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# The Value Of The Papanicolaou Smear Test

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# THE VALUE OF THE PAPANICOLAOU SMEAR TEST*

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Clinical experience and research in therapy of cancer of the female genitalia and especially of the cervix have given us much with which to work. We have radio-isotopes: super-voltage x-ray: teletherapy; radical surgery, and above all, we have a tremendous store of knowledge in methods of application of all of these. And yet, when we consider all cases of the most common cancer of the female genitalia — cancer of the cervix — more than 60% of them do not live 5 years (after the diagnosis is made.)

When we look at the results of treatment year after year and decade after decade, we are not startled by the improvement in these results because they have been slow to make their appearances: but one thing is very much in evidence. It is the fact that as in all types of cancer, the earlier in the disease that therapy is begun, the better are the results.

In addition to public education, which has improved this feature of the whole picture, we need a method to detect cancer early. In other words, we need a "case finder". We have it! We have it! At least, we have one method — the Papanicolaou smear test. We have it, and we have had this tool for some time — but it has *not* been widely used. It will do little good to print it here unless those who read this put it into practice. William Stewart Halstead once said, "conceptions from the past blind us to facts which almost slap us in the face."

It is our belief that every woman should have a pelvic examination and a vaginal cytology study at least once every year. I will outline briefly the results of a survey which has led us to an even stronger conviction in this belief.

A country-wide cancer survey project using the Papanicolaou smear as a screen test has been in operation in Columbus, Ohio for the past year. This has been done under the co-directorship of Dr. John C. Ullery, Chairman of the Department of Obstetrics and Gynecology and Dr. Emmerich Von Haan, Chairman of the Department of Pathology of the Ohio State University, and with the aid of a grant from the United States Public Health Service.

A similiar survey has been in progress in Memphis, Tennessee for the past three years. The Memphis survey study has found 527 carcinomas in 70,000 examinations or an incidence of 0.75% (1 in 143). In the Columbus survey, we have found 99 carcinomas in 35,394 examinations or an incidence of 0.279% (1 in 357.)

The source of the material for examinations has come from private physicians (27,669), The Cancer Survey Clinic (3,169) and from other clinics (6,675).

The method of making the test is simple and painless. The material from the posterior vaginal fornix is removed with an aspirator and placed on a glass slide.

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This is covered with another slide, and the two are slid apart. The second specimen is prepared after the vaginal speculum is in place by scraping the area around and in the external OS of the cervix with a tongue depressor or a wooden scraper designed for this purpose. The material obtained is placed on the slide, and the slides are fixed and transported to the laboratory in a mixture of equal parts 95% alcohol and ether.

In the Columbus study the "aspiration only" method is being used with a control run by a designated few physicians who are using both the aspiration and scrape. 37,540 aspirations and approximately 5,260 aspirations and scrapes have been surveyed. Eleven (11) patients with cancer were found on positive scrape smears that were negative on aspiration.

In applying this test in your own practice, your cytologist may report his findings in one of three ways: by class, by cytology or by interpretation.

CLASSIFICATION OF PAPANICOLAOU SMEARS

| CLASS | CYTOLOGY | INTERPRETATION |
|---|---|---|
| I | Normal | Negative |
| II | Atypical, No Evidence Malignancy | Negative |
| III | Suspicious, Suggestive — Not Conclusive | Suspicious (Positive) |
| IV | Strongly Suggestive | Positive |
| V | Conclusive of Malignancy | Positive |

The suspicious or positive smear demands an adequate biopsy of the cervix, preferably by cold knife conization, a D&C and an adequate pelvic examination under anaesthesia. It must be emphasized here that this test is not infallible, and a negative report in the face of symptoms or positive, clinical findings means absolutely nothing. A patient presenting a suggestive history or suspicious or presumptive findings must have adequate biopsy and examination. This sequence of events, symptoms with negative smear, usually occurs in endometrial cancer.

We must also remember that a positive smear is by no means an indication for therapy. Definitive cancer treatment must be initiated only as a result of a positive biopsy.

In one year, from May 1, 1956 to May 1, 1957, there were 99 cancers of the female genital tract found in our survey of 35,394 women; the various types of carcinomas are as follows:

MAY 1, 1956 — MAY 1, 1957

| | |
|---|---|
| Carcinoma of the Cervix (Three — Cervical Stump) | 52 |
| Carcinoma of the Corpus | 12 |
| Carcinoma in Situ — Cervix (One during Pregnancy) | 31 |
| Carcinoma of the Vagina | 3 |
| Carcinoma of the Ovary | 1 |
| TOTAL | 99 |

Most of these tumors were unsuspected, but to appreciate the full and tremendous value of the routine Papanicolaou test in detecting 83 cancers of the cervix (of a total of 99 carcinomas), it is well to remember again the International Clinical Classification of Cancer of the Cervix. Stage 0, Microscopically No Invasion (intra-epithelial); Stage I, Limited Clinically to the Cervix: Stage II, Extending Beyond the Cervix but not to the Lateral Pelvic Wall (may also involve the upper 1/3 of the vagina): Stage III, Extending Laterally to the Pelvic Wall (or extending below the upper 1/3 of the vagina); Stage IV, With Distant Metastasis (or a frozen pelvis or bowel or bladder fistulization due to tumor).

The 83 cervical cancers were classified clinically as follows:

| | |
|---|---|
| Stage 0 | 31 |
| Stage I | 40 |
| Stage II | 4 |
| Stage III | 6 |
| Stage IV | 2 |
| TOTAL | 83 |

To further appreciate the value of the Papanicolaou smear we must look at our present results of therapy. These statistics from the Department of Obstetrics and Gynecology of the Ohio State University compare favorably with nationwide and world wide publications of survival rates.

| FIVE YEAR SURVIVAL | |
|---|---|
| Stage 0 | 96.2% |
| Stage I | 81.4% |
| Stage II | 48.5% |
| Stage III | 21.4% |
| Stage IV | 2.5% |

With these survivals of the various clinical stages of cervical cancer in mind, let us now compare the difference between the registrations in the tumor clinic at the Ohio State University Hospital ten years ago with the cases found by means of a mass survey during the year just past.

| 1947 | Stage | 1957 |
|---|---|---|
| 0% | 0 | 38% |
| 14% | I | 48% |
| 41% | II | 5% |
| 41% | III | 7% |
| 4% | IV | 2% |

This is truly progress.

Cancer of the cervix has three clinical characteristics that are extremely important in appreciating the value of the Papanicolaou smear test. First, it is, by far, the most common cancer of the female genital tract. Second, relatively good results are obtained if adequate treatment is instituted early. Third, it is the easiest to detect early of all the cancers of the female genitalia.

This test can be applied to anyone's practice who treats women. One way to reduce the 60% mortality rate from cancer of the cervix is to use this simple test routinely.

It seems then that your mother, your wife, your daughter, your sister, yes — every woman deserves and should have a pelvic examination and a "Cancer Smear Test" at least once a year.

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