Cephalad Shift of the Cervix Uteri: Sign of the Fertile Time in Women

Edward F. Keefe
(Dr. Keefe, a pioneer researcher in cervical mucus and NFP,
was also an expert in problems of infertility.)

Introduction

Biochemists have searched futilely for a "cheap, simple and accurate home test that women could use to predict the day of ovulation each month" (Rock 1963, p. 188). Meanwhile, women have discovered by themselves some striking signs of their fertile days. As ovulation approached they found, while gathering a sample of mucus pressed from the cervical os [mouth] each day, that the cervix softened and the os gaped (Keefe 1962).

This paper reports one more sign of the fertile time which women have found for themselves: the higher position—a cephalad shift—of the cervix. The literature does not refer to this phenomenon as far as I can see.

Decker described (Decker 1951) shortening of the proper ligament of the ovary at or near the time of ovulation.

Materials and Methods

Group 1. The subjects were 25 of my private patients (22 parous and 3 nulliparous) with normal and regular ovarian function. They had had from one to five years' experience in self-observation of the cervix and cervical mucus (hereafter abbreviated as SOC) and in evaluating these signs and their temperature charts. As the signs would indicate, they abstained from coition to avoid pregnancy.

Each subject measured her oral waking temperature with a thermometer (Keefe 1949) graduated and accurate to 0.10° F (0.05° C) (Ovulindex thermometer, Linacre Laboratories, New York, NY 10017) on as many days as necessary to show the rise of temperature around the time of ovulation.

Without suggesting what she would be likely to find, I instructed each subject: About the same time each morning pass your index and middle finger as usual to the cervix. Against the straightened index finger measure how far the nearest part of the cervix is from the lower border of the symphysis pubis. Observe how much the perineum must be indented. On days when you cannot, even with effort, reach the cervix, with the other hand press through the abdominal wall on the body of the uterus to bring the cervix down within reach. Collect and evaluate the usual mucus sample if available. Each day record where the cervix is as Low, High, or Very High on the regular chart, along with softening and dilatation and the temperatures.

She observed these signs through at least three cycles and reported her findings by telephone or during a visit to the office.

Group 2. In this group were patients whom I counseled in the office, by correspondence, or over the telephone about periodic continence according to the SOC signs as previously described (Keefe 1962), except that I eliminated the vaginal speculum and added details of the cephalad shift. Based on the findings of Group 1, I taught these patients to expect as gradual upward movement of the cervix as the fertile time approached and a rather abrupt descent after it. I explained that the shift was important for two reasons. First, a beginner should not become discouraged, as some used to, if the cervix seemed to disappear. Second, the shift was a sign in itself to be followed along with the other signs.

I know of over fifty of my patients who have depended on signs and temperatures, some of whom I have followed for more than fifteen years, several through postpartum, lactation, or the premenopause.

I encouraged patients, while learning, to observe and record all signs. As they became skilled I allowed them to select and be guided by whichever signs seemed to them to be easiest to detect.

In 1964 I included the shift in the position of the cervix with the description of the other signs (SOC) in a new edition of the handbook (Keefe 1964) for the Ovulindex thermometer. I explained their use with the temperature chart in the control of fertility by systematic abstinence. More recently I published (Keefe 1976) details of the method of instruction.

Group 3. At a meeting of persons interested in natural family planning (International Symposium on Natural Family Planning, Saint John's University, Collegeville, Minnesota, 18 June 1976) I conducted a questionnaire to locate users of SOC and to find out from them their estimation of the relative value of cephalad shift as a sign of the fertile time. Question 8 was: Is self-observation of the cervix valuable for you? Question 9 was: If so, which aspect of self-observation of the cervix is the best for you? Is it dilatation, softening, elevation, or collection of mucus sample?

Results

Group 1. Of these subjects five had already noticed that the cervix changed position during the cycle, and three that it was elevated at the fertile time. Their findings are reported in table 1. From lowest to highest level the usual extent of the elevation is 1 inch (2 cm); sometimes it is 1½ inches (3 cm). They found, to use their expression, "It is harder to reach when I'm ovulating." The rate of descent in the luteal phase is more abrupt and conspicuous, and the rate of rise in the preovulatory phase is more gradual, as is the rate of change of other signs.

Group 2. As with SOC, squeamishness limits the acceptability of this system. Some subjects, reluctant at first, could be encouraged to use it when they realized that the thread on an IUD must be examined every day and that after a woman inserts a

contraceptive pessary she must verify that it covers the cervix. Some couples overcame this problem by having the husband make the examination of the cervix as he sometimes must help with taking the temperatures. They confer about the findings and share the responsibility for abstinence.

Cephalad shift is an easy sign to measure. The nullipara can estimate more readily the elevation of the cervix than she can measure the dilatation of the os in millimeters by palpation. One nulliparous subject reported that at the peak of the shift the portio vaginalis cervicis was almost flush with the vaginal walls and the vaginal fornices were obliterated. At the same time the cervix was as soft as the vaginal walls. Parous subjects with some degree of descensus uteri say, "Most of the time it's right there; around ovulation time I have to reach for it."

Couples have not been inclined to test borderline—what I call "maybe"—days, not wanting to risk a pregnancy. In retrospect they could realize that the day had not been a fertile one, because ovulation did not occur until long after. A skilled examiner can detect persistent low-estrogen episodes—and permit coition—during postpartum, lactation, and premenopause. These are difficult times to begin using the system.

Study of cephalad shift and other SOC signs gives an insight into variations from one woman to another, from one cycle to another within the individual, and among the signs. A single sign would not be adequate for every user in every circumstance. Approximately 25 percent of users ranked cephalad shift as a major sign, that is, of first importance, most readily observed, and valuable for deciding about abstinence. About 25 percent did not think it was a conspicuous sign and depended more on some other aspect of SOC.

While three subjects with retroversion of the uterus found cephalad shift to occur as with other users, the effect of retroversion needs further study.

A few subjects determined the position of the cervix at night as well as in the morning. They found a tendency for it to be a little lower than it had been in the morning and thought that for uniformity the morning was the better time to make cervical observation. Coitus the preceding night has not been observed to influence the cervical position in the morning, nor has coitus with orgasm in the preovulatory time seemed to have advanced the day of ovulation.

As with SOC, no sharp standard can be worked out for the cut-off day in the preovulatory time: changes in cephalad shift which seem to be due to fluctuations in estrogen levels are common. Intermediate position or fluctuation around it is often apparent and may be followed by bleeding with no ovulation, especially in postpartum, lactation, and premenopause.

Subjects have been able to distinguish by using all the aids: regular cycles with ovulation, short cycles, long cycles, split preovulatory phase, hypoestrin state, hyperestrin state, withdrawal bleeding, abrupt onset of luteal phase, gradual onset and atypical luteal phase.

Statistical analysis of each sign might be of academic interest but not useful. Experience shows that each woman must determine for herself the most practical signs. Rigidly limiting her to one sign or to a laboratory test, for example, in the preovulatory time might exclude her from using another sign on which she can depend.

Group 3. There were fifty-four women who answered yes to question 8 on the questionnaire. Only six of these reported they did not use temperature charts. Ages varied from 19 to 47 and parity from 0 to 8. The answers to question 9 are listed in table 2. One respondent commented that she had retroversion of the uterus and had observed nothing but inconsistencies for six months in answer to question 8. She also reported that she did not use temperature charts.

TABLE 1
Direction of Shift of Cervix at the Time of Ovulation Found during Daily Autopalpation

Direction	No. of Subjects Reporting	No. of Cycles Observed
Cephalad	20	65
No change	5	16
Caudad	0	0
Totals	25	81

TABLE 2
Aspect of Self-Observation of Cervix Named As "Best" by Users (Question 9)

Aspect Designated	No. of Users
Elevation	11
Elevation with one or more other aspects	13
Softening	9
Collection of mucus specimen	6
Dilatation	4
Two or more without elevation	6
Don't know	5
Total	54

Discussion

The first questions I am asked in discussing my system are, "How effective is it? The Pill is practically 100 percent effective," and, "What is your failure rate?" These questions used to embarrass me. I never had the ambition or financial means

to study the "effectiveness" of my method. It was readily apparent that the effectiveness could be increased by tightening up the rules for abstinence. After all, total abstinence is 100 percent effective, just as the Pill is in theory. Yet, of 1,000 women started on the Pill how many are taking it after three months, after six months? The other side of the coin is acceptability; the less the abstinence, the greater the acceptability. Effectiveness of any "method" depends also on the care taken in teaching and on the encouragement given in the supervisory follow-up.

Furthermore, I gave the couples who were under my guidance the freedom to have another pregnancy when they felt ready for it rather than try to keep them on a rigid system to accumulate a low failure record. The subjects are self-selected to begin with and expect to follow the rules. When they knowingly override them I consider it equivalent to neglecting to take the Pill or omitting the contraceptive.

I should point out that this paper reports a sign, not a "method"; it has become a part of my system, not to be used alone. I am skeptical about calculating failure rates of "methods" which depend on subjective observations, flexible rules, and uncertainty about supplementary contraceptive practices. Asked why the fertile time of female monkeys was only three days while for women it seemed longer, Carl Hartman explained, "I keep my monkeys in cages."

"If this sign is so valuable, why was it not discovered before?" I think it was not observed because clinicians look at the cervix only occasionally, not daily, and with a speculum. The discovery of this sign grew out of autopalpation, just as autopalpation grew out of collecting mucus samples. Clinicians have been more interested in studying reproductive mechanisms which might conveniently yield to interference to prevent conception. The oviduct and cervical mucus have been more popular subjects of study than the uterine ligaments.

I can only speculate about what causes the shift of the cervix. We do know that estrogens have been given to overcome procedentia uteri (Greenhill 1972). Adrenergic nerve endings are found on smooth muscle fibers of the ligamenta cardinalia and other uterine supports (Freund 1933, p. 492). These must respond to estrogens with increased tonus as do the oviducts (Fredricks, Assam, and Hafez 1976) and the ovarian ligaments.

It seems to me that scientists are too close to their laboratories to be of help in developing indicators of the fertile time for systematic abstinence. Women themselves are productive when properly encouraged. I anticipate that they may discover other useful signs. The limitations are the uncertainty in the intermediate states of estrogen production when ovulation might seem to "hang fire."

References

Decker, A. 1951. Culdoscopic observation on the tubo-ovarian mechanism of ovum reception. *Fertil. Steril.* 2:253.

Fredricks, C. M.; Assam, M. E. A.; and Hafez, E. S. E. 1976. In vitro response of rabbit utero-ovarian ligament to catecholamines. *Fertil. Steril.* 27:957.

Freund, R. 1933. Die Krankheiten des Beckenbindegewebes. I Anatomie. In *Handbuch der Gynaekologie*. Stoeckel, W. ed. Munich: Bergmann.

Greenhill, J. P. 1972. The non-surgical management of vaginal relaxation. *Clin. Obstet. & Gynec.* 15:1083.

Keefe, E. F.

1949. A practical open-scale thermometer for timing human ovulation. *New York State J. Med.* 49:2554.

1962. Self-observation of the cervix to distinguish days of possible fertility. *Bull. Sloane Hosp. Women* 8:129

1964. How to use your Ovulindex thermometer. 3d ed. New York: Linacre Labs.

1976. Physicians help make rhythm work. *New York State J. Med.* 76:205.

Rock, J. 1963. *The time has come: A Catholic doctor's proposal to end the battle over birth control.* New York: Knopf.

(This article was originally published in *International Review of Natural Family Planning*, Vol. 1, Number 1, Spring 1977.)