definable cavity.

from the cavity in a few weeks (unless the sputum is coming from the other lung). For this to be successful it is necessary for the cavity to be within half an inch of the pleura, either in front or behind, and the approach made accordingly.

Postural Retention Treatment of Cavities

This procedure aims at allowing a cavity to fill up with secretion, which ultimately blocks the draining bronchus by becoming semi-organised and thus prevents distension of the cavity during inspiration and cough. The patient lies on the affected side continuously with the foot of the bed raised on blocks, beginning with 4-in. blocks and proceeding to 12-in. blocks as the patient gets used to it. This has been found to reduce the size of large tension cavities very considerably and to allow a much more limited thoracoplasty to be done later on. In some cases the effect seems to be prolonged, but it is too soon yet to assess its final value, even though the cavity disappears radiologically without operative measures. Even this simple measure is not without risks, and some workers have

or "spotting," and in others the date can be accurately assessed from basal temperature charts. The recordings may be made from waking oral or, perhaps better, rectal temperature readings. Rectal or vaginal recordings only were originally advocated, but investigations have shown that the monthly biphasic fluctuations are satisfactorily portrayed by oral readings, which are 0.5 deg. F. (0.27 deg. C.) below the rectal. Parallel variations occur with all the methods, so the present tendency is to employ the oral, which is so much easier and more pleasant. But the temperature must be taken *immediately on waking,* unless the subject is a mouth-breather, as the oral temperature alters more rapidly than the rectal or vaginal. The best results are obtained from those who wake at the same time each day. In mouth-breathers the lips should be kept closed for five minutes after waking before the thermometer is inserted.

Mechanical Methods

The Sheath or Condom, the most widely used of mechanical devices, still deserves more than passing mention. It is disliked as it tends to diminish the pleasure of coitus and is distrusted because it may break. Good quality ones can only break if donned by the uncircumcised without retracting the prepuce. This simple rule is little known. For a young man the sheath is safe and satisfactory but it is not always comfortable for the wife; and perhaps as many women dislike sheaths as men.

Cervical Caps are made in three sizes—small, medium, and large—with plain or cavity rims and are held in place by suction *if they are placed accurately on the cervix.* This is always possible after childbirth, but is frequently impossible

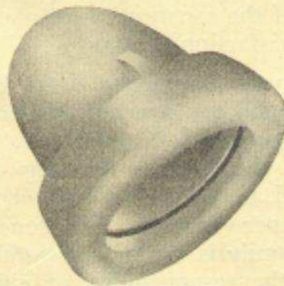

Fig. 2
Cervical Cap.

before. The cap in many cases never reaches the nulliparous cervix, high in the vagina, and in the multiparous, with a lowish cervix, it becomes all too noticeable to the male partner. Cervical caps can be made of plastic material to fit the individual case and this may solve the occasional difficulty. The technique of taking an impression and of making such a cap is similar to making a dental plate. It is not difficult, but it is time-consuming and tedious and therefore suited only to rare application.

The Dutch Cap or Diaphragm is the best of all these mechanical devices. The older watch-spring type is frequently uncomfortable, but the coil-spring variety with flat, latex top is excellent. Made in 2½ mm. sizes from 50 to 100 mm., only the middle sizes are in frequent use. The tendency is to order too small a diaphragm. The 65 mm. is sometimes needed, the 70 mm. usually, in nullipara; 75 mm. to 85 mm. for women who have had children, occasionally a 90 or 95 mm.

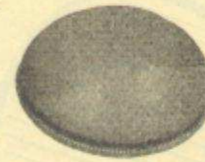

Fig. 3
Dutch Cap.

The diaphragm is inserted so that the dome is uppermost, thus bringing it into contact with the cervix. The largest size that fits snugly and comfortably and diagonally from behind the pubis to the posterior vaginal vault should be employed. If the cervix juts backwards too far the handle of a spoon should be inserted as a shoe-horn down the under side of which the diaphragm is slid in, down, and back. This is much simpler than using a mechanical introducer. Constipation tends to prevent the cap going easily or correctly into position. The diaphragm is lubricated liberally with a contraceptive jelly and during the fertile period a small jelly suppository may be inserted as well.

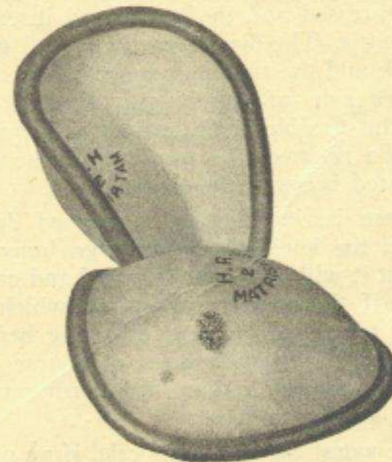

Fig. 4
Matrisalus Cap.

Difficult cases. In one out of every twenty women the standard circular-rimmed diaphragm cannot be used. These are cases of cystocele or bulging of the vaginal wall where the suprapubic notch is normally felt. The front rim of the diaphragm is pushed down below the pubis to where it becomes noticeable during intercourse and from where it can easily fall out. Moreover, the penis can quite easily enter above the protecting diaphragm instead of below. Many

specially shaped diaphragms have been devised to cope with this problem, the best known being the Matrisalus. More recently a "horse-shoe" diaphragm has been manufactured in six sizes: 70, 75, 80, 85, 90 and 95 mm. The circular type can be used for the fitting but a 5 mm. larger size of horse-shoe diaphragm should be ordered.

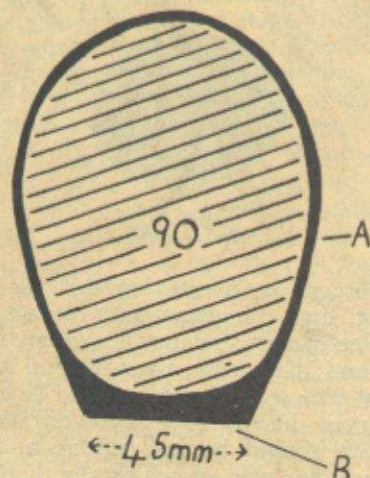

FIG. 5
Horse-shoe Diaphragm.
A—Latex covered flat watch spring.
B—Surgical suture, thickly covered with latex, connects ends of spring.
End width of 90 or 95 mm. types is 45 mm.
End width of 70 to 85 mm. types is 35 mm.

After lubricating, the limbs of the horse-shoe are compressed and the round end inserted into the introitus. The diaphragm is pushed in, down, and back and the two ends tucked in and up one on either side of the bulging vaginal wall to which the flexible, free margin closely applies itself. To remove, the free ends must again be compressed between the fingers.

If there is, in addition, a marked degree of prolapse, the horse-shoe diaphragm may still be used, but it will be thrust forward and cause discomfort if the wearer stands—in which case it must be taken out at once, douching before and after removal. In such cases, of course, surgical repair is indicated rather than further modifications of existing devices.

In the worst cases of cystocele, if an operation is refused, a much smaller size of horse-shoe may be employed, the flat free end being pushed in high to fit above the bulging part of the vaginal wall. This manœuvre has been found to be successful in nearly every case of difficulty. Indeed, it can be stated with conviction that the vaginal diaphragm pessary, in circular or horse-shoe form, used in conjunction with a spermicidal jelly and douching, has proved itself to be the best method of contraception, being both simple and highly efficient.

Chemical methods are best used in conjunction with an occlusive diaphragm or cap. No suppository can be relied on by itself. Hexylresorcinol or phenyl-mercuric nitrite are the spermicidal agents found in most suppositories.

Douching must be immediate to be successful. Spermatozoa travel one inch in eight minutes and nothing can recall those deposited on the external os. Nevertheless, the method is popular and satisfactory, especially when used in conjunction with temperature-verified safe-periods. The best and easiest solution is a tablespoonful of vinegar to the pint of warm water. Strong antiseptic douches should be avoided.

Contraception and the Law of Nullity

According to a Court of Appeal decision of 1945 in the case of Cowen *v.* Cowen the insistence by one partner on the constant use of contraceptives against the wish of the other partner was contrary to the fundamental purpose of marriage and became proper grounds for a declaration of nullity. The House of Lords has recently, in the case of Baxter *v.* Baxter, declared this decision to be wrong in law. The nature of the marriage contract was examined and it was stated that the procreation of children was not an essential part of this contract—that on the contrary the sterility of a husband or barrenness of a wife was irrelevant. Lord Stair's Institutions, 1832, were quoted: "So then it is not the consent to marriage, as it relateth to the procreation of children, that is requisite; for it may consist, though the woman be far beyond that date; but it is the consent, whereby ariseth the conjugal society, which may have the conjuction of bodies as well as of minds; as the general end of the constitution of marriage is the solace and satisfaction of man . . ."

The sanctity of marriage and the Prayer Book insistence on children are not challenged by this recent decision, which is good law. Nor is the way shut to the partner desiring divorce, for Lord Jowitt, L.C., ended his judgment by saying that the proper occasion for considering the denial of a family is when the sexual life of the spouses and the responsibility of either or both for a childless home form the background to some other claim for relief.

We cannot do better than end where we began—that the proper purpose of contraception is not the prevention but the spacing of children.

KING'S COLLEGE HOSPITAL MEDICAL SCHOOL

King's College Hospital Medical School announce the establishment by the University of London of two Chairs in the Department of Pathology. These are: a Chair of Morbid Anatomy, to which Dr. H. A. Magnus, M.D., has been appointed; and a Chair of Chemical Pathology, to which Dr. C. H. Gray, M.B., B.S., M.Sc., L.R.C.P., M.R.C.S., A.R.C.S., has been appointed.